

TRIBHUVAN UNIVERSITY
FACULTY OF EDUCATION

Revised Curriculum of M.Ed.
First Semester

2078 (2021)

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Core Courses

- i. Foundation of Education (Ed. 511)
- ii. Advance Education Psychology (Ed. 513)

Ed. 511: Foundations of Education

Course No.:	Ed. 511	Nature of Course: Theoretical
Level:	M. Ed.	Credit Hours: 3
Semester:	First	Total teaching hours: 48

1. Course Introduction

This course is designed for the first semester Master of Education (M. Ed.) program of the Faculty of Education (FoE), Tribhuvan University (TU). The course includes the key Eastern and Western philosophical perspectives in order to develop students' competency for visualizing the educational processes from those perspectives. More specifically, it embraces Eastern ideas from Vedic, Buddhism, Kirat Mundhum, Islam, and other indigenous beliefs in relation to education. Further, it consists of the assumptions and beliefs of progressivism, modernism, post-modernism, and transformative learning theories. The course also contains the key sociological ideas to enable students to critically explain the educational practices in Nepal through those lenses. Finally, the course intends to impart the ideas of caste, ethnicity and nationalism, gender and feminism, and identity construction. These philosophical and theoretical ideas are expected to help students develop competencies required to become teaching professionals, educational administrators, educational supervisors, curriculum developers, and educational planners.

2. General Objectives

The course aims to make students able to;

- critically analyze the educational processes and practices in Nepal from Vedic, Buddhist, Islam, Kirat and other indigenous philosophies;
- assess educational processes and practices in Nepal from the key Western philosophies of education;
- acquaint themselves with the sociology of education and visualize the education systems, structures, and practices of Nepal from sociological perspectives;
- analyze the educational policies, programs, and practices from power perspectives; and
- examine the key issues of gender, caste, ethnicity, nationalism, and identity in education.

3. Course Details

Unit I: Eastern Philosophies and Education (14 hours)			
Specific objectives	Contents	Content coverage	
<ul style="list-style-type: none">• Conceptualize the meaning and scope of philosophy from Vedic perspective;• Assess the philosophical premises of the Bhagavad Gita;• Reflect on educational implication of the Bhagavad Gita;• Explain the philosophical premises and educational	<ul style="list-style-type: none">1.1 Meaning of philosophy in the Vedic thought;1.2 Bhagwat Gita and education;1.3 Buddhist philosophy and education;1.4 Quran and education; and1.5 Kirat Mundhum and indigenous philosophies and education.	<ul style="list-style-type: none">1.1.1 Meaning and scope of philosophy from Vedic perspective;1.1.2 Introduction, philosophical and educational perspectives of the Bhagavad Gita;1.1.3 Philosophical perspectives and educational implication of the Buddhism;1.1.4 Introduction, philosophical beliefs and educational	

<p>implication of Buddhism;</p> <ul style="list-style-type: none"> • Introduce philosophy of Quran and educational implication; and • Acquaint with the Kirat Mundhum and other indigenous knowledge. 		<p>1.1.5 implications of Quran/Islam; and Introduction of indigenous knowledge: Kirat Mundhum, and other indigenous philosophies and their educational implications.</p>
Teaching learning strategies		
Teacher's Inputs (14 hrs.) <ul style="list-style-type: none"> • Orient the course and assignments; • Share and generate students' ideas in different themes of this course; • Provide learning materials; • Encourage them to engage in group works, sharing ideas and presentation in the class; • Provide topics for class presentation; • Orient students about book/chapter review task with a set of guidelines; and • Provide feedback and maintain record of students' work. 	Students' Efforts (28 hrs.) <ul style="list-style-type: none"> • Be oriented about the course and requirements; • Participate in class activities and make presentation in the class; • Study the resources provided by the teacher; • Explore the reading materials in the library or internet; • Be familiar with book/chapter review guidelines; • Identify a book/chapter for review from the content area; and • Review the book individually and submit the report. 	Tasks for assignment <ul style="list-style-type: none"> • Review a book/book chapter related to the content area and write a review in about 1000 words (Teacher may assign a particular book for review).
Unit II: Western Philosophies and Education (8 hours)		
Specific objectives	Contents	Content coverage

<ul style="list-style-type: none"> • Conceptualize meaning and scope of western philosophy; • Elaborate philosophical perspectives and educational ideas of progressivism; • Critically analyze modern and postmodern philosophies and educational implication; • Explain Adult learning philosophies and educational implication; and • Relate these philosophies to understand Nepali educational processes and practices. 	<p>2.1 Meaning and scope of philosophy from western perspective;</p> <p>2.2 Progressivism in education;</p> <p>2.3 Modernism and postmodernism in education;</p> <p>2.4 Adult learning philosophy; and</p> <p>2.5 Reflection of these philosophies and theories in Nepali context.</p>	<p>2.1.1 Meaning and scope (ontology, epistemology and axiology) of western philosophy;</p> <p>2.1.2 Philosophical premises and educational implication (objectives, content, learning methods, teachers' and students' role) of progressivism;</p> <p>2.1.3 Philosophical ideas and educational implication (objectives, content, learning methods, teachers' and students' role) of modernism and post-modernism;</p> <p>2.1.4 General introduction of transformative learning philosophy: contribution of Paulo Freire (philosophical and educational views), contribution of Jack Mezirow (educational view); and</p> <p>2.1.5 Critical reflection of the fits and misfits of these theories in Nepali educational milieu.</p>
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Teaching learning strategies		
Teacher's Inputs (8 hrs.)	Students' Efforts (16 hrs.)	Tasks for assignment
<ul style="list-style-type: none"> • Share ideas of Western philosophies allowing students to reflect on their ideas, experiences, and practices; • Engage the students in group works and sharing ideas; • Provide article review task and guideline of article review; and • Provide feedback and maintain record of the review task, and class presentation. 	<ul style="list-style-type: none"> • Share and discuss the ideas shared by the teachers; • Search and study additional resources; • Search articles for review; • Review article based on the guideline provided; and • Make class presentations. 	<ul style="list-style-type: none"> • Students will explore a journal article and prepare a review note between 500 to 1000 words.

Unit III: Sociological Perspectives and Education (8 hours)

Specific objectives	Contents	Content coverage
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<ul style="list-style-type: none"> • Explain the basic ideas of structural-functionalism, conflict, symbolic interactionism, and critical theories; and • Use the sociological theories to explain the particular sociological issues and practices in education sphere of Nepal and elsewhere. 	<ul style="list-style-type: none"> 3.1. Sociology, sociological theories and education; 3.2. Structural-functionalism; 3.3. Conflict theories; 3.4. Symbolic interactionism; and 3.5. Critical theories. 	<ul style="list-style-type: none"> 3.1.1 Introduction of sociology, sociological theories and their relation with education; 3.1.2 Structural-functionalism (theoretical concept, fundamental assumptions, key criticism, educational views); 3.1.3 Conflict theories (dialectical materialism, key beliefs, criticisms, educational views); 3.1.4 Symbolic interactionism (concept, assumptions, criticism, educational views); 3.1.5 Critical theories (Concept, basic assumptions, criticism, educational views).
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Teaching learning strategies

Teacher's Inputs (8 hrs.)	Students' Efforts (16 hrs.)	Tasks for assignment
<ul style="list-style-type: none"> • Share ideas of key sociological theories; • Provide resources; • Encourage students to explore reading materials; • Engage students in group works, discussion, and sharing ideas; • Provide feedback on students' tasks; • Provide project work guideline • Form groups (5-7 students in a group) for collective project work; • Provide feedback, evaluate the task, and maintain record. 	<ul style="list-style-type: none"> • Actively participate in classroom activities of group works, sharing ideas, and presentations; • Engage in class presentations; and • Be aware of the project work and prepare project work report. 	<ul style="list-style-type: none"> • The students are required to choose an issue of project related to content areas and prepare a project report in about 2000 words in groups.

Unit IV: Politics in/of Education (10 hours)

Specific objectives	Contents	Content coverage
<ul style="list-style-type: none"> Clarify the concept of power, politics, and politics of/in education; Explain different power perspectives in education; Compare different power perspectives in education; Analyze the educational practices from any of the power perspectives; and Explain how educational systems are influenced by power in different periods of governance. 	4.1. Power and politics in/of education; 4.2. Foucauldian power and education; 4.3. Linguistic power and education; and 4.4. Elite power and education in Nepal.	4.1.1 Concept of power, politics, and politics in/of education; 4.1.2 Foucault's discourse as power and its influence in educational, policies, programs, and classroom culture; 4.1.3 Robert Philipson's ideas of linguistic imperialism: intrinsic, extrinsic, and functional power of language and language use in the classroom practices; and 4.1.4 Education in different regimes in Nepal (Prior to Rana period, Rana period, Panchayat Era, and in Multi-party democracy in Nepal).

Teaching learning strategies		
Teacher's Input (10 hrs.)	Students' Efforts (20 hrs.)	Tasks for assignment
<ul style="list-style-type: none"> Share different power perspectives; Provide reading materials; Encourage the students in group works and discussion sharing their ideas; Provide a task of writing reflective note to the students; Provide feedback on the works (class presentation and reflective note) of students; and Evaluate and maintain the record of the students' tasks. 	<ul style="list-style-type: none"> Participation in the class activities; Sharing ideas and experiences; Making class presentation; and Prepare reflective notes. 	<ul style="list-style-type: none"> The students will prepare a reflective note on an educational issue or practices in Nepal.

Unit V: Gender, Ethnicity, Nationalism, and Identity Perspectives in Education (8 hours)		
Specific objectives	Contents	Content coverage
<ul style="list-style-type: none"> Clarify the concept of gender in educational processes; 	5.1. Gender and education; 5.2. Inter-sectionality and	5.1.1 Concept of gender, gender roles in educational processes and practices;

<ul style="list-style-type: none"> Clarify the concept of multiple exclusions from inter-sectionality; Conceptualize caste, ethnicity, nation, state, and nationalism; Explain role of education for developing nationalism; Explain the concept of identity; and Visualize how education supports to construct identity. 	<ul style="list-style-type: none"> education; 5.3. Caste, Ethnicity and Nationalism; and 5.4 Identity and identity construction 	<ul style="list-style-type: none"> 5.1.2 Multiple exclusions and its impact in education; 5.1.3 Concept of caste, ethnicity, race, nation, nationalism, nation-state, and state-nation; 5.1.4 Role of education on developing nationalism; 5.1.5 Concept of identity, construction of individual and social/ethnic identity; and 5.1.6 Role of education in the construction of identity.
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Teaching Learning Strategies		
Teacher's Input (8 hrs.)	Students' Efforts (16 hrs.)	Tasks for assignment
<ul style="list-style-type: none"> Provide reading materials to the students; Facilitate them to engage in reading papers on different concepts such as gender, ethnicity, nation-state, state-nation, race, nationalism, and identity; Allow them to share the ideas in group and make presentation of group work in the class; Allow them to find the similarities and differences of these ideas; Provide a task of preparing critique paper of a newspaper article with a guideline; and Provide feedback on the class presentation and critique paper of students. 	<ul style="list-style-type: none"> Take part in reading activities in the class; Take part in classroom discussion; Make class presentation; and Develop a critique paper on a newspaper article. 	<ul style="list-style-type: none"> The students will prepare a critique paper in the form of a newspaper article to be published in a magazine or daily newspaper.

4. Evaluation Criteria (Internal - 40% and External - 60%)

Students' learning will be evaluated based on 40% internal assessment and 60% external examination. Evaluation criteria will be as explained below.

Criteria	Marks	Description
Attendance	5	$70-80=3, 81-90=4, 91-100=5$
Class presentation	5	Each student make a class presentation on a specific theme selected/provided.
Assignment I (Individual task)	10	Any one task from Unit 1 or 2 or 3 or 5.
Assignment II (Group task)	10	Task from Unit 3
Assignment III (Individual test)	10	Written examination: Objective and subjective items
Total internal assessment	40	
External evaluation: The external 60% written test covers the following nature of test items and marks.		
External Examination	60	Group A: Objective items $(10 \times 1) = 10$ Group B: Short answer type items $(6 \times 5) = 30$ (including two or questions) Group C: Essay type items $(10 \times 2) = 20$ (including one or question)

5. Recommended books and references

Unit I

Ghimire, J. (2017). *Educational Perspectives in the Bhagavad Gita*. A dissertation Report Submitted for the PhD in Education to Nepal Sanskrit University. Sinduli: Himawatkhaanda Nepal Research Centre Pvt. Ltd.

Madhavacharya, (1882). *The Sarva- Darshan-Samgraha on review of the different systems of Hindu philosophy* (Cowell, E.B. & Gough, A.E, Trans.) London: Trubner & Co., Language Hill. pp. 12 -35.

Nasr, S. H. (2006). Islamic Philosophy from Origin to the Present. United State of America: State University of New York Press. Pp.31-47.

Pthak, R. P. (2012). *Philosophical and Sociological Principle of Education*. Delhi: Pearson, pp. 65-76.

Rai, I. M. (2020). *Indigenous Knowledge and Ways of Knowing: An Introduction. A Working Paper. Teacher Manual*. Tribhuvan University, Faculty of Education and Kathmandu University, Faculty of Education.

Vidyarnava, R.B.S.C. (1918).*The Sacred Books of Hindus Volum XXI*. (Trans.). Allahabad: The Panini Office, Bhuvaneswari Asrama, pp.vxi-xix.

Williams, M. (2009). *Indian Wisdom examples of the Religious, Philosophical, and Ethical Doctrines of the Hindus*. United States of America: Cambridge University Press.PP.294 -308.

Yamphu. H. P. R. (2016). *Pellam: A Cultural Way of Making Yamphu Themselves Self-sovereign People. Nepali Anthropology: New Direction and Contributions*. Seminar Proceedings. (B. Pokharel, J. Rai, M. S. Lama, edits.). Kathmandu: Central Department of Anthropology Tribhuvan University, Kirtipur.

चाम्लिङ्ड, भोगीराज (२०७५) मुन्दुम के हो ? कति प्राचीन हो ? (प्रथम संस्करण)। कार्यपत्र। काठमाडौँ: किरात राई संस्कृतिक कलाकार संघ, केन्द्रीय समिति।

चाम्लिंड, भोगीराज (२०७१, संकलन तथा सम्पादन)। मुन्दुम। सृष्टि भाग १। काठमाडौँ : किरात राई चाम्लिंग खाम्बातिम केन्द्रीय कार्यसमिति। कोटेशोवर।

चेम्जोङ्ग, इमानसिंह (सम्बत २०५९)। किरात मुन्दुम (किरातको वेद)। ललितपुर: किरात याकथंग चुमुलुंग केन्द्रीय कार्याल, महालक्ष्मी थान।

राई, ज्ञावनशेर र राई, शिवराम (सम्बत २०७३, संकलक)। चाम्लिंड, भोगीराज (सम्पादक)। मुन्दुम होसुंग। काठमाडौँ : किरात राई चाम्लिंड, खाम्बातिम केन्द्रीय कार्य समिति। कोटेशोवर।

Unit II

Collins, D. E. (1998). Review Essay: From Oppression to Hope: Frere's Journey toward Utopia. *Anthropological & Education Quarterly 29(1)*, pp. 116-124. Retrieved from <https://www.jstor.org/stable/3196106>

Cranton, P. (2011). Adult learning and instruction: Transformative-learning perspectives. R. Kjell (Ed.). *Adult learning and education*. UK: Elsevier publications. PP.53 - 59.

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- Ozmon, A. H. and Craver, S. M. (2003). *Philosophical foundations of education* (7th ed.). New Jersey: Merrill Prentice Hall. Pp.337 -269.
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Unit III

- Rice University (2015). *Introduction to sociology*. Texas: Author.
- Ritzer, G. (2011). *Sociological theory* (8th ed.). New York: The McGraw-Hill Companies Inc.
- Ormerod, R. J. (2008). The history and ideas of Marxism: The relevance for OR. *The Journal of the Operational Research Society*, 59 (12), 1573-1590.
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- Angelo, T. D., Seaton, G., & Smith, N. (n.d.). Critical theory in education. Retrieved from https://www.academia.edu/8754749/Critical_Theory_in_Education
- Singh, J. P. (2019). Humanism. Humanism and Jai Prithvi Foundation. Kathmandu: Author. First print of the book was published in Bangalore in 1928.

Unit IV

- VeneKlasen, L., & Miller, V. (2006). Dynamics of power, inclusion, and exclusion. *Nonprofit Online News Journal*. Nonprofit Online News and The Gilbert Center.
- Nordensvard, J. (2014). The politics of education: education from political and citizenship discourse. *Policy Futures in Education*, 12 (3), 340-346.
- Pitsoe, V., & Letseka, M. (2013). Foucault's discourse and power: Implications for instructionist classroom management. *Open Journal of Philosophy*, 3(1), 23-28.
- Dussel, I. (2010). Foucault and education. In M. W. Apple, S. J. Ball, & L. A. Gandin (Eds.), *The Routledge International Handbook of Sociology of Education* (pp. 26-36). London and New York: Routledge Taylor and Francis Group.
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- Bourdieu, P. (1986). The forms of capital. In J. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241-58). Westport CT: Greenwood.
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Unit V

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- Cerulo, C. A. (1997). Identity construction: New issues and new directions. *Annual Reviews Inc.*, 23, 385-409.
- Vignoles, V. (n. d.). Identity: Personal and social. In K. Deaux, & M. Snyder (Eds.), *Oxford handbook of personality and social psychology* (2nd ed.).
- Freire, S., & Associates (2009). Identity construction through schooling: listening to students' voices. *European Educational Research Journal*, 8 (1), 80-88.

Ed. 513: Advanced Educational Psychology

Course No.: Ed. 513
Level: M. Ed.
Semester: First

Nature of course: Theoretical
Credit Hours: 3 cr. hrs.
Teaching Hours: 48 hours

1. Course Introduction

This is a core course for a Master's degree in Education. The course consists of four units that deal with the theoretical and practical aspects of educational psychology. The course aims to provide students with professional knowledge, skills and understanding about developmental psychology and learning theories along with their educational implications. In case of developmental aspect, the emphasis will be given to adolescence's growth, development, problems behavior and disorders that arise during this phase. The course explores different schools of learning theories centering on how children learn in their everyday life and the implications of those theories in formal education. Finally, the course also introduces knowledge practices related to guidance and counselling in a school setting, and focuses on teachers' role as a guidance worker and counsellor.

2. General Objectives

- To conceptualize the theoretical nature of human development;
- To explore the developmental aspects and problem behavior and disorders of adolescence;
- To critically reflect on different schools of learning theories and their classroom implications;
- To get acquainted with the concept of student guidance and counselling;
- To explain the teacher's role as a guidance worker and counsellor in school.

3. Course Details

Unit I: Understanding Human Development (10 hrs.)		
Specific Objectives	Contents	Content Coverage
<ul style="list-style-type: none">• Describe the concept of and issues of human development;• Explain the behaviorist, psychoanalytic, cognitive, and ecological theories of human	1.1 Concept and issues in human development 1.2 Theories of human development and their educational implications	1.1 Concept and issues of human development: nature vs. nurture, continuity vs. discontinuity and universal vs. context specificity 1.2.1 Behaviorist theory : B. F Skinner 1.2.2 Psycho-analytical theory: Sigmund Freud 1.2.3 Cognitive development theory: Jean Piaget 1.2.4 Ecological theory:

development		Bruffenbrenner
Teaching Learning Strategies		
Teacher's' Efforts	Student's Efforts	Tasks
<ul style="list-style-type: none"> Provides learning materials to the students and ask them to suggest ideas for classroom discussion. Gives a short lecture and conceptual presentation on the issues and theories before the class discussion. Forms groups for discussion. Organize debate on the issues. Summarizes the discussion. 	<ul style="list-style-type: none"> Prepare discussion questions. Participate in the group discussion equally and draw ideas. Get involved in debate for and against the human development issues and theories. Raise questions about the contents and issues that were not well understood. 	<ul style="list-style-type: none"> Student need to prepare a four-page reflective report based on discussion in the group and their experience of the debate. To prepare this report, students consult the books and articles available in the library as well as online materials.
Unit II: Adolescence and Educational Implication		(12 hrs.)
Specific objectives	Contents	Content coverages
<ul style="list-style-type: none"> Describe the concept of Adolescence Explore Physical, cognitive, emotional, social and moral development of adolescence and its educational implications; Get acquainted with problems behavior 	<p>2.1 Introduction and developmental aspects of adolescence and their educational implication</p> <p>2.2 Problems behavior and disorder during Adolescence</p> <p>2.3 Issues of ICTs and mass media and their educational implication</p>	<p>2.1 Introduction to adolescence, Physical, cognitive, social, emotional, moral development and their educational implications.</p> <p>2.2.1 Problems behavior: Drug abuse, sexual perversion, bullying, loss and bereavement, anger, aggression and violence in school</p> <p>2.2.2 Disorder: Depression and Suicide</p> <p>2.3. Short introduction to</p>

<p>and disorders during adolescence;</p> <ul style="list-style-type: none"> • Assess the role of ICT and mass media and their impact during adolescence; • Develop ideas on adolescence from indigenous and gender perspectives. 	<p>2.4 Viewing Adolescence from indigenous and gender perspectives</p>	<p>adolescents' engagement in ICTs and mass media and their effects on physical and psychological health of adolescents.</p> <p>2.4 Characteristics of adolescents from diverse socio-cultural backgrounds, their typical practices acknowledging children as adolescents.</p>
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Teaching Learning Strategies

Teacher's Efforts	Student's Efforts	Tasks
<ul style="list-style-type: none"> • Assists the students by elaborating the contents and the nature of the topics. • Highlights the major growth and developmental characteristics and changes. • Prepares a list of possible problems and issues faced by adolescents in contemporary society through classroom discussion. • Encourages students to explore strategies and methods to promote adolescents' well-being 	<ul style="list-style-type: none"> • Prepare the presentation of five to seven minutes in the group focusing on the physical, social, mental, emotional, characteristics and changes with implications. • Actively participate in the class discussion on problems and challenges that are to be faced during adolescence. • Work in group to explore the teaching learning strategies and methods for enhancing adolescents' wellbeing. • Share their work with each other. 	<p>Two major tasks the students will accomplish in the unit:</p> <ol style="list-style-type: none"> Individually students must write a three-page reflective note as a summary of chapter compulsorily. Specifically as instructed by teachers, students will carry out certain number of presentation covering the course contents.

as a classroom implication.		
Unit III: Learning Theories and Educational Implication (16 hrs.)		
Specific objectives	Contents	Content Coverage
<ul style="list-style-type: none"> • Get acquainted with the basic concept of behaviorism and its implication in classroom teaching. • Develop ideas on cognitivism and its educational implications. • Get familiar with humanism theories and their educational implications. • Conceptualize constructivism and connectivism and their educational implication. 	3.1 Behaviorism and its educational implication 3.2 Cognitivism and its educational implication 3.3 Humanism and its educational implication 3.4 Constructivism and its educational implications 3.5 Connectivism and its educational implication	Brief introduction to behaviorism, cognitivism, humanism, constructivism and connectivism, their major characteristics, contributors, essence and their key strategies, critiques and techniques in classroom teaching and learning.
Teaching Learning Strategies		
Teacher's Efforts	Student's Efforts	Tasks
<ul style="list-style-type: none"> • Assists to conceptualize the different schools of learning theories • Encourages students to design teaching learning activities based on the concepts provided. • Manages classroom for students' presentation. • Summarizes all 	<ul style="list-style-type: none"> • List out the major characteristics, contributors and essence of different schools of learning theories. • Consult library to elaborate the concepts and ideas given in the classroom. • Each group prepares a 7 to 	<ul style="list-style-type: none"> • Library work of the group will be a key contribution to updating their learning theories and breaking their mind set. • Major task is students' presentation of 7 to 10 presentation. • Prepare unit's summary on different school of learning theories and their strategies and

different schools of learning theories.	<p>10 minute presentation.</p> <ul style="list-style-type: none"> Share their presentations with each other after drawing conclusions. 	methods informing classroom teaching and learning.
Unit IV: Guidance and Counseling in School		(12hrs.)
Specific objectives	Content	Content Coverage
<ul style="list-style-type: none"> Get acquainted with the concept of guidance in school setting Discuss teachers' major concern in schools State the teachers' role as students' adviser in school. Get familiar with essential guidance program in school Show the relationship between teachers and guidance worker in school. Develop ideas on counseling in school setting Mention the stages of counseling Discuss the individual and group counseling and techniques Show the relationship between counselor and teachers. 	<p>4.1 Introduction to guidance in school</p> <p>4.1.1 Teacher and school guidance</p> <p>4.1.2 Teacher concern</p> <p>4.1.3 Teacher as students' advisor</p> <p>4.1.4 Essential guidance program</p> <p>4.1.5 Teacher-guidance relationship</p> <p>4.2 Introduction to Counseling in School</p> <p>4.2.1 Stage of counseling</p> <ul style="list-style-type: none"> Technique of counseling Individual counseling <ul style="list-style-type: none"> Technique of individual counseling Group Counseling <ul style="list-style-type: none"> Technique of individual counseling <p>4.2.2 Teacher–counselor relationship.</p>	<p>4.1 Short introduction to guidance and its major characteristics.</p> <p>4.1.1 Role of teachers and school guidance program</p> <p>4.1.2 Major teacher concern about students and school program.</p> <p>4.1.3 Role of teachers as students' advisor (facilitator/ students' supporter, wise choice maker)</p> <p>4.1.4 Ideas on essential guidance program in school</p> <p>4.2 Short introduction to counseling in schools.</p> <p>4.2.1 Conceptualization of individual and group counseling, procedure of carrying out individual and group counseling.</p> <p>4.2.2 Discuss the relationship between teacher-counselor.</p>

Teaching Learning Strategies		
Teacher's Efforts	Student's Efforts	Task
<ul style="list-style-type: none"> • Assists in conceptualizing guidance and counseling. • Demonstrates how a teacher advises students as a guidance worker. • Introduces essential guidance program • Mentions the technique of carrying out individual and group counseling. 	<ul style="list-style-type: none"> • Actively participate in the classroom discussion. • Work in group on how a guidance worker supports students' problems. • Perform roles as a guidance worker. • List out the essential skills and techniques for carrying out counseling in school setting. 	<ul style="list-style-type: none"> • Visit the schools and collect information about the 'students' difficulties. Then prepare a short advice plan to support the students • Students themselves perform as a guidance worker in their own group and each develop a plan of advising action. • Individual students, based on classroom interactions, teachers' inputs, and their visit to schools for conducting interviews, prepare a report as a plan for actions to support adolescents for resolving their educational difficulties. Plan should be 2500-3000, Times New Roman, 1.5 spacing.

4. Evaluation Criteria (Internal 40%, External 60%)

Students' learning will be evaluated based on 40% internal assessment and 60% external examination. Evaluation criteria are given below:

Criteria	Marks	Remarks
Internal assessment: The internal assessment will be formative as well as summative in nature which includes following activities.		
Attendance	5	70-80=3, 81-90=4, 91-100=5
Class participation	5	Presentation (either in pair or individual).
Assignment I (Individual task)	10	Any one task from Units I or II.
Assignment II (Group task)	10	Any one task from Units III or IV.
Assignment III (Individual test)	10	Written examination: Objective and subjective items (from unit I, II, III and IV)

External evaluation: The external 60% written test covers the following nature of test items and marks.

External Examination	60	Group A: Objective items (10×1) = 10 Group B: Short answer type items (6×5) = 30 (including two or questions) Group C: Essay type items (10×2) = 20 (including one or question)
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5. Recommended books and references

- Crain, W. (2014). *Theories of adolescent concept and application* (6th ed.). Pearson Education Limited USA. (Unit, II)
- Hilgard, E.R. & Bower, H.G. (1975). *Theories of Learning*. Delhi: Prentice Hall. (Unit, III)
- Hurlock, E. B. (2002). *Developmental psychology: A life-span approach*. New Delhi: Tata McGraw Hill Publishing Company. (Unit, I & II)
- Hill, W.F. (1973) *Learning: A survey of psychological interpretation*. Great Britain: Lowe & Brydone. (Unit, III)
- Hergenhahn, B. R. & Olson, M. N. (2001). *An introduction to theory of learning* (8th ed.). New Delhi: PHI Learning Private Limited. (Unit, III)
- Hergenhahn, B.R. & Henley, T. B. (2014). *An introduction to the history of psychology* (7th ed.). USA: Wadsworth Cengage learning. (Unit, III)
- Hurlock, E.B. (2002). *Developmental psychology: A life-span approach*. New Delhi: Tata McGraw Hill. (Unit, I & II)
- King, D. B. Woody, W.D. & Viney, W. (2013). *History of psychology ideas & context* (5th ed.). New York: Pearson Education, Inc. (Unit, III)
- Learner, R.M & Steinberg, L. (2014). *Handbook of adolescent psychology*. John Willey and Sons, Inc. (Unit, II)
- Lines, D. (2006). *Brief counselling in schools working with young people from 11-18* (2ed). New Delhi: Sage Publication.
- Myrick, R. D. (2011). *Developmental guidance and counselling: A practical approach* (5th ed.). Minneapolis: Educational Media Corporation. (Unit, IV)
- Oslon, M. H. & Hergenhahn, B.R. (2010). *An introduction to theories of learning* (VIII ed.). New Delhi: PHI Learning Private Limited. (Unit, III)
- Ormrod, J.E. (2012). *Human learning* (6th ed.) New York: Pearson. (Unit, I & II)
- Rogers, D. (1972). *Psychology of adolescence*. New York, N.Y. (Unit, II)
- Sigelman, C. K. & Rider, E. A. (2018). *Life-span human development*. USA: Cengage learning. (Unit, III)
- Stenberg, L. (2017). *Adolescence* (7th ed.). New York: McGraw-Hill Education. (Unit, II)
- Santrck J.W. (2011) *Educational Psychology*, (IV ed.). New Delhi: Tata McGraw-Hill Publishing Company Limited. (Unit, I)
- Santrck J.W. (2007) *Adolescence, 11th ed.* New Delhi: Tata McGraw-Hill Publishing Company Limited. (Unit, II)
- Santrck J.W. (2011). *Lifespan development* (14th ed.). New Delhi: Tata McGraw-Hill Publishing Company Limited. (Unit, I & II)
- Schunk, H.D. (1996). *Learning theories*. Englewood Cliffs, NJ: Prentice Hall. (Unit, III)
- Sigelman C.K. & Rider E.A. (2012). *Lifespan human development*, (7th ed.). USA: Wadsworth, Cengage Learning. (Unit, I & II)
- Woolfolk, A. (2008). *Educational psychology*. India: Pearson Education.

Specialization Courses

Biology Education

- i. Bio. Ed. 515 (T+P) - **Plant Systematics and Anatomy**
- ii. Bio. Ed. 516 (T+P) – **Animal Systematics and Anatomy**
- iii. Bio. Ed. 517 (T+P) – **Cytogenetics and Breeding**
- iv. Bio. Ed. 518 (T+P) – **Environmental Biology and Environmental Education**

Bio.Ed.515: Plant Systematics and Anatomy

Course No.: Bio.Ed.515(T)

Nature of the course: Theoretical

Level: M. Ed. in Biology

Credit hours: 2

Semester: First

Teaching hours: 32

Periods/week: 2

1. Course Introduction

This course aims to provide advanced knowledge in the field of systematics, diversity and anatomy of plants. This course consists of four units with different topics that include systematics, diversity and life cycles of lower plants, non-flowering plants, higher plants including gymnosperms and angiosperms. The course also focuses on the adequate knowledge on economically useful plants of Nepal with the details on their anatomical development.

2. General Objectives

General objectives of this course are to:

- familiarize the students with the systematic position, habit, habitat, structure and life cycles of some important lower plants (algae, fungi), non-flowering plants (bryophytes and pteridophytes) and higher plants (gymnosperms) and taxonomic characters of angiosperms.
- provide the knowledge on modern trends in Plant Taxonomy.
- provide the students with the advanced knowledge on the economic importance of lower (algae, fungi) and higher plants (angiosperms and gymnosperms).
- illustrate the structure and functions of secondary bodies in plants.

3. Specific Objectives and Contents:

Specific Objectives	Contents
<ul style="list-style-type: none">• Explain the general characteristic features and life cycle of <i>Polysiphonia</i>.• Explain the economic importance of Algae regarding beneficial	<p>Unit I: Lower plants (10)</p> <p>1.1 Algae</p> <p>1.1.1. Systematic position, habit, habitat, structure and life cycle of <i>Polysiphonia</i></p> <p>1.1.2. Economic importance of algae</p> <p>1.1.2.1. Beneficial effects of algae (In food, industries, nitrogen fixation, medicine</p>

<p>effects (such as in food, industries, nitrogen fixation, medicine and antibiotics, water purification, sewage disposal, radioactive wastes, land reclamation, source of growth substances, lens paper making) and harmful effects (such as death of fishes, animals and human beings, in problems in water purification, supply and pollution, salt damage by blue green algae and accidents due to blue green algae).</p> <ul style="list-style-type: none"> • Describe the habit, habitat, structure and life cycle of <i>Penicillium</i>. • Explain the economic importance of fungi regarding useful effects viz. in food, industries, medicines and soil fertility and harmful effects viz. food spoilage, diseases to Human beings such as aspergillosis, moniliasis, cryptococcosis, 	<p>and antibiotics, water purification, sewage disposal, radioactive wastes, land reclamation, source of growth substances, lens paper making</p> <p>1.1.2.2. Harmful effects of algae (Death of fishes, animals and human beings, problems of water purification, supply and pollution, salt damage by blue green algae, Accidents due to blue green algae)</p> <p>1.2. Fungi</p> <p>1.2.1. Systematic position, habit, habitat, structure and life cycle and <i>Penicillium</i></p> <p>1.2.2. Economic importance of fungi</p> <p>1.2.2.1. Useful effects of fungi (In food, industries, medicines, soil fertility)</p> <p>1.2.2.2. Harmful effects of fungi (Food spoilage, diseases to Human beings - aspergillosis, moniliasis, cryptococcosis, coccidiomycosis, Plant diseases, (Black rust of wheat, loose smut of wheat, powdery mildew, leaf blight, late blight of potato etc.), timber destruction, Mushroom poisoning (<i>Amanita</i> sps, <i>Conocybe</i> sps, <i>Galerina</i> sps, <i>Lepiota</i> sps))</p>
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<p>coccidiomycosis, plant diseases such as black rust of wheat, loose smut of wheat, powdery mildew of wheat, leaf blight of maize, late blight of potato, timber destruction, Mushroom poisoning due to species of <i>Amanita</i>, <i>Conocybe</i>, <i>Galerina</i> and <i>Lepiota</i>.</p> <ul style="list-style-type: none"> • Describe the habit, habitat, structure and life cycle of <i>Penicillium</i>. • Describe the habit, habitat, structure and life cycle of <i>Plagiochasma</i>. • Describe habit, habitat, structure, development and life cycles of Pteridium. • Discuss the economic importance of pteridophytes. 	<p>1.2.3. Systematic position, habit, habitat, structure and life cycle and <i>Penicillium</i></p> <p>1.3. Bryophyta</p> <p>1.3.1. Systematic position, habit, habitat, structure and life cycle of <i>Plagiochasma</i>.</p> <p>1.4. Pteridophyta</p> <p>1.4.1. Habit, habitat, external and internal structure, development and life cycles of <i>Pteridium</i></p> <p>1.4.2. Economic importance of pteridophytes.</p>
<ul style="list-style-type: none"> • Give a short description of Gymnosperms. • Describe the distribution, external and internal structures, life 	<p>Unit II. Higher Plants (10)</p> <p>2.1. Gymnosperms</p> <p>2.1.1. Introduction</p> <p>2.1.2. Distribution, external and internal structures, life cycle and economic importance of <i>Cedrus</i></p>

<p>cycle and economic importance of <i>Cedrus</i>.</p> <ul style="list-style-type: none"> • Discuss the modern trends in Plant Taxonomy such as external morphology, vegetative anatomy, cytotaxonomy, embryology and chemotaxonomy in relation to taxonomy. • Describe the systematic position, taxonomic features, affinities and economic importance of the following families: <ul style="list-style-type: none"> A. Dicotyledons: Umbelliferae or Apiaceae, Polygonaceae and Euphorbiaceae B. Monocotyledons: Gingiberaceae, Gramineae or Poaceae 	<p>2.2. Angiosperms</p> <p>2.2.2. Modern trends in Plant Taxonomy</p> <p>2.2.2.1. External morphology in relation to taxonomy</p> <p>2.2.2.2. Vegetative anatomy in relation to taxonomy</p> <p>2.2.2.3. Cytotaxonomy in relation to taxonomy</p> <p>2.2.2.4. Embryology in relation to taxonomy.</p> <p>2.2.2.5. Chemotaxonomy in relation to taxonomy</p> <p>2.2.3. Systematic study, taxonomic features, affinities and economic importance of the following families:</p> <p>Dicotyledons: Umbelliferae or Apiaceae, Polygonaceae and Euphorbiaceae</p> <p>Monocotyledons: Gingiberaceae, Gramineae or Poaceae</p>
<ul style="list-style-type: none"> • Discuss the distribution, scientific names, families and economic importance of some medicinal, crop, timber and edible oil yielding 	<p>Unit III. Economic Plants (4)</p> <p>3.1. Important medicinal plants of Nepal</p> <ul style="list-style-type: none"> • Bojho (<i>Acorus calamus</i>), Aswagandha (<i>Withania</i>)

<p>plants of Nepal as mentioned in the content.</p>	<p><i>somnifera)</i>, Belladonna (<i>Atropa belladonna</i>), Ashuro (<i>Justicia adhatoda</i>), Digitalis or Foxglove (<i>Digitalis purpurea</i>), Pudina (<i>Mentha arvensis</i>), Lasun (<i>Allium sativum</i>), Yarshagumba (<i>Ophiocordyceps sinensis</i>)</p> <p>3.2. Important crop plants of Nepal</p> <ul style="list-style-type: none"> • Rice (<i>Oryza sativa</i>), Wheat (<i>Triticum aestivum</i>), maize (<i>Zea mays</i>). <p>3.3. Important timber trees of Nepal</p> <ul style="list-style-type: none"> • Sal (<i>Shorea robusta</i>), Sissoo (<i>Dalbergia sissoo</i>), Teak (<i>Tectona grandis</i>), Deodar (<i>Cedrus deodara</i>), Pine (<i>Pinus</i> sps) <p>3.4. Important oil yielding plants of Nepal</p> <ul style="list-style-type: none"> • Mustard (<i>Brassica</i> sps), Groundnut (<i>Arachis hypogaea</i>), Sesame (<i>Sesamum indicum</i>), Sunflower (<i>Helianthus annus</i>)
<ul style="list-style-type: none"> • Explain the structure, functions and types of meristems in plants. • Explain the theories of differentiation of shoot and root apices. • Describe the anomalous secondary growth in dicot stems. 	<p>Unit IV. Plant Anatomy (8)</p> <p>4.1.1. Meristem</p> <p>4.1.1.1. Structure</p> <p>4.1.1.2. Function</p> <p>4.1.1.3. Classification</p> <p>4.1.2. Theories of differentiation of shoot and root apices (shoot apex-Apical Cell theory, Histogen theory and Tunica-Corpus theory; root apex-Histogen theory and Korper-Kappe theory).</p> <p>4.1.3. Anomalous secondary growth of dicot stem</p>

	<p>4.1.3.1. Anomalous position of cambium (<i>Bauhinia</i> sp)</p> <p>4.1.3.2. Abnormal behavior of normal cambium (<i>Bignonia</i> sp)</p> <p>4.1.3.3. Accessory cambium formation and its Activity (<i>Bougainvillaea</i>, <i>Boerhaavia</i>, <i>Mirabilis</i>)</p> <p>4.1.3.4. Extrastelar cambium (<i>Amaranthus</i>, <i>Achyranthes</i>, <i>Chenopodium</i>)</p>
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4. Instructional Techniques

The instructional techniques are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the specific units.

Units	General Instructional Techniques	Specific Instructional Techniques
1	• Lecture and discussion; Inquiry method, power point presentation, Internet search,	<ul style="list-style-type: none"> • Project work will be given to prepare a report on the economic importance of algae and fungi • Preparation of charts of life cycles of lower plants mentioned in the content.
2	• Lecture and discussion; Inquiry method, power point presentation	<ul style="list-style-type: none"> • Project work will be given to prepare the charts of angiospermic families. • Preparation of charts of life cycles Gymnospermous plants.
3	• Lecture and discussion; Inquiry method, Collaborative method, Internet search, power point presentation	<ul style="list-style-type: none"> • Project work will be given to prepare the group and individual report on economic importance of plants such as crop plants, medicinal plants, oil and timber yielding plants of Nepal.

Evaluation

5.1 Evaluation (Internal Assessment and External Examination)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25 Marks	40 Marks	65 Marks

Note: Students must pass separately in internal assessment and semester examination.

5.1.1. Internal Evaluation 25 Marks

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance and participation in learning activities	5 Marks
2. First assignment (written assignment)	5 Marks
3. Second assignment (report writing and presentation)	5 Marks
4. Third assignment/ Term exam	10 Marks
<hr/> Total	25 Marks

Note: First assignment/assessment might be a book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be a project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

5.1.2. External Evaluation (Final Examination) 40 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

1. Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
2. Subjective short questions (6 questions with 2 'OR 'questions x 5 marks)	30 Marks
<hr/> Total	40 Marks

6. Recommended books and Reference books

Recommended Books:

Pandey, B. P. (2007). *Economic Botany*. S. Chand & Company Ltd., New Delhi. **(For Unit III)**

Pandey, S. N. and A. Chadha (2008). *Plant Anatomy and Embryology*. Vikash Publishing House Pvt. Ltd., New Delhi. **(For Unit IV)**

Pandey, S. N. and P. S. Trivedi (2007). *A Text Book of Botany. Vol. I. (Virus, Fungi, Lichens, Plant Pathology, Algae)* (For Unit I). *Vol. II. (Bryophytes, Pteridophytes and Gymnosperms)*. Vikash Publishing House, New Delhi. **(For Units I and Unit II)**

Sharma, O. P. (2006). *Textbook of Algae*. Tata Mc. Graw Hill Publishing Company Ltd., New Delhi. **(For Unit I)**

Sharma, O. P. (2008). *Textbook of Fungi*. Tata Mc. Graw Hill Publishing Company Ltd., New Delhi. **(For Unit I)**

Sharma, O. P. (2002). *Gymnosperms*. Pragati Prakashan, Meerut. **(For Unit II)**

Sharma, O. P. (2009). *Plant Taxonomy*. Mc. Graw Hill Education Pvt. Ltd., New Delhi. **(For Unit II)**

Reference Books:

Alexopoulos, C. J., C. W. Mims and M. Blackwell (2007). *Introductory Mycology*. Wiley Student Edition,

Bhatnagar, S. P. and A. Moitra (2006). *Gymnosperms*. New Age International Publishers, New Delhi.

Bhatt, D.D. (1977). Natural History and Economic Botany of Nepal. Orient Longman Ltd., New Delhi.

DPR (2005). Medicinal Plants of Nepal. Department of Plant Resources, Ministry of Forests and Soil Conservation, Kathmandu.

Glime, J. (2007). Economic and Ethnic Uses of Bryophytes. *Flora North Am*, 27.

- Kayastha, B.P. (2002). *A Handbook of Trees of Nepal. Timber, Fodder, Fruit, Medicinal, Ornamental, Religious* (Eds. R. Joshi, S.M. Amatya, P. B. Thapa and B. Bhatta). Laligurans Pr. Press, Kathmandu.
- Lawrence, H. Lawrence, H. M. (1967). *Taxonomy of Vascular Plants*. Mc. Millons Company, New York.
- Maharjan, K.B. (2018). Economic Botany (Vol I & II). K.B.Maharjan, Kirtipur, Kathmandu.
- Parihar, N. S. (1973). *An Introduction to Embryophyta Vol. II. Pteridophytes*. Central Book Depot. Allahabad.
- Pandey, B. P. (2009). *Taxonomy of Angiosperms*. S. Chand & Company Ltd., New Delhi.
- Rajbhandary, S. (2016). EdsJha, P.K., Siwakoti, M. and Rajbhandary, S. *Fern and Fern allies of Nepal*. Central Department of Botany, Kirtipur
- Saxena, N. B. (2006). *Plant Taxonomy*. Pragati Prakasan, Meerut, India.
- Singh, V., P. C. Pande and D. K. Jain (2007). *A Text Book of Botany. Algae, Fungi, Bacteria, Virus, Microbiology, Plant Pathology, Bryophyte, Pteridophyte and Gymnosperm*. Rastogi Publication, Meerut, India.
- Vashishta, B. R. and A. Kumar (2010). *Botany for Degree Students. Part III. BRYOPHYTA*. S. Chand & Company Ltd., New Delhi.
- Vashistha, P. C. (1998). *Plant Anatomy*. S. Chand & Company Ltd.
- Vasishta, P. C. (2006). *Botany for Degree Students. PTERIDOPHYTA*. S. Chand & Company Ltd., New Delhi.

Bio. Ed. 515: Plant Systematics and Anatomy

Course No.	: Bio. Ed. 515 (P)	Nature of the course: Practical
Level	: M. Ed. in Biology	Credit hour: 1
Semester	: First	Teaching hours: 48*
Period per week: 3pds/day/week/gr * *(P)		

1. Course Introduction

This course includes practical works from Plant Systematics and Anatomy. The aim of this course is to provide knowledge and skills required for conducting practical classes at higher level of science education regarding morphology and life cycles of lower and higher plants as well as the anatomy of higher plants.

2. General Objectives

The general objectives of this course are to:

- provide advanced knowledge on morphology and life cycles of lower plants including algae, fungi, bryophytes and bryophytes and higher plants including Gymnosperms and Angiosperms.
- provide the students with the skills of preparing temporary and permanent slides of parts of lower plants.
- provide adequate knowledge on internal parts of higher plants.
- provide the students with the skills of preparing temporary and permanent slides of internal parts of higher plants.
- give knowledge and skills on the collection, preservation, identification of plants from the fields and submit the report.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Prepare the temporary slides of some available algae viz: <i>Chlamydomonas</i>, <i>Cladophora</i>, <i>Zygnema</i>, <i>Spirogyra</i>, <i>Ulothrix</i>, <i>Oedogonium</i>,	Unit I. Lower Plants (5 × 3 = 15) 1.1. Algae 1.1.1. Preparation of temporary slides of <i>Chlamydomonas</i> , <i>Cladophora</i> , <i>Zygnema</i> ,

<p><i>Hydrodictyon, Vaucheria, Nostoc, Oscillatoria</i> or any other available algae (at least 4 genera) also study their identification characters.</p> <ul style="list-style-type: none"> • Study the vegetative and reproductive parts of the above-mentioned algae or other available algae from their permanent slides • Prepare the temporary slides of the somatic and reproductive parts of <i>Albugo, Aspergillus, Penicillium, Alternaria, Agaricus</i> or any other available genera (at least 1 genus from each of Phycomycetes, Ascomycetes, Basidiomycetes and Deuteromycetes) • Study the characteristic features of somatic and reproductive parts of the following genera: <i>Saprolegnia, Phytophthora, Penicillium, Alternaria, Agaricus</i> (at least 2 genera) from their permanent slides. • Prepare and study the temporary and permanent slides of the external and internal structures of vegetative and reproductive parts of <i>Riccia, Marchantia, Pellia, Plagiochasma, Polytrichum</i> or any other available moss (at least 2 genera of Bryophytes). • Prepare the temporary and permanent 	<p><i>Spirogyra, Ulothrix, Oedogonium, Hydrodictyon, Vaucheria, Nostoc, Oscillatoria</i> and other available algae and study of their identifying characters.</p> <p>1.1.2. Study of the vegetative and reproductive parts of above-mentioned algae.</p> <h3>1.2. Fungi</h3> <p>1.2.1. Temporary slide preparation of Somatic and reproductive parts of following genera: <i>Albugo, Aspergillus, Penicillium, Alternaria, Agaricus</i></p> <p>1.2.2. Study the characteristic features of somatic and reproductive parts of <i>Saprolegnia, Phytophthora, Penicillium, Alternaria, Agaricus</i> from their permanent slides.</p> <h3>1.3. Bryophytes</h3> <p>1.3.1. Preparation of temporary and permanent slides and study of external and internal structures of <i>Riccia, Marchantia, Pellia, Plagiochasma, Polytrichum</i> or any other available moss.</p>
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slides of internal and external structures of vegetative and reproductive parts of <i>Selaginella</i> and <i>Pteridium</i> or <i>Dryopteris</i> (at least 2 genera)	1.4. Pteridophytes 1.4.1. Preparation of permanent slides of anatomical structures of <i>Selaginella</i> and <i>Pteridium</i> or <i>Dryopteris</i>
<ul style="list-style-type: none"> • Prepare the temporary and permanent slides of internal structures of leaves of <i>Pinus</i> and <i>Cedrus</i>. • Study the internal structures of stems of <i>Taxus</i> and <i>Cedrus</i> from permanent slides. • Describe the taxonomical characters of the following families in semitechnical terms with their floral formula and floral diagrams: Dicotyledons: Umbelliferae or Apiaceae, Polygonaceae, Euphorbiaceae, Monocotyledons: Gingiberaceae, Poaceae (Gramineae), 	Unit II. Higher Plants (5 × 3 = 15) <p>2.1.Gymnosperms 2.1.1. Internal structures of stems and leaves of <i>Pinus</i> and <i>Cedrus</i>.</p> <p>2.2.Angiosperms 2.2.1. Systematic study of following families with floral formula and floral diagrams:</p> <p>2.2.1.2. Dicotyledons: Umbelliferae or Apiaceae, Polygonaceae, ,Euphorbiaceae.</p> <p>2.2.1.3. Monocotyledons: Gingiberaceae, Poaceae (Gramineae),</p>
<ul style="list-style-type: none"> • Visit field and collect, preserve, identify and submit the plants and field report (Individual) 	Unit III. Field trip (2× 3 = 6) 3.1. Collection, preservation, identification and study of plants and submission of field trip report (Individual).

Group ‘ B’ : Plant Anatomy

Specific objectives	Contents

Unit III. Plant Anatomy (4× 3 = 12)	
<ul style="list-style-type: none"> • Prepare temporary and permanent slides of transverse sections of dicot stems with secondary growth. • Prepare temporary and permanent slides of transverse sections of dicot stem with anomalous secondary growth. 	<p>3.1. Secondary growth of dicot stem of any two available plants.</p> <p>3.2. Anomalous secondary growth of any two plants mentioned in the content course (<i>Bougainvillea</i> stem and <i>Bignonia</i> stem or any other available stem)</p>

4. Instructional Techniques

Units	General Instructional Techniques	Specific Instructional Techniques
1	<ul style="list-style-type: none"> • Lecture and discussion; Inquiry method, power point presentation, performing experiments, Interview, Record keeping, 	<ul style="list-style-type: none"> • Performing experiments, Slide preparation, group work, Chart preparation • Preparation of charts of life cycles of lower plants mentioned in the content.
2	<ul style="list-style-type: none"> • Lecture and discussion; Inquiry method, power point presentation 	<ul style="list-style-type: none"> • Performing experiments, Slide preparation, group work • Chart preparation of angiospermic families mentioned in the content. • Preparation of charts of life cycles Gymnospermous plants mentioned in the content
3	<ul style="list-style-type: none"> • Lecture and discussion; Inquiry method, Collaborative method, Internet search, power point presentation 	<ul style="list-style-type: none"> • Project work will be given to prepare the group and individual report on economic importance of plants such as cropplants , medicinal plants, oil and timber yielding plants of Nepal.

5. Evaluation **35 Marks**

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15 Marks	20 Marks	35 Marks

5.1 Internal Evaluation **15 Marks**

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5Marks
2.	Students' portfolios (Record book and books and article review etc.)	5Marks
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5Marks
	Total	15Marks

5.2 External Evaluation **20 Marks**

Marks distribution for practical external evaluation will be as following.

1.	Experiment / project work report and presentation / study reports	15Marks
2.	Viva-voce	5 Marks
	Total	20Marks

Note:

Students must pass both in internal as well as external assessment of practical examination

** Practical teaching hours is 3 times more than teaching hours of theory ($3 \times 16 = 48$ hours)*

***A group consists of 15 students and one teacher will be assigned for a group.*

****Construction of models, charts, teaching aids, develop concept map etc. Also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.*

6. Recommended and Reference Books for practical

Recommended Books:

Pandey, B. P. (2005). Modern Practical Botany Vol.1 and Vol II. S. Chand & Company Ltd., New Delhi.

Pandey, S. N. and A. Chadha (2008). *Plant Anatomy and Embryology*. Vikash Publishing House Pvt. Ltd., New Delhi. (For Unit IV).

Bio. Ed. 516: Animal Systematic and Anatomy

Course No.	: Bio. Ed. 516 (T)	Nature of the course: Theoretical
Level	: M. Ed. in Biology	Credit hours: 2
Semester	: First	Teaching hours: 32
Period per week: 2		

1. Course Introduction:

This course is designed for M.Ed. first semester students with a view to provide advanced knowledge on Systematics, Diversity and Life Cycle of lower and higher animals. It also provides the detailed knowledge on major phenomenon and characteristics of animals. Development is another sequential phenomenon occurring in all animals. It also includes anatomical development of higher animals.

2. General Objectives:

The general objectives of this course are to:

- familiarize the students with the systematic position, habit, habitat, structure, importance, and life cycle of some important animals.
- enhance the knowledge of the students to prevent and control parasites.
- provide the knowledge of the significance of some animals.

3. Specific Objectives and Contents

Specific Objectives	Contents (32)
<ul style="list-style-type: none">• Describe the life cycle, disease caused, control and prevention of Leishmania donovoni.	Unit I: Lower Animals 1.1. Non-Chordata (Invertebrates) 1.1.1 Life cycle, symptoms, control and prevention of Leishmania donovoni.
<ul style="list-style-type: none">• Explain the affinities and systematic position of Porifera.	1.1.2 Affinities and systematic position of Porifera.
<ul style="list-style-type: none">• Explain the meaning of polymorphism and various forms of zooids with different functions.	1.1.3 Polymorphism in Cnidaria.
<ul style="list-style-type: none">• Differentiate between male and female worms and detail study of	1.1.4 Life cycle and symptoms, control and prevention of Enterobius

their life cycle, mechanism of control and prevention.	vermicularis.
• Describe the structure and complete life cycle with different developmental stages.	1.1.5 Structure and life cycle of Nereis.
• Introduce the different types of mouthparts of insects with their different functioning mechanism.	1.1.6 Different types of mouth parts of different insects.
• Explain different parts found in the mouthpart of cockroach.	1.1.7 Detailed study of mouth parts of cockroach.
• Explain the meaning and mechanism of torsion with their effect.	1.1.8 Torsion in Mollusca.
• Elaborate functioning of mechanism of water vascular system with their purpose.	1.1.9 Water vascular system in Echinodermata.
• Describe the systematic position, habit, habitat and structure, life cycle including different developmental stages. • Describe the affinities of Ctenophora	Unit II Minor Phyla (4) 1.2.1 Hormiphora (structure and life cycle) 1.2.2 Affinities of Ctenophora.
• Explain major differences from non-chordates.	Unit III Higher animals 1.3.1 Chordata
• Describe the structure and complete life cycle with differential stages of Balanoglossus.	1.3.2 Balanoglossus (structure and life cycle)
• Explain skin, different types of scales, pigments found in Pisces.	1.3.3 Pisces (skin, scales and coloration).
• Introduce Adoptive radiation and describe adoptive radiations in	1.3.4 Adoptive radiation if Reptiles.

Reptiles.	
<ul style="list-style-type: none"> • Describe the flight and perching mechanism of birds. 	1.3.5 Aves (Flight and perching mechanism)
<ul style="list-style-type: none"> • Explain the systematic position, habit, habitat and life cycle of cow. • Describe socio-economic significance of cow (Domesticating purpose, role in society, cow as goddess, use and sacred for rituals and treatment of diseases etc.) 	1.3.6 Mammals (Life cycle and socio-economic significance of cow)
<ul style="list-style-type: none"> • Describe comparative development of vertebrates. • Explain mammalian integument and its derivatives. 	<p>Unit IV Anatomical Development of Vertebrate</p> <p>1.4.1 Comparative development fertilization, Morula and Blatula, Gastrulation, Organogenesis, factual membranes, Kinds of Placenta.</p> <p>1.4.2 Mammalian integument and its derivatives.</p>

4. Instructional Techniques

The instructional techniques are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the specific units.

4.1.General Instructional Techniques

- Lecture method
- Demonstration method
- Discussion method
- Inquiry method
- Project method
- Collaborative method
- Internet search

- Preparation of charts
- Book reviews

4.2. Specific Instructional Techniques

- Most of the units require project work, problem solving method and power point presentation.
- The teachers may assign the project work in different units.

5. Evaluation

5.1 Evaluation (Internal Assessment and External Examination)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25 Marks	40 Marks	65 Marks

Note: Students must pass separately in internal assessment and semester examination.

5.1.1 Internal Evaluation 25 Marks

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance and participation in learning activities	5 Marks
2. First assignment (written assignment)	5 Marks
3. Second assignment (report writing and presentation)	5 Marks
4. Third assignment/ Term exam	10 Marks
<hr/> Total	<hr/> 25 Marks

Note: First assignment/assessment might be a book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be a project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

5.1.2 External Evaluation (Final Examination) 40 Marks

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

1. Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
2. Subjective short questions (6 questions with 2 ‘OR ‘questions x 5 marks)	30 Marks
Total	40 Marks

6. Recommended Books and References

Jordan, E.L. and Verman, Dr. P.S. (2011). *Invertebrate Zoology*. S. Chand and Company Ltd., New Delhi (**For Unit I.1: Nonchordata**).

Kotpal R.L. (2006). *Minor Phyla*. Rastogi Publication (For Unit I.3: Minor Phyla).

Kotpal R.L. (2007). *Moderntext book of Zoology (Vertebrates)*. Rastogi Publication, Meerut 250002 (**For Unit I.2: Chordata**).

Kotpal, R.L. (1978). *Zoology Phylum Books (Protozoa to Echinodermata)*. Rastogi Publications (**For Unit I.2: Non-chordata**)

Reference Books:

Sandhu, G.S. and Harsha Bardhan Bhaskar (2005). *Textbook of Chordate, Set of 2 Vols.* Campus Books International.

Saxena, R.K. and Saxena, Sumitra (2008). *Comparative Anatomy of Vertebrates*. Published by Vinod Vasistha for Viva Books, New Delhi 110002.

Bio. Ed. 516: Animal Systematics and Anatomy

Course No.	: Bio. Ed. 516 (P)	Nature of the course: Practical
Level	: M. Ed. in Biology	Credit hour: 1
Semester	: First	Teaching hours: 48*
Period per week: 3pds/day/week/gr * *(P)		

1. Course Introduction:

This course is designed for M.Ed. first semester students to provide advanced knowledge and skills to do practical activities on **Systematics, Diversity and Anatomy of animals**. It includes practical activities and experiments on **Animal Systematics and Anatomy**

2. General Objectives

The general objectives of this course are to:

- develop the skills of making fixatives and stain.
- develop the skills in preparing the temporary and permanent slides of different animals included in the syllabus.
- develop the skill in identifying different important internal organs of different animals.
- enhance the knowledge on identifying different animals in the field.
- enable to prepare the reports on different field work.

3. Specific Objective and Contents

Specific Objectives	Contents (48)
• Prepare laboratory reagents (7)	Unit 1 Preparation of laboratory reagents 1.1 Prepare fixatives of available chemicals. 1.2 Prepare alcoholic grades. 1.3 Prepare stains as needed.
• Study the museum specimens of non-chordates included in the content	Unit II Invertebrates (Lower animals) (18) 4.1.1. Museum specimens of invertebrates 4.1.2. Permanent slides of invertebrates

<ul style="list-style-type: none"> • Prepare the permanent slides of important parts of non-chordates included in the content course. • Prepare the permanent slides of larvae, mouth parts, wings, legs of available insect. 	<p>(setae of earthworm) and parapodia of Neleis.</p> <p>4.1.3. Preparation of permanent slides of larvae of any insect, mouth parts, of any available insect.</p>
<ul style="list-style-type: none"> • Study of the museum specimens of lower chordates to higher chordates included in the content course. • Study and prepare the permanent slides of scales of vertebrates. • Study of external organs of fish. • Dissect a fish to expose its internal organs of fish. 	<p>Unit III Vertebrates (Higher animals) (21)</p> <p>5.1. Museum specimens of lower chordates to higher chordates.</p> <p>5.2. Preparation of permanent slides of scale of fish.</p> <p>5.3. Study external and internal organs of fishes.</p> <p>5.4. Bones of mammals.</p>
<ul style="list-style-type: none"> • Visit the field and collect, preserve, identify the animals collected and submit the field report. 	<p>Field Trip (6)</p> <p>Collection, preservation, identification, classification of at least twenty animals of any particular area (with their salient features and color photographs) and submission of the field report.</p>

Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.

4. Instructional Techniques

- Performing experiments
- Interview
- Record keeping
- Project work
- Report writing

5. Evaluation **35 Marks**

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15 Marks	20 Marks	35 Marks

5.1 Internal Evaluation **15 Marks**

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5Marks
2.	Students' portfolios (Record book and books and articles review etc.)	5Marks
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5Marks
	Total	15Marks

5.2 External Evaluation **20 Marks**

Marks distribution for practical external evaluation will be as following.

1.	Experiment / project work report and presentation / study reports	15Marks
2.	Viva-voce	5 Marks
	Total	20Marks

Note: Students must pass both in internal as well as external assessment of practical examination

* Practical teaching hours is 3 times more than teaching hours of theory ($3 \times 16 = 48$ hours)

**A group consists of 15 students and one teacher will be assigned for a group.

***Construction of models, charts, teaching aids, develop concept map etc. Also, the collection of materials / designing science lab, preparation of lesson

plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.

Recommended books and Reference

Banerjee, V and Bharat, B (1994). A textbook of Vertebrate practical zoology,

Thakurinari road, Patna

Verma, P.S (2010). A manual of practical zoology, non-chordates and chordates, S.

Chand and company. Ltd. New Delhi.

Lal. S. S (2008). A practical zoology, Rastogi publication, Meerut

Bio. Ed. 517: Cytogenetics and Breeding

Course No.	: Bio. Ed. 517 (T)	Nature of the course: Theoretical
Level	: M. Ed. in Biology	Credit hour: 2
Semester	: First	Teaching hours: 32
		Period per week: 2

1. Course Introduction:

This course is designed for the students of Biology Education at M.Ed. level. It consists of four units on Cell Biology, Genetics, Animal and Plant Breeding. The course deals with the micro and macro constituents and functions of cells, cell organelles and important concepts on genetics. It also deals with the methods of plant and animal breeding and their uses in the production of improved varieties of crops and animals.

2. General Objectives

The general objectives of this course are to:

- provide the detailed knowledge on the structure and functions of living cell and the cytoplasmic organelles.
- acquaint the students with the principles and concepts of genetics and breeding in plants and animals.
- familiarize the students with the development of new varieties of plants and animals.
- impart adequate knowledge on the cellular structure as well as on various stages of cell division.
- Help students acquire in depth knowledge of breeding in plants and animals.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Explain cell theory.• Discuss the structural differences between prokaryotic and eukaryotic cells.• Explain the structure and	<p>Unit I. Cytogenetics (12)</p> <p>1.1. Cell Biology</p> <p>1.1.1. Introduction to Cell Theory.</p>

<p>functions of cytoplasmic organelles – plasma membrane, endoplasmic reticulum, plastid, ribosomes, mitochondria, lysosome.</p> <ul style="list-style-type: none"> • Explain the structure, functions and role of nucleus and nucleolus. • Describe the physical nature of chromosome. • Explain the morphological nature of specialized types of chromosomes namely Polytene and Lampbrush chromosome. • Discuss on the general features of karyotype and its significance. 	<p>1.1.2. Prokaryotic and Eukaryotic cell</p> <p>1.1.3. Anatomy of cell</p> <p>1. 1.3.1. Plasma membrane</p> <p>1.1.3.2. Endoplasmic reticulum</p> <p>1.1.3.3 Plastids (introduction, morphology and Ultrastructure of chloroplast)</p> <p>1.1.3.4. Ribosome</p> <p>1.1.3.5. Mitochondria</p> <p>1.1. 3.6. Lysosome</p> <p>1.1.3.7. Nucleus (Introduction, occurrence, morphology and function)</p> <p>1.1.3.7.1. Nuclear membrane</p> <p>1.1.3.7.2. Nucleoplasm</p> <p>1.1.3.7.3 Chromatin fiber</p> <p>1.1.3.7.4. Nucleolus</p> <p>1.1.3.7.5. Chromosome (Physical nature)</p> <p>1.1.3.7.5.1. Size, Shape and Number</p> <p>1.1.3.7.5.2. Morphology</p> <p>1.1.3.7.5.3. Special types of chromosomes (Polytene and Lampbrush chromosomes)</p> <p>1.1.3.7.5.3.4. Karyotype (features and significance)</p>
<ul style="list-style-type: none"> • Explain the scope and significance of Genetics. • Explain some important modifications of Mendelian laws. • Explain the meaning and causes of mutation. 	<p>1.2. Genetics (12)</p> <p>1.2.1. Scope and significance of Genetics</p> <p>1.2.2. Some important modifications of Mendelian Laws</p> <p>1.2.2.1. Genetic interactions (Interactions between</p>

<ul style="list-style-type: none"> Describe different types of mutation on the basis of origin: spontaneous and induced mutations with their causes and nature. Describe different types of mutations on the basis of change in chromosome morphology and number: chromosome mutation, Gene mutation and Polyploidy with their causes and nature. 	<p>Dominant factors, Complementary factors, Supplementary factors, Epistasis, Inhibitory Factor, Duplicate factor, Multiple factors, Lethal factor, Incomplete dominance)</p> <p>1.2.2.2. Pleotropic or many fold effects of a gene</p> <p>1.2.2.3. Penetrance</p> <p>1.2.2.4. Expressivity</p> <p>1.2.2.5. Significance of gene interactions</p> <p>1.2.3. Mutation</p> <p>1.2.3.1. Introduction</p> <p>1.2.3.2. Types</p> <p>1.2.3.2.1. On the basis of origin (Spontaneous and Induced)</p> <p>1.2.3.2.2. On the basis of chromosome number And morphology (Chromosome mutation, Gene mutation and Polyploidy)</p> <p>1.2.3.2.2.1. Chromosome mutation</p> <p>1.2.3.2.2.1.1. Types (Deficiency and deletion, Duplication, Translocation and Inversion)</p> <p>1.2.3.2.2.2. Gene mutation</p> <p>1.2.3.2.2.3. Polyploidy</p> <p>1.2.3.2.2.3.1. Euploidy</p> <p>1.2.3.2.2.3.2. Aneuploidy</p>
<ul style="list-style-type: none"> Explain the determination of sex and the role of different types of chromosomes present in the gamete. Explain different theories on the mechanism of sex determination. 	<p>1.2.4. Sex determination (2)</p> <p>1.2.4.1. Introduction</p> <p>1.2.4.2. Different theories to explain mechanism of Sex determination</p> <p>1.2.4.2.1. Chromosome theory</p>

	<p>1.2.4.2.2. Genic balance theory</p> <p>1.2.4.2.3. Haplo diplo mechanism</p>
<ul style="list-style-type: none"> • Describe different methods of plant improvement. • List improved and recommended varieties of paddy, wheat, maize and potato for different parts of Nepal. 	<p>Unit II. Plant Breeding (3)</p> <p>2.1. Introduction</p> <p>2.1.1. Different methods of plant improvement (Plant Introduction, Selection, Hybridization, Mutation Breeding)</p> <p>2.1.2. Improved and recommended varieties of paddy, Wheat, maize and potato for different altitudinal zones of Nepal</p>
<ul style="list-style-type: none"> • Describe the techniques of animal breeding systems. • Describe the sustainable animal breeding. • Describe the socio-economic aspects of animal breeding. • Explain eugenics and euthenics. 	<p>Unit: III. Animal Breeding (3)</p> <p>3..1 Animal breeding systems</p> <p>3.2. Sustainable animal breeding</p> <p>3.3. Socio-economic aspects of animal breeding (Test tube babies, embryo transplantation, surrogate mother, and sex change due to hormone intake).</p> <p>3.4 Eugenics and Euthenics.</p>

Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.

4. Instructional Techniques

The instructional techniques are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the specific units.

4.1. Instructional Techniques

Units		General Instructional Techniques	Specific Instructional Techniques
Unit I. Cytogenetics	1.1. Cell Biology	Lecture and discussion; Demonstration, power-point presentation; internet search	Group work, Chart Preparation of prokaryotic and eukaryotic cells, chloroplast, ribosome, mitochondria, chromosome and karyotype.
	1.2. Genetics	Lecture and discussion; power-point presentation; internet search	Book review, group work, Chart Preparation of modifications of Mendel's laws.
	1.2.3. Mutation	Lecture and discussion; power-point presentation; internet search	Group work, Chart Preparation for different types of mutation.
	1.2.4. Sex determination	Lecture and discussion; power-point presentation; Collaborative method, internet search	Group work, Chart Preparation for different mechanisms of sex determination.
Unit II. Plant Breeding		Lecture and discussion; Demonstration, power-point presentation; internet search	Group work, Brochure collection, Project work for different varieties of crops of Nepal and submit the report. To visit agricultural research centers for studying plant breeding and submit the group and individual report.
Unit: III. Animal Breeding		Lecture and discussion methods; Demonstration, Group work	Field study, Brochure collection, Information collection, Group and individual report preparation on animal breeding.

5. Evaluation

5.1 Evaluation (Internal Assessment and External Examination)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25 Marks	40 Marks	65 Marks

Note: Students must pass separately in internal assessment and semester examination.

5.1.1. Internal Evaluation 25 Marks

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance and participation in learning activities	5 Marks
2. First assignment (written assignment)	5 Marks
3. Second assignment (report writing and presentation)	5 Marks
4. Third assignment/ Term exam	10 Marks
Total	25 Marks

Note: First assignment/assessment might be a book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be a project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

5.1.2. External Evaluation (Final Examination) 40 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

1. Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
2. Subjective short questions (6 questions with 2 'OR 'questions x 5 marks)	30 Marks
Total	40 Marks

Recommended books and References

Recommended Books:

Banerjee, G C (1998). *A Textbook of Animal Husbandry*. Eighth edition, OXFORD & IBH Publishing CO. PVT. LTD, India (**For Unit - III**).

Dalton, D C (1985). *An Introduction to Practical Animal Breeding*. Second Edition, English Language Book Society, Collins Professional and Technical Books, London (**For Unit - III**).

Kanakaraj,P.(2007).*A Text Book of Animal Genetics*,International Book Distributing Company, Second Updated edition, viii, 514 p, tables, figs, ISBN : 8181892046, (**For Unit - I**).

Roberties, E. P. P. De and E. M. F. De Roberties(2001). *Cell and Molecular Biology*. New Delhi. Waverly P. Ltd. (**For Unit I**).

Shukla, R. S. and P. S. Chandel (2007). *Cytogenetics, Evolution, Biostatistics and Plant Breeding*. S. Chand & Company Ltd. (**For Units - I, II and III**).

Reference Books:

Bourdon, R. M. (2000). *Understanding Animal Breeding*. Prentice-Hall, Inc. Upper Saddle

Code-EFABAR. *Code of Good Practice for Farm Animal Breeding and Reproduction* (FOOD-CT-2003-506506). www.code-efabar.org

Crew, F.A. (2006). *Animal Genetics - The Science of Animal Breeding*, Home Farm Books; Edition (Jan.,2006) Freeman and Co. New York, U.S.A.

Gupta, V. N. G. P. Rao and M. Singh (2003). *Text Book of Botany. Part 2. Ecology, Physiology, Cytology, Cytogenetics, Embryology and Anatomy*. Students' Friends, Allahabad, India.

McGregor, H.C. (1993). *An Introduction to Animal Cytogenetics*. Chapman and Hall, London.

Nicholas, F. W. (1996). *Introduction to Veterinary Genetics*. Clarendon Press, Oxford, U. K.River, New Jersey.

Sinha, U. and SunitaSinha (2005). *Cytogenetics, Plant Breeding and Evolution*.
Vikash Publishing House Pvt. Ltd., New Delhi.

Strickberger M.R. (2010). *Genetics*. PHI Learning Pvt. Ltd., New Delhi.

Van Vleck, L.D, Pollak and E.A.B. Oltenace.(1987). *Genetics for Animal Sciences*.W. H.

Bio. Ed. 517: Cytogenetics and Breeding

Course No.	: Bio. Ed. 517 (P)	Nature of the course: Practical
Level	: M. Ed. in Biology	Credit hour: 1
Semester	: First	Teaching hours: 48*
Period per week: 3pds/day/week/gr * *(P)		

1. Course Introduction:

This part of the course includes the practical activities and experiments on Cytogenetics and Breeding. Practical include field studies, laboratory exercises (analysis), and creative activities. This course includes practical works from **Cytogenetics and Breeding**. This course is expected to develop knowledge and skills for conducting Bio-practical classes at Higher secondary School and Bachelor of Science Education at the campus level in Cell Biology, Genetics and breeding in plants and animals.

2. General Objectives

The general objective of this course are to:

- acquaint the students with the real -field based knowledge of ecosystem and community
- provide knowledge and skills on cell biology and Breeding
- develop skills to prepare temporary and permanent slides of different stages of mitosis and meiosis following cytological micro-techniques.
- explore various genetic traits of human beings
- engage students in field visit to any agricultural and horticultural farm and submit the report on plant and animal breeding works.

3. Specific objectives and Contents:

Specific objectives	Contents
<ul style="list-style-type: none"> • Prepare the temporary and permanent slides of different stages of mitosis and meiosis following cytological micro-techniques such as pretreatment, fixation, staining, squashing, dehydration, mounting. • Prepare the temporary and permanent slides and identify different stages of mitotic cell divisions in <i>Allium cepa</i> or <i>Vicia faba</i>. • Identify different stages of mitotic cell divisions. 	<p>Unit I. Cell Biology (39)</p> <p>Cytological micro-techniques</p> <p>1.1.1. Root tip collection 1.1.2. Pre-treatment 1.1.3. Fixation 1.1.4. Staining 1.1.5. Squashing 1.1.6. Dehydration 1.1.7. Mounting</p> <p>1.2. Preparation of temporary and permanent slides</p> <p>1.2.1. Different stages of mitotic cell division in <i>Allium cepa</i> or <i>Vicia faba</i> 1.2.2. Study of cytological slides of different stages of Mitosis.</p>
<ul style="list-style-type: none"> • Demonstrate nucleus in human's buccal epithelium. 	1.2.3. Human's buccal epithelium
<ul style="list-style-type: none"> • Identify different stages of meiotic cell divisions. 	1.2.4. Study of cytological slides of different stages of Meiosis.
<ul style="list-style-type: none"> • Identify different parts of Lampbrush chromosome. 	1.2.5. Study of Lampbrush chromosome
<ul style="list-style-type: none"> • Study various genetic traits of human beings. 	1.2.6. Study of human genetic traits (ear lobe, color of eye, rolling of tongue, texture of hair or straight or curly hair)
<ul style="list-style-type: none"> • Prepare the temporary and permanent slides and study different stages meiotic cell division in the developing anther of any available plant 	1.2.7. Different stages of Meiotic cell division in the developing anther of any available plant.
<ul style="list-style-type: none"> • Prepare the charts of cells, cell organelles and cell division. 	Preparation of the charts of prokaryotic and eukaryotic cells, cell organelles and mitotic and meiotic cell divisions (Project Works)

<ul style="list-style-type: none"> • Visit any agricultural and horticultural farm and prepare the report on the plant and animal breeding works. 	<p>Unit II. Breeding (9)</p> <p>2.1. Field visit and submission of field report about different techniques used in plant and animal breeding farms and present the report.</p>
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4. Instructional Techniques

Units	General Instructional Techniques	Specific Instructional Techniques
I	Lecture and discussion; power-point presentation, performing experiments; interview; record keeping	Performing experiments, Slide Preparation record keeping; group work, Chart Preparation
II	Lecture and discussion;	Field study, Brochure collection, Information collection, Internet search, Group and individual report preparation;

5. Evaluation 35 Marks

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15 Marks	20 Marks	35 Marks

5.1 Internal Evaluation 15 Marks

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5Marks
2.	Students' portfolios (Record book and Books and article review etc.)	5Marks
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5Marks
	Total	15Marks

5.2 External Evaluation

20 Marks

Marks distribution for practical external evaluation will be as following.

1.	Experiment / project work report and presentation / study reports	15Marks
2.	Viva-voce	5 Marks
	Total	20Marks

Note: Students must pass both in internal as well as external assessment of practical examination

* Practical teaching hours is 3 times more than teaching hours of theory ($3 \times 16 = 48$ hours)

**A group consists of 15 students and one teacher will be assigned for a group.

***Construction of models, charts, teaching aids, develop concept map etc. Also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.

6. Recommended and Reference Books for Practical

Recommended Books:

Pandey, B. P. (2005). *Modern Practical Botany*, Vol. I and Vol. II. S. Chand & Company Ltd., New Delhi.

Santra, S.C., T. P. Chatterjee and A. P. Das ((1999). *College Botany Practical*. Vol.I. New Central Book Agency (P) Ltd., Calcutta, India.

Reference Books:

Ranjitkar, H. D. (2019). *Botany. A Practical Handbook*. A. K. Ranjitkar, Kalanki, Kathmandu

Sharma, A. K. and A. Sharma (1990). *Chromosome Techniques. Theory and Practice*. Butterwort and Co. Ltd.

Swaroop, H., Pathak, S.C. and Arora, S. (1981). *Laboratory techniques in modern biology* Kalyani publishers, New Delhi. India.

Bio. Ed. 518: Environmental Biology and Environmental Education

Course No.	: Bio. Ed. 518 (T)	Nature of the course: Theoretical
Level	: M. Ed. in Biology	Credit hour: 2
Semester	: First	Teaching hours: 32
		Period per week: 2

1. Course Introduction:

This course is designed to acquaint the students with the advanced knowledge and skills of “**Environmental Biology and Environmental Education**”. It deals with relationships among all living organisms to one another and their relationships to the physical environment. The course also deals with the current environmental problems and issues on global and national context and aims to give knowledge and skills to manage them. At the same time, it tries to address how certain human activities impact our environment and focuses on how we can change our behaviors to find the ways and means of reducing negative impacts.

2. General Objectives:

The general objectives of this course are to:

- advance the knowledge of students on Environmental Biology
- acquaint the students with the ecosystem structures and functions
- enhance the knowledge on current global and national environmental issues particularly air and water pollution
- enable the students to aware of natural disasters and provide the knowledge for their management
- acquaint the students with the applications of biotechnology in environmental sectors
- provide knowledge about Environmental Education in national and global context
- acquaint the students with the curricula of environmental education of different universities of Nepal
- make students familiar with the government policy, plan and program of environmental education

3. Specific Objectives and Contents

Specific objectives	Contents (32 hrs.)
<ul style="list-style-type: none"> • Introduce the Environmental Biology and its historical development • Discuss the components of Environmental Biology • Show the relationship between Biology and Environment • Explain brief introduction of Environmental Ethics 	<p>Group A</p> <p>Unit I. Environmental Biology (2 hrs.)</p> <p>1.1 Introduction 1.2 Historical development of Environmental Biology 1.3 Components of Environmental Biology 1.4 Inter-relationship between biology and environment 1.5 Need of Environmental Biology and Environmental Ethics</p>
<ul style="list-style-type: none"> • Introduce the concept of ecosystems and explain ecosystem approaches in environmental management • Discuss the types of ecosystems and their developmental history • Discuss food chain, food web in ecosystem • Define community ecology and deal with its characteristics • Explain ecological succession and their types (Autotrophic, Heterotrophic, Autogenic and Allogenic) • Discuss general process of succession (migration, ecesis, colonization, stabilization and climax community) • Explain briefly climax concept 	<p>Unit II. Ecosystem Approach (4 hrs)</p> <p>2.1 Introduction, types and developmental history and approaches of ecosystem 2.2 Structure and functions of ecosystems 2.2.1 Food chain 2.2.2 Food web 2.2.3 Trophic structure 2.2.4 Ecological pyramids 2.2.5 Bio-accumulation and bio-magnification 2.3. Community ecology and its characteristics 2.4. Ecological succession 2.4.1 Introduction & their types 2.4.2 General process of succession 2.4.5 Climax concept 2.4.6 Features of climax community</p>

and features of climax community	
<ul style="list-style-type: none"> • Give brief introduction of air pollution • Explain the types and sources of indoor and outdoor air pollutants • Explain the effects of air pollutants in animals, vegetation • Explain the prevention and controlling measures of Air pollution • Give brief introduction of water pollution. • Explain dissolved oxygen (DO), chemical oxygen demand (COD) and biological oxygen demand (BOD). • Explain causes and effects of eutrophication. • Explain the effects water pollutants on environment, plants and animals. • Explain the controlling measures of water pollution. 	<p>Unit III. Pollution (4 hrs)</p> <p>3.1 Air Pollution</p> <p>3.1.1 Introduction</p> <p>3.1.2 Types and sources of indoor and outdoor air pollutants</p> <p>3.1.3 Effects of air pollutants in animals and vegetation</p> <p>3.1.4 Effects of air pollutants on human health</p> <p>3.1.5 Prevention and controlling measures of air pollution</p> <p>3.2 Water Pollution</p> <p>3.2.1 Introduction</p> <p>3.2.2 Dissolved Oxygen (DO)</p> <p>3.2.3 Chemical oxygen demand (COD)</p> <p>3.2.4 Biological oxygen demand (BOD)</p> <p>3.2.5 Eutrophication</p> <p>3.2.6 Effects of water pollution (plants, animals and human health)</p> <p>3.2.7 Prevention and control measures of water pollution</p>
<ul style="list-style-type: none"> • Give introduction of climate change • Explain Natural and Anthropogenic cause of climate change • Discuss climate change impact 	<p>Unit IV. Current Environmental Issues (6 hrs.)</p> <p>4.1 Global warming and greenhouse gases</p> <p>4.2 Climate change</p> <p>4.2.1 Background, Sources of greenhouse gases and causes of climate change</p>

<p>on vegetation and animals of Nepal with relevant case study</p> <ul style="list-style-type: none"> • Suggest mitigation measures • Explain global warming • List the greenhouse gases • Explain acid rain • Explain ozone layer depletion • Explain sources, hazards, disposal problems and management of solid waste with relevant case 	<p>4.2 Climate change in Nepalese perspectives 4.3 Impacts of climate change, adaption and mitigations 4.4 Case studies on climate change 4.5 Acid rain 4.6 Ozone layer depletion 4.7 Solid waste 4.7.1 Sources 4.7.2 Disposal problems and their management 4.7.3 Case studies</p>
<ul style="list-style-type: none"> • Define natural disaster • Explain briefly the Past major disasters in Nepal (Earthquake, Flood and Landslide, fire, epidemic, Glacier Lake outburst flood) with relevant case study from Nepal • Review briefly the disaster management in Nepal • List the major Organizations involved and their role in disaster management • Explain the scope and management measures in Nepal • Explain the major international disaster scenario including Tsunami, Katrina and El Nino 	<p>Unit V. Disaster Management (5 hrs.)</p> <p>5.1 Introduction to natural disaster 5.2 Major Disasters in Nepal (Past events) 5.2.1 Earthquake 5.2.2 Flood and Landslide 5.2.3 Fire 5.2.4 Epidemics 5.2.5 Glacier Lake outburst flood 5.3 Case studies of major disasters in Nepal 5.4 Overview of disaster management in Nepal 5.5 Major Organizations involved and their role in disaster management 5.6 Scope and management measures in Nepal 5.7 International disaster scenario 5.7.1 Tsunami 5.7.2 Katrina 5.7.3 El Nino</p>
	<p>Group B.</p>

<ul style="list-style-type: none"> • Explain the historical perspectives of Environmental Education, its educational movements in Nepal. • Study the development of appropriate approaches in Environmental Education in Nepal regarding school/Higher Secondary level curricula. • Study approaches in development of EE and its impact on environment protection. • Discuss the international efforts on Environmental protection focusing on Tbilsisi/Stockholm/Rio de Janeiro Conferences. 	<p>Unit I. Perspectives of Environment and Education (4 hrs)</p> <p>1.1. Environment and Education in Global context</p> <p>1.2 Environment and Educational movements in Nepalese context</p> <p>1.3 Environmental Education and its development in Nepal regarding</p> <p>1.3.1 Primary school curriculum</p> <p>1.3.2 Secondary school curriculum</p> <p>1.3.3 Higher secondary level curriculum</p> <p>1.4 Approaches in development of EE and its impact on environment protection</p> <p>1.5 International efforts on Environmental protection,</p> <p>Tbilisi /Stockholm / Rio de Janeiro Conference</p>
<ul style="list-style-type: none"> • Explain present status of Environmental Education in higher education in Nepal. • Analyze the Environmental components in education curricula of the universities of Nepal. • Explain the present status of Environmental Education in higher education in Nepal. • Analyze the Environmental components in education curricula at universities of Nepal. 	<p>Unit II. Present Strategy of EE at Higher Education in Nepal/ SAARC (3 hrs)</p> <p>2.1 Country wise Present status of EE in higher Education of SAARC region</p> <p>2.2 Environmental components in education curricula at Universities of Nepal (Bachelor and Master level)</p> <p>2.2.1 Tribhuvan University</p> <p>2.2.2 Kathmandu University</p> <p>2.2.3 Pokhara University</p> <p>2.2.4 Far-Western University</p>
<ul style="list-style-type: none"> • Study plan strategies for major activities of EE • Develop knowledge about government policy, plan and 	<p>Unit III. Government Policy, Plan and Program with regards to Environmental Education in Nepal (4 hrs)</p> <p>3.1 Environmental education in legal framework</p>

<p>program regarding Environmental Education.</p> <ul style="list-style-type: none"> • Discuss environmental impact assessment, environmental auditing program and management • Give the concept of EIA • Discuss the processes of EIA • Explain the concept of EMS and auditing program in Nepal 	<p>3.2 Environmental policy 3.3 Environmental Acts 3.4 Environmental Regulation 3.5 Environmental Impact Assessment (EIA) 3.5.1 Concept and processes of EIA 3.5.2 Concept of Environmental management system (EMS) and auditing program in Nepal</p>
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4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Instructional Techniques

S.N.	Units	Name of Unit	Common Methods	Specific methods	Remarks
Group A					
1.	I	Environmental Biology	Lecture and discussion; power-point presentation	Demonstration method; internet search	
2.	II	Ecosystem Approach	Lecture and discussion; Power-point presentation	Demonstration method; Individual laboratory work; Field work	

3.	III	Pollution	Lecture and discussion; Power-point presentation	Demonstration method; Collaborative method Project work Individual laboratory work; Field work; Problem solving and reports	
4.	IV	Current Environmental Issues	Lecture and discussion	Demonstration method; Project work; Field work; Case studies; Problem solving and reports	
5.	V	Disaster Management	Lecture and discussion; power-point presentation	Demonstration method; Collaborative method; Project work; Group work; Field work; Case studies; Problem solving and reports	

Group B					
6.	I	Perspectives of Environment and Education	Lecture and discussion; power-point presentation	Preparation of charts, presentations	
7.	II	Present Strategy of EE at Higher Education in Nepal/ SAARC	Lecture and discussion; power-point presentation	Project work; Internet search; preparation of charts, presentations,	
8.	III	Government Policy, Plan and Program with regards to Environmental Education in Nepal	Lecture and discussion; Power-point presentation	Internet search; preparation of charts, presentations	

5. Evaluation

5.1 Evaluation (Internal Assessment and External Examination)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25 Marks	40 Marks	65 Marks

Note: Students must pass separately in internal assessment and semester examination.

5.1.1. Internal Evaluation 25 Marks

Internal evaluation will be conducted by course teacher based on following activities:

- | | |
|--|---------|
| 1. Attendance and participation in learning activities | 5 Marks |
|--|---------|

2. First assignment (written assignment)	5 Marks
3. Second assignment (report writing and presentation)	5 Marks
4. Third assignment/ Term exam	10 Marks
Total	25 Marks

Note: First assignment/assessment might be a book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be a project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

5.1.1 External Evaluation (Final Examination) 40 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

3. Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
4. Subjective short questions (6 questions with 2 ‘OR ‘questions x 5 marks)	30 Marks
Total	40 Marks

6. Recommended books and References

- ADB and ICIMOD, 2006. *Environmental Assessment of Nepal: Emerging Issues and Challenges*. ADB and ICIMOD, Kathmandu (Group **B- For Units III, IV**)
- Agrawal V.K. & Verma P.S. (1996) “*Environmental Biology*” S Chandra & Company Pvt. Ltd., New Delhi. (**Group A – For Unit I**)
- Asthana,D.K. & M. Asthana(2006). *A Text Book of Environmental Studies*.S. Chand.Comp Ltd., India. (Group **A- For Units III, IV**)
- Chattergie, A. K (2007). *Introduction to Environmental Biotechnology*, Prentice Hall of India, pvt.Ltd, New Delhi (**Group A – For Unit II**)
- Cunningham, W.P & Cunningham, M.A. (2004). *Principles of Environmental Science: Inquiry and Applications*, Second Edition. Boston: Mc Grow Hill. (**Group A- For Units II, V VII**)
- De, A.K. (2008). *Environmental Chemistry*. New Delhi: New Age International Publishers, India (**Group A - For Unit II**)

- Dhameja, Suresh, K (2000). *Environmental Engineering and Management*, S.K. Kataria and sons, India (**Group A – For Unit IV**)
- GoN, (2008). *National Strategy for Disaster Risk Management*. Government of Nepal, Kathmandu (**Group B – For Unit VI**)
- Gupta, Debabrata. D (2008). *Environmental Awareness and Education*, AGROBIOS, India (**Group A- For Unit IV**)
- HMG/N (1993), *Working with NGOs-IUCN Nepal* (**Group B – For Unit I**)
<http://www.google.com>
- Hyogo Framework for Action, 2005. *Building the Resilience of Nations and Communities to Disasters* World Conference on Disaster Reduction (A/CONF.206/6, United Nations) (**Group A- For Unit VI**)
- IUCN (2000) “*Environmental Education Source Book*” Kathmandu, Nepal. (**Group A –For Unit I, Group B – For Unit I**)
- Kaushik, C.P. and Kaushik, M., 2006. *Perspectives in Environmental Studies*. New Age International Pvt. Ltd. (**Group A- For Unit I, Group B- For Unit IV**)
- Khadka, R.B., et al (2013). *Environmental Impact Assessment, Processes, Methods, Practices in South Asia (Bangladesh, Bhutan, India and Nepal)*, School of Environmental Science and Management (SchEMS) and Institute of Environment and Development (IED), Kathmandu, Nepal (**Group B – For Unit III**)
- Krishnamacharyulu, V. and Reddy, G.S (2009). *Environmental Education*, Neelkamal Publications, India (**Group B – For Units I, V**)
- Lekhak, H.D. and Lekhak, B. (2009). *Natural Resources Conservation and Sustainable Development in Nepal*. Kshitiz Publications, Kathmandu (**Group A – Unit VII**)
- Miller Jr., J.T. (1995). *Living in the Environment*. Wadsworth Publishing Company, Belmont, California. (**Group A- For All Units**)
- MoE, (2010). *National Adaptation Program of Action (NAPA) to Climate Change*. Ministry of Environment, Kathmandu (**Group A- For Unit IV**)
- MoE, (2011). *Status of Climate Change of Nepal*. Ministry of Environment, GoN, Kathmandu (**Group A – For Unit IV**)
- Odum, E. P. (1996). *Fundamentals of Ecology*. Natraj Publishing, Dehradun, India
- Pandit C.N. (2001) “*Fundamentals of Environmental Education*” Second Edition, K.P. Pustak Bhandar, Dillibazar, Kathmandu. (**Group B – For Unit I**)

R. C. Dubey (1995). "A Textbook of Biotechnology" S Chand & Company, India.

(Group A – For Unit VI)

Sharma, P.D (1994). *Ecology and Environment*, RASTOGI Publication **(Group A – For Unit I)**

Trivedi, P.D. and G. Raj (1991). *Environmental Biology*. Akashdeep Publishing House, New Delhi, India **(Group A- For Unit II)**

Trivedi, R. N (1997). *A text book of environmental science*, Anmol publication **(Group A – For Unit V)**

References

Anonymous (1991). *Caring for the Earth (1991): A Strategy for Sustainable development/* IUCN/UNEP/ WWF, Switzerland.

Bandhu, D., H. Singh and AK Maitra (Ed. 1989). *Environmental Education and Sustainable Development* IES, New Delhi

Butkos, R.A. & Kolmes, S.A. (2011). *Environmental Science and Theology in Dialogue*

Das, P.C. (2011). *Environmental Biology*. AITBS Publishers, Delhi, India.

HMG/N (1993), *The IUCN Environmental Law Centre*, the convention on Biological Diversity, An Implementary Guide.

HMNG/N, Environmental Protection Council (1993). *Nepal Environment Policy and Action Plan*, Kath

IUCN (1993). *Environmental Education in Nepal: A Review*

IUCN/HMG (1998). *Environmental Education Source Book for Bachelor of Education Programme*. Faculty of Education, TU, IUCN.

Joshi, A.R., Shrestha, S.L. and Joshi, K. (2003). *Environmental Management and Sustainable Development at the Crossroad*. Ankush, Kathmandu

Kannan, K. (1997). *Fundamentals of Environmental Pollution*. S. Chand and Company Ltd., New Delhi, India.

Khadka, R., B. D. Clayton and A. Mathema (2012) *Safe guarding the Future: Securing Shangrila, Integrating Environment And Development In Nepal: Achievement Challenge and Next Steps*, IEED/ AEMS

Khadka, R., S. Gorzula and S. Guragain (2013). *Environmental Impact Assessment: Process, Method and Practice in South Asia*, Scheme, Pokhara University

- Koirala, M., Ramakrishnan P.S. and Saxena, K.G. (2011). *Environmental Determinants of Livelihood Related Food Production System in a Mid Himalayan Landscape, East Nepal. Livelihood Linked Environmental Determinants in Himalaya Landscape*. Lambert Academic Publishing, Germany.
- Martens P. and J. Rotmans (1999). *Climate Change: An Integrated Perspective*. Kluwer Academic Publishers
- Mishra, M.P. (2000). *Our Environment Pollution and future strategies*. S. Chand & Company., New Delhi, India.
- Misra, D.D. (2008). *Fundamental concepts in Environmental Studies*. S. Chand & Co. Ltd. New Delhi
- NPC / World Conservation Union (1995), *National Conservation Strategy*, Kathmandu.
- Odum, E. P. and Barrett, G. W. (2005), *Fundamentals of Ecology*, 5th Edition, Saunders Company, USA.
- Santhra S.C. (2004) *Environmental Science* New Central Book Agency
- Singh, H.R. (2005). *Environmental Biology*. S. Chand and Company Ltd., New Delhi, India.
- Talking H Hellemon, H. White, R (Ed. 2005). *Renewable Natural Resource Management for Mountain Communities*. ICIMOD, Nepal.
- Verma, P.S. and V.K. Agarwal (2001). *Environmental Biology*. S. Chand and Company Ltd., New Delhi, India.

Bio. Ed. 518: Environmental Biology and Environmental Education

Course No.	: Bio. Ed. 518 (P)	Nature of the course: Practical
Level	: M. Ed. in Biology	Credit hour: 1
Semester	: First	Teaching hours: 48*
Period per week: 3pds/day/week/gr * *(P)		

1. Course Introduction:

This part of the course includes practical activities/ experiments on Environmental Biology and Environmental Education. For the course, the practical's include field studies, laboratory exercises (analysis), and creative activities. These exercises are not only relevant to get a better understanding of environment but also provide hands-on experience at devising methods for preventing environmental degradation and maintaining the environmental sustainability.

2. General Objectives

The general objective of this course are to:

- acquaint the students with the real -field based knowledge of ecosystem and community
- provide knowledge and develop practical skills on ecosystem, water pollution and related issues
- enable the students, appreciate to the ever-increasing environmental issues and need and applications of environmental education

3. Specific Objectives and Contents

Specific objectives	Contents (48 hrs.)
Group A: Environmental Biology	
<ul style="list-style-type: none">• Determine the density of different species in the community by quadrat method.• Explore the frequency of different species in the community by quadrat method.	<p>Unit I: Ecosystem approach (8x3= 24 hrs.)</p> <p>A. Community</p> <ol style="list-style-type: none">1. Determination of density of different species in the community by quadrat method of terrestrial ecosystem.2. Determination of frequency of different species in the community by quadrat

<ul style="list-style-type: none"> • Study on population density of butterfly by capture and recapture method. • Measure the primary productivity of grassland ecosystem by biomass method • Find out pH and temperature of water • Study the Producers, Consumers, Decomposers of Pond ecosystem 	<p>method of terrestrial ecosystem.</p> <p>3. Determination of population density of butterfly by capture and recapture method.</p> <p>B. Ecosystem</p> <p>4. Grassland Ecosystem</p> <p>Measurement of primary productivity of grassland ecosystem by harvest method</p> <p>5. Pond Ecosystem</p> <ul style="list-style-type: none"> • Abiotic components • Biotic components
<ul style="list-style-type: none"> • Compare the quality of water based on pH, temperature, transparency, total dissolved solids, dissolved oxygen and Electrical conductivity in the water samples of Lentic and Lotic environment. 	<p>Unit II: Water Pollution (4x3=12 hrs.)</p> <p>Measurement of water quality of Lentic and Lotic environment of following parameters:</p> <ul style="list-style-type: none"> • Temperature and pH • Transparency • Total dissolved solids • Dissolved oxygen • Electrical conductivity
Group B: Environmental Education	
<ul style="list-style-type: none"> • Write a term paper on existing environmental education in science and science education courses of Nepal's school level/ higher secondary education level/ universities level and present on formal seminar 	<p>Unit I A: Environmental Education (2x3= 6 hrs.)</p> <ul style="list-style-type: none"> • Write a term paper on existing environmental education in science and science education courses of Nepal's school level/ higher secondary education level/ universities level • Present the term paper in the formal

	seminar
<ul style="list-style-type: none"> Identify environmental impacts and their mitigation measures in brick factory/ pharmaceutical Industry /dyeing Industry / hospitals at local level 	<p style="text-align: center;">Unit I B: Environmental Education</p> <p style="text-align: right;">(2x3= 6hrs.)</p> <ul style="list-style-type: none"> Identification of environmental impacts and their mitigation measures of brick factory/ pharmaceutical industry dyeing industry / hospitals at local level Present the term paper in the formal seminar

Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.

4. Instructional Techniques

S.N.	Units	Name of Unit	Common Methods	Specific methods	Remarks
Group A: Environmental Biology					
1.	I	Ecosystem approach	Lecture and discussion; power-point presentation, performing experiments; interview; record keeping	Field work; laboratory work; report preparation; group work	
2.	II	Water pollution	Lecture and discussion; Power-point presentation	Field work; laboratory work; report preparation; group work; case study	

Group B: Environmental Education					
3.	I A	Environmental Education	Lecture and discussion; Power-point presentation	Collaborative method Project work Problem solving and reports	
	I B	Environmental Education	Lecture and discussion; Power-point presentation	Collaborative method; problem solving; project work; report writing	

5. Evaluation **35 Marks**

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15 Marks	20 Marks	35 Marks

5.1 Internal Evaluation **15 Marks**

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5Marks
2.	Students' portfolios (Record book and Books and article review etc.)	5Marks
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5Marks
	Total	15Marks

5.2 External Evaluation **20 Marks**

Marks distribution for practical external evaluation will be as following.

1.	Experiment / project work report and presentation / study reports	15Marks
2.	Viva-voce	5 Marks
	Total	20Marks

Note:

Students must pass both in internal as well as external assessment of practical examination

** Practical teaching hours is 3 times more than teaching hours of theory ($3 \times 16 = 48$ hours)*

***A group consists of 15 students and one teacher will be assigned for a group.*

****Construction of models, charts, teaching aids, develop concept map etc. Also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.*

6. Recommended books for Practical

APHA, AWWA, and WPCF (2005) *Standard Methods for the Examination of Water and Wastewater*. 21st Edition, American Public Health Association, Washington DC.

Sharma, P.D. (1993). Environmental Biology. Rastogi Publication, Meerut, India

Zobel, Jha, Behan and Yadav (1987). *A Practical Manual for Ecology*

Chemistry Education

- i. Chem. Ed. 515 (T+P) - Applied Inorganic Chemistry
- ii. Chem. Ed. 516 (T+P) – Advanced Organic Chemistry
- iii. Chem. Ed. 517 (T+P) – Natural Product Chemistry
- iv. Chem. Ed. 518 (T+P) – Fundamentals of Biochemistry

Chem. Ed. 515: Applied Inorganic Chemistry

Course No.: Chem. Ed. 515(T)

Nature of the course: Theory

Level: M.Ed. in Chemistry

Credit hours: 2

Semester: First

Periods / week: 2

Teaching hours: 32

1. Course Introduction

This course is designed to acquaint the students with the knowledge and skills of applied inorganic chemistry. The theory part of inorganic chemistry gives special emphasis on atomic structure, inorganic reaction mechanism, spectroscopy, industrial chemistry, and fertilizers.

2. General Objectives

The general objectives of this course are as follows:

- To provide in depth knowledge on the atomic structure
- To acquaint the students with the concepts and process involved in inorganic reaction mechanism
- To make the students familiar with the basic principles, instrumentation and application of different types of spectroscopy
- To acquaint the students with the basic principles and manufacturing process involved in different chemical industries
- To make the students familiar with fertilizers.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Explain wave mechanical concept of atom.• Derive Heisenberg's uncertainty principle.• Elaborate wave nature of electron.• Explain interpretation of wave function.• Derive wave equation.• Explain principle of superposition.• Explain the particle in a one dimensional and three-dimensional box.• Derive Schrodinger wave equation.	<p>Unit I: Atomic structure (8)</p> <p>1.1 Introduction</p> <p>1.2 Wave mechanical concept of atom</p> <p>1.3 Heisenberg's uncertainty principle</p> <p>1.4 Wave nature of electron</p> <p>1.5 Interpretation of wave function</p> <p>1.6 Wave equation</p> <p>1.7 Principle of superposition</p> <p>1.8 The particle in a one-dimensional box</p>

<ul style="list-style-type: none"> • Elaborate quantum state and electron spin of atom. • Explain energy state of the hydrogen atom. • Explain wave function of the hydrogen atom. • Solve some related numerical problems 	1.9 The particle in a three-dimensional box 1.9.1 Schrodinger wave equation 1.9.2 Quantum states and electron spin 1.9.3 Energy state of hydrogen atom 1.9.4 Wave function of hydrogen atom 1.9.5 Some numerical problems
<ul style="list-style-type: none"> • Explain coordination compound. • Define and explain ligands and types of ligands. • Explain Werner's theory for coordination compounds. • Explain valence bond theory for coordination compounds. • Explain the application of crystal field theory for the formation of coordination complexes. • Explain the molecular orbital theory for the formation of coordination complexes. • Explain kinetic and mechanism of inorganic reaction. • Explain stoichiometric and intimate mechanism. • Elaborate kinetic and thermodynamic properties of complexes (labile, inert, stable and unstable). • Explain ligand substitution reaction mechanism. • Explain theoretical approach of substitution mechanism. • State nucleophilic reactivity of ligand substitution reaction. • Explain effect of electronic structure of central atom. • Explain substitution reaction of octahedral complexes. • Explain mechanism of substitution reaction of complex of Co (III). • To explain the trans effect on inorganic reaction mechanism 	<p>Unit II: Inorganic reaction mechanism (10)</p> 2.1 Introduction 2.2 Coordination compound 2.3 Ligands and types of ligands 2.4 Werner's theory 2.5 VBT, CFT and MOT 2.6 Kinetics and Mechanism 2.7 Stoichiometric mechanism and intimate mechanism 2.8 Kinetic and thermodynamic properties of complexes (labile, inert, stable and unstable) 2.9 Mechanism for ligand substitution reactions 2.9.1 Theoretical approach of substitution mechanism 2.9.2 Nucleophilic reactivity 2.9.3 Effect of electronic structure of central atom 2.9.4 Substitution reaction of octahedral complexes 2.9.5 Mechanism of substitution reaction of complexes of Co (III) 2.9.6 Trans effect 2.9.7 Experimental test of mechanism 2.9.7.1 Base hydrolysis of Co (III) complexes

<ul style="list-style-type: none"> • Study the acid and base hydrolysis of Co (III) complex. • Explain bonding dissociation reaction of octahedral complexes. • Elaborate stereochemistry of octahedral substitution reaction. 	<p>2.9.7.2 Acid hydrolysis 2.9.7.3 bonding dissociation reactions of octahedral complexes 2.9.7.4 Stereochemistry of octahedral substitution reactions</p>
<ul style="list-style-type: none"> • State the principle, instrumentation and application of spectroscopy. • Explain the working principles of Ultraviolet and visible, atomic absorption, Infra-red; Raman, NMR, mass spectroscopy. • Identify simple molecules with the application of UV; IR; NMR; mass, Raman and atomic absorption spectra. 	<p>Unit III: Principle of spectroscopy (6)</p> <p>3.1 Introduction 3.2 General principle, instrumentation and its application</p> <p>3.2.1 Ultraviolet and visible spectroscopy 3.2.2 Atomic absorption spectroscopy (AAS) 3.2.3 Infra-red spectroscopy 3.2.4 Raman spectroscopy 3.2.5 Nuclear magnetic resonance spectroscopy 3.2.6 Mass spectroscopy</p>
<ul style="list-style-type: none"> • Define and explain the process of metal industry. • Define and explain the properties of cement and glass. • Explain the manufacture of cement through rotary kiln. • Give the chemical process of setting of cement. • Explain the effect of cement in our environment. • Describe the manufacture of glass. • Explain the manufacture and uses of soap and detergent. • Explain the manufacture and basic properties of Paper. 	<p>Unit IV: Industrial chemistry (4)</p> <p>4.1 Introduction 4.2 Metal industry 4.3 Cement industry</p> <p>4.3.1 Manufacture of cement 4.3.2 Setting of cement</p> <p>4.4 Glass industry 4.5 Soap and detergent industry</p> <p>4.5.1 Manufacture of soap 4.6 Manufacture of detergents</p> <p>4.7 Paper industry (Hand made and Machine made)</p>
<ul style="list-style-type: none"> • Define and explain natural manures and chemical fertilizers. • Explain composting process of manure. • Explain the function of essential plant nutrients. • Describe the essential qualities of a fertilizer. 	<p>Unit V: Fertilizers (4)</p> <p>5.1 Introduction 5.2 Classification of fertilizers</p> <p>5.2.1 Natural fertilizers 5.2.2 Chemical fertilizers</p>

<ul style="list-style-type: none"> Classify different types of fertilizers. Explain the preparation, properties and uses of N-type, P-type, K-type, NP-type, PK-type, NPK-type fertilizers. Describe the manufacture of compound fertilizer. Explain the hazardous effects of chemical fertilizers. Explain the fertilizer residue analysis techniques. 	5.2.3 Mixed fertilizer (N, P, K) 5.3 Composting process of manure 5.4 Essential elements and deficiency symptoms in plants 5.5 Manufacture of compound fertilizer 5.6 Hazardous effect of chemical fertilizer 5.7 Analysis of fertilizer residue in soil
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Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

1.1. General Instructional Techniques

- Lecture
- Discussion
- Demonstrative activities
- Collaborative work
- Problem solving
- Project work
- Individual laboratory work
- Group work

1.2. Specific Instructional Techniques/Activities

Units	Specific Instructional Techniques
I	Classroom presentation on the topic ‘atomic structure’
II	Report writing and presentation followed by discussion on inorganic reactions mechanism
III	Presentation by studying the handouts provided by the teacher followed by suggestions
IV	Power Point display and reflection on it with comments. Perform field visit activities; cement industries, soap industries and metal industries.

V	Paper writing and presentation followed by discussion. Perform demonstrative activities on the given topic e.g., fertilizers.
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5. Evaluation

5.1 Evaluation (Internal Assessment and External Examination)

Nature of course	Internal assessment	Semester examination	Total marks
Theory	25	40	65

Note: Students must pass separately in internal assessment and semester examination.

5.1.1. Internal Evaluation

25 Marks

Internal evaluation will be conducted by course teacher based on the following activities:

1. Attendance and participation in learning activities	5
2. First assignment (written assignment)	5
3. Second assignment (report writing and presentation)	5
4. Third assignment/ Term exam	10
Total	25

Note: First assignment/assessment can be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment can be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc.; and third assignment will be term exam.

5.1.2. External Evaluation (Final Examination)

40 Marks

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

1. Objective questions (Multiple Choice Questions 10 x 1mark)	10
2. Subjective short questions (6 questions with 2 'OR 'questions x 5 marks)	30
Total	40

6. Recommended Books and References

Recommended Books

Arkins, P.W., Overton, T.I., Rourke, J.P., Weller, M. T. & Armstrong, F. A. (2014). *Inorganic chemistry*. United Kingdom: Oxford University Press. (For Unit - II)

- G.H. Jeffery, J. Bassett, J. Mendham and R.C. Denney. (1994). *Vogel's textbook of quantitative chemical analysis*. ELBS (For Unit - III).
- Huheey, J. E., Keiter, E. A., Keiter, R. L., Medhi, O. K. (2009). *Inorganic chemistry: Principles of structure and reactivity* (4th ed.). New Delhi: Dorling Kindersley (India) Pvt. Ltd. (For Units - I and II).
- Prakash, S, Tuli, G.D. Basu, S.K. & Madan, R.D. (2008). *Advanced inorganic chemistry*. New Delhi: S. Chand & Co. (For Units – I, II, IV & V)
- R.A. Day and A.L. Underwood. (1993). *Quantitative analysis*, 6th ed. Prentice-Hall of India (For Units - III)
- Sharma B.K. (2008). *Instrumental method of chemical analysis*. Meerut: Goel Publishing House. (For Unit - III).
- Weller, M., Rourke, J., Overton, T. & Armstrong, F. (2018). Inorganic chemistry (7th ed.). United Kingdom: Oxford University Press. (For Unit - III)

References

- Agrawal, (1990). *Modern inorganic chemistry*. Allahabad: Kitab Mahal. (For Unit - IV)
- Cotton, F.A., Wilkinson, G. Murillo, C.A. & Bochmann, M. (2008). *Advanced inorganic chemistry*. New Delhi: Wiley (P) Ltd. (For Unit - I)
- Gilbert, B.C. (1985). *Investigation and molecular structure*. London: ELBS (For Unit - IV)
- Jordan, R.B. (1991). *Reaction mechanisms of inorganic and organometallic systems*. Oxford University Press, New York, (For Unit - II)
- Lee, J.D. (1977). *Concise inorganic chemistry*. London: ELBS and Van Nostrand Reinhold Company Ltd. (For Unit - I)
- Raj, G. (1996). *Advanced inorganic chemistry*. Meerut: Goel Publishing House (For Unit - I)
- Wells, A.F. (1975). *Structural inorganic chemistry*, 4th ed. Clarendon, Oxford
- Willard, H.H., Merritt, L.L., Dean, J.R. & Settle, F.A. (1981). *Instrumental methods of analysis*, (6th ed.). Van Nostrand (For Unit - III)

Chem. Ed.515: Applied Inorganic Chemistry Practical

Course No: Chem. Ed.515 (P)

Nature of the course: Practical

Level: M.Ed. in chemistry Education

Credit hours: 1

Semester: First

Teaching hours: 48*

Period per week: 3 pds/day/week/gr *(P)

1. Course Introduction

This course is designed to acquaint the students with the knowledge and skills of applied inorganic chemistry. The practical part includes practical activities/ experiments on volumetric analysis, titration, and estimation and project work about applied inorganic chemistry.

2. General Objectives

The general objectives of this course are as follows:

- To develop practical knowledge on applied inorganic chemistry through laboratory experiments and activities
- To develop practical skill on applied inorganic chemistry through laboratory experiments and activities

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Estimate copper in copper sulphate by acidimetry and alkalimetry.• Estimate ammonia in ammonium chloride by acidimetry and alkalimetry.• Estimate ferrous ions in Mohr's salt by dichromate titration.• Estimate the percentage of purity of KBr by using adsorption indicator.• Estimate percentage composition of a mixture of ferrous and ferric salts by permanganate titration.	Unit 1: Volumetric analysis (20) 1.1 Acidimetry - alkalimetry 1.2 Percentage of purity 1.3 Permanganate titration
<ul style="list-style-type: none">• Determine available chlorine in bleaching powder.	Unit 2: Titration and estimation (20)

<ul style="list-style-type: none"> Determine the hardness of water by EDTA titration. Estimate barium in barium chloride by Iodimetry titration. Estimate of sodium chloride by precipitation reaction. Determine the total nitrogen present in given water sample. Determine the total hardness of a given water sample. 	2.1 Dichromate titration 2.2 EDTA titration 2.3 Iodometry titration 2.4 Argentometry titration 2.4.1 Estimation of nitrogen 2.4.2 Estimation of hardness of water
<ul style="list-style-type: none"> Quantitative analysis of Fe in water sample using UV-Vis spectrometer 	Unit 3: Spectroscopy (2) 3.1 Quantitative analysis of Fe in water sample using UV-Vis spectrometer
<ul style="list-style-type: none"> Activities: Perform the project work on some burning issues of applied inorganic chemistry. 	Unit 4: Project works (6) 4.1 Handmade paper making using local fiber 4.2 Determination of nitrate in soil sample 4.3 Any other project works related to applied inorganic chemistry

Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.

4. Instructional Techniques

- Performing experiments
- Interview
- Report writing

5. Evaluation

35 Marks

Nature of course	Internal evaluation	External evaluation	Total marks
Practical	15	20	35

5.1. Internal Evaluation

15 Marks

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5
2.	Students' portfolios (Record book and Books/article review etc.)	5

3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5
	Total	15

5.2. External Evaluation 20 Marks

Marks distribution for practical external evaluation will be as follows.

1.	Experiment / project work report and presentation / study reports	15
2.	Viva-voce	5
	Total	20

Note:

Students must pass both in internal and external assessment of practical examination.

** Practical teaching hours will be 3 times more than teaching hours of theory ($3 \times 16 = 48$ hours).*

***A group consists of 15 students and one teacher will be assigned for a group.*

****Construction of models, charts, teaching aids, develop concept map etc.; also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.*

6. Recommended Books

Ghimire, K.N.; Pokhrel M.R., and Bohara K.P. (2008). *University experimental inorganic chemistry*: Quest Publication, Kathmandu, Nepal.

Pokhrel, M.R.; Yadav, P.N.; and Shrestha, S. (2009). *Advanced practical inorganic chemistry for M.Sc.*: Kshitiz Publication, Kathmandu, Nepal.

Raj, G. (2009). *Advanced practical inorganic chemistry*. New Delhi: Goel Publishing House.

Vogel, A.I. (1994). *Textbook of practical inorganic chemistry*. London: ELBS and Longman.

Chem. Ed. 516: Advanced Organic Chemistry

Course No.: Chem. Ed. 516 (T)

Nature of the course: Theoretical

Level: M.Ed. in Chemistry

Credit hours: 2

Semester: First

Teaching hours: 32

Period per week: 2

1. Course Introduction

This course is designed with the aim to provide the students with deep level knowledge and understanding of advanced organic chemistry required in teaching as well as any field of chemistry. This course is a milestone for the students to identify chemistry related problems and solve them. The course is specific in nature and gives special emphasis on structure of organic molecules, reaction intermediates, mechanism of organic reactions, polynuclear aromatic hydrocarbons, heterocyclic compounds and organometallic compounds.

2. General Objectives

The objectives of this course are as follows:

- To provide in-depth knowledge of basic to advanced concepts of organic chemistry
- To enable the students for the determination of geometry and shapes of organic molecules
- To acquaint the students with in-depth knowledge of reaction mechanism and intermediates
- To develop the understanding about heterocyclic compounds
- To develop the ideas of structure elucidation of various organic compound
- To infer the knowledge of polynuclear aromatic hydrocarbons and heterocyclic compounds
- To acquaint the students with the knowledge about preparation, properties and uses of organometallic compounds

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Explain the term atomic and molecular orbitals.• Elaborate the concept of symmetric and asymmetric molecules.• Illustrate the concept of chiral molecules.• Explain chirality and optical activity.• Explain the configuration of molecules having double bonds and cyclic compounds.• Draw the conformation of ethane, n-	<p>Unit I: Structure of organic molecules (4)</p> <p>1.1 Introduction 1.2 Atomic and molecular orbitals 1.3 Symmetric and asymmetric molecules 1.4 Chirality and optical activity 1.5 Configuration in organic compounds</p>

<p>butane and cyclohexane of the alicyclic system.</p> <ul style="list-style-type: none"> Describe the types of structural isomerism of organic compounds. Explain the optical and geometrical isomerism in organic compounds. Elaborate the concept of hybridization with reference to organic compounds. 	<p>1.6 Conformation in open chain systems and six membered rings</p> <p>1.7 Isomerism in organic compounds: structural isomerism and stereoisomerism</p> <p>1.8 Hybridization in aliphatic organic compounds</p>
<ul style="list-style-type: none"> Describe different types of reagents. Explain concept of carbocation, carbanion, carbon free radicals, carbines and nitrenes. Elaborate the structure, formation and stability of carbocation, carbanion and carbon free radicals, carbines and nitrenes. Illustrate the reactions of mentioned reaction intermediates. Describe methods used for determining the mechanism of a reactions. 	<p>Unit II: Reaction Intermediates (4)</p> <p>2.1 Reagents and reaction intermediates</p> <p>2.2 Generation, structure and stability of carbocation, carbanion, and carbon free radicals, carbines and nitrenes</p> <p>2.3 General reactions of carbocation, carbanion, carbon free radicals, carbines and nitrenes</p> <p>2.4 Methods of determination of reaction mechanisms</p> <p>4.4.1 Product analysis</p> <p>4.4.2 Determination of the presence of an intermediate</p> <p>4.4.3 Isotopic labeling</p> <p>4.4.4 Stereo chemical studies</p> <p>4.4.5 Kinetic evidence</p>
<ul style="list-style-type: none"> Explain substitution reaction with examples. Describe mechanism and stereochemistry of S_N1 and S_N2 reactions in aliphatic compounds. State the stereo chemical implications of aliphatic nucleophilic substitution mechanism. Explain the mechanism of aromatic $SN1$, S_N2 and Benzyne mechanism in aromatic compounds. Explain the effects of the leaving group, medium and phase transfer catalysis, on aliphatic nucleophilic substitution reactions. Describe the effect of substrate structure, 	<p>Unit III: Substitution reaction mechanism (8)</p> <p>3.1 Introduction</p> <p>3.2 Aliphatic Nucleophilic substitution reactions</p> <p>3.3 Aromatic Nucleophilic substitution reactions</p> <p>3.4 Factors associated with nucleophilic substitution reactions of aliphatic and aromatic compounds</p> <p>3.5 Aliphatic electrophilic substitution reactions</p>

<p>leaving group and attacking nucleophile on aromatic nucleophilic substitution reactions.</p> <ul style="list-style-type: none"> Describe the aliphatic electrophilic substitution reactions by double bond shifts. Explain the orientation in benzene rings with more than one substituent with mechanism in aromatic electrophilic substitution reactions. Explain the free radical substitution reactions with mechanism. 	<p>3.6 Aromatic electrophilic substitution reactions</p> <p>3.7 Free radical substitution reactions</p>
<ul style="list-style-type: none"> Illustrate addition and elimination reactions Describe the stereochemical orientations in carbon-carbon multiple bonds Illustrate mechanism of carbon –hetero multiple bonds. Explain the electrophilic and nucleophilic addition reaction mechanism. Elaborate concept of alpha, beta and gamma elimination Illustrate E1, E2 and E1CB reactions with mechanism. Discuss the stereochemistry of E1 and E2 reactions Explain Saytzev and Hofmann's rule's for elimination reactions Describe the effects of substrate, attacking medium and leaving groups in elimination reactions. 	<p>Unit IV: Addition and elimination reactions (5)</p> <p>4.1 Introduction</p> <p>4.2 Stereo chemical orientation</p> <p>4.3 Addition to carbon-carbon multiple bonds</p> <p>4.4 Addition to carbon-hetero multiple bonds</p> <p>4.5 Electrophilic and nucleophilic addition reactions</p> <p>4.6 E1 and E2 and E1CB reaction mechanism</p> <p>4.7 Stereochemistry of E1and E2 reactions</p> <p>4.8 Factors associated with elimination reactions</p>
<ul style="list-style-type: none"> Introduce the concept of polynuclear aromatic hydrocarbons. Explain the chemistry of naphthalene and anthracene. Explain the methods of preparation, properties and uses of anthraquinone and phenanthrene. Establish the structure of naphthalene and anthracene. 	<p>Unit V: Polynuclear aromatic hydrocarbons (5)</p> <p>5.1 Introduction</p> <p>5.2 Chemistry of naphthalene, anthracene, phenanthrene, and anthraquinone</p> <p>5.3 Structure elucidation of naphthalene and anthracene</p>
<ul style="list-style-type: none"> Define heterocyclic compounds. Describe the methods of preparation, properties and uses of pyrrole, furan, furfural, pyridine and quinoline. Elucidate the structure of pyrrole, furan and pyridine. 	<p>Unit VI: Heterocyclic compounds (4)</p> <p>6.1 Introduction</p> <p>6.2 Pyrrole</p> <p>6.3 Furan</p> <p>6.4 Furfural</p>

	6.5 Pyridine 6.6 Quinoline
<ul style="list-style-type: none"> • Introduce organometallic compounds. • Explain the nature of organometallic compounds. • Illustrate the importance of Grignard's reagent. • Describe the methods of preparation of Grignard reagents. • Explain the physical and chemical properties of Grignard reagents. • Elaborate the applications of Grignard reagents. 	Unit VII: Organometallic Compounds (2) <p>7.1 Introduction 7.2 Nature of organometallic compounds 7.3 Importance of organometallic compounds 7.4 Grignard reagents 7.4.1 Methods of preparation 7.4.2 Properties: physical and chemical properties 7.4.3 Applications of Grignard reagents</p>

Note: The figures in the parenthesis indicate the appropriate teaching hours for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of the general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1. General instructional Techniques

- Discussion
- Demonstration
- Presentation
- Inquiry
- Project work
- Cooperative and collaborative work
- Internet (web) surfing
- Group work

4.2. Specific Instructional Techniques/Activities

Units	Specific Instructional Techniques
I	Classroom presentation on structure of organic molecules and floor

	open to discussion
II	Report writing and presentation followed by discussion
III	Presentation by studying the handouts provided by the teacher followed by teachers' suggestions
IV	Perform collaborative discussion and reflect on it with comments
V	Paper writing and presentation followed by discussion
VI	Presentation by studying the handouts provided by the teacher followed by teachers' suggestions on hetero cyclic compound topic
VII	Classroom presentation and group discussion orientated to the presentation

5. Evaluation

5.1 Evaluation (Internal Assessment and External Examination)

Nature of course	Internal assessment	Semester examination	Total marks
Theory	25	40	65

Note: Students must pass separately in internal assessment and semester examination.

5.1.1. Internal Evaluation

25 Marks

Internal evaluation will be conducted by course teacher based on following activities:

1.	Attendance and participation in learning activities	5
2.	First assignment (written assignment)	5
3.	Second assignment (report writing and presentation)	5
4.	Third assignment/ Term exam	10
<hr/>		25

Note: First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc.; and third assignment will be term exam.

5.1.2. External Evaluation (Final Examination)	40 Marks
Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be	
1. Objective questions (Multiple Choice Questions 10 x 1mark)	10
2. Subjective short questions (6 questions with 2 ‘OR ‘questions x 5 marks)	30
Total	40

6. Recommended Books and References

Recommended Books:

- Bahl, B. S. (2013). *Advanced organic chemistry*. New Delhi: S. Chand and Company Ltd. (For units - I, II, VI and VII)
- Finar, I. L. (2010). *Organic chemistry*. Volumes I and II. London: ELBS, Longman Group Ltd, (For units - I, VI and VII).
- March, J. (2013). *Advanced organic chemistry* (6th ed.). New Delhi: A Wiley Inter-Science Publication. (For units - I, II, III and IV)
- Morrison & Boyd. (2010). *Advanced organic chemistry* (7th ed.) (For unit IV)
- Robert, E. (1998). *Organic synthesis*. Ireland: Prentice Hall. (For units - IV and V)
- Smith, B. M. (2013). March’s advanced organic chemistry: Reactions, mechanisms and structure (7th ed.). New Jersey: John Wiley & Sons, Inc. (For Units - I, II, III and IV)

References

- Carey, F., & Sundberg, R. J. (2007). *Advanced organic chemistry: Structure and mechanisms* (5th ed.). Virginia: Springer
- Ingold, C. K. (1957). *Structure and Mechanism in organic chemistry*. Cornell University Press. (For unit II, II and IV)
- Ireland, E. L. (2006). *Stereochemistry of organic compounds*. Wiley Eastern Ltd. (For unit I)
- Peter Skyes. (2000). *Mechanism of organic reactions*. Orient Longman. (For units II, III and IV)
- Sanyal, S. N. (2003). *Reactions, rearrangements and reagents* (4th ed.). Patna, India.: Bharati Bhawan. (For units II and III)
- Singh, J., & Yadav, L. D. S. (2004). *Advanced organic chemistry*. Meerut, India: Pragati Prakashan, (For unit I)
- Sukla, S. P. & Trivedi, G. L. (2000). *Modern organic chemistry*. New Delhi: S. Chand and Company Ltd. (For unit I)

Chem. Ed. 516: Applied Organic Chemistry Practical

Course No: Chem. Ed.516 (P)	Nature of the course: Practical
Level: M.Ed. in chemistry Education	Credit hours: 1
Semester: First	Teaching hours: 48*
	Period per week: 3 pds/day/week/gr *(P)

1. Course Introduction

The aim of the course is to provide knowledge and skills among the students through the practical activities of organic chemistry conducted in lab. Students are expected to be competent in applying the knowledge and skills learnt to real teaching and other professional careers. The practical activities include lab-based experiments on identification of organic compounds, organic preparation, and field-based project works on organic chemistry.

2. General Objectives

The general objectives of this course are as follows:

- To develop practical knowledge and skills in advanced organic chemistry through laboratory experiments and activities
- To familiarize the students with the recent advances in chemistry experiments and its applications in teaching and any other related field

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Identify the given aliphatic/aromatic organic with different functional groups (Halo compounds, carboxylic acid, carbonyl compounds, alcohol and phenol, amines, aldehyde and nitro compound,)	Unit.1 Identification of organic compounds (24) [At least eight aliphatic/aromatic compounds]
<ul style="list-style-type: none">• Prepare benzoic acid from benzaldehyde.• Prepare iodoform from acetone.• Prepare oxalic acid from cane sugar.	Unit 2. Organic preparations (18) 2.1 Preparation of benzoic acid 2.2 Preparation of iodoform 2.3 Preparation of p-aminobenzene

<ul style="list-style-type: none"> • Prepare p-aminobenzene from aniline. • Prepare methyl orange. • Prepare acetylsalicylic acid (aspirin) from acetyl chloride and acetic anhydride. • Prepare phenylmagnesium bromide. • Prepare picric acid from nitrating mixture. 	2.4 Preparation of oxalic acid 2.5 Preparation of methyl orange 2.6 Preparation of aspirin 2.7 Preparation of Grignard's reagent 2.8 preparation of picric acid
<ul style="list-style-type: none"> • Perform project works related to organic chemistry (Project work should be based on the contribution of organic chemistry to daily life, issues related to environment, industry, medicine and agriculture) 	Unit 3. Project work on organic chemistry (6)

Note: The figures in the parenthesis indicate the appropriate teaching hours for the respective units.

4. Specific Instructional Techniques

- Performing experiments
- Interview
- Report writing

5. Evaluation

35 Marks

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15	20	35

5.1. Internal Evaluation

15 Marks

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5
2.	Students' portfolios (Record book, Books and article review etc.)	5
3.	Participation, collaborative work, construction of teaching learning resources and planning for teaching learning ***	5
	Total	15

5.2. External Evaluation

20 Marks

Marks distribution for practical external evaluation will be as following.

1.	Experiment / project work report and presentation / study reports	15
2.	Viva-voce	5
	Total	20

Note:

Students must pass both in internal as well as external assessment of practical examination

** Practical teaching hours is 3 times more than teaching hours of theory (3x 16 = 48 hours)*

***A group consists of 15 students and one teacher will be assigned for a group.*

****Construction of models, charts, teaching aids, develop concept map etc.; also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.*

6. Recommended Books

Ahluwalia, V. K., & Dhingra, S. (2000). *Comprehensive practical organic chemistry: Qualitative analysis*. India: University Press (India) Private Limited.

Shriner, R. L., Fuson, R. C. & Curtin, D. Y. *The systematic identification of organic compounds, A laboratory manual (5th ed.)*. John Wiley and sons INC.

Vishnoi, N. K. (2007). *Advanced practical organic chemistry*. New Delhi: Vikash Publishing House Pvt. Ltd.

Vogel, A. I. (1970). *Elementary practical organic chemistry*. Part I, II and III. . Longman

Chem. Ed. 517: Natural Product Chemistry

Course No.: Chem. Ed. 517 (T)	Nature of the course: Theoretical
Level: M.Ed. in Chemistry	Credit hours: 2
Semester: First	Teaching hours: 32
	Period per week: 2

1. Course Introduction

This course is designed to acquaint the students with the knowledge and skills of organic natural product. The main aim of the course is to widen the horizon of knowledge and understanding of students with a view to make them able to identify the significance and importance of natural product in his/her life. It deals with natural product chemistry with special emphasis to introduce natural product chemistry, synthesis, natural dyes and purines, alkaloids, terpenoids, carbohydrates, vitamins and steroids and hormones.

2. General Objective

The general objectives of this course are as follows:

- To provide students with in-depth knowledge of natural product chemistry
- To familiarize the students with the basic concept of extraction process, classification of natural product, and chromatography techniques
- To enable the students in dealing with the basic concept of organic synthesis and modern synthetic concept of natural product
- To familiarize the students with different dyes and purines
- To help the students analyze different types and constitution of alkaloids and terpenoids
- To acquaint the students with the basic concepts of carbohydrate, ring structure of glucose, configuration and conformation
- To enable the students, familiarize the classification, structure elucidation and biological function of vitamins
- To elaborate stereochemistry, classification and uses of steroids and hormones
- To enable students conducting experiment on chromatography, identification of carbohydrate, percentage purity of sugar

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none"> • Explain the background, scope and characters of natural product chemistry. • Classify the natural product based on chemical, physiological and taxonomy. • Describe the types of phytoconstituents and screening methods. 	Unit I: Natural product chemistry (3) 1.1 Introduction 1.2 Classification 1.3 Primary and secondary metabolites 1.4 Phytoconstituents and their screening
<ul style="list-style-type: none"> • Define, and state the history and role of organic synthesis. • Differentiate between reaction and synthesis. • Describe classical, total, partial, rational, irrational and commercial synthesis. • Elaborate the nature of synthesis on the basis of chemo selective, regioselective, stereoselective, laboratory, symmetry based and ideal or perfect synthesis. • Characterize the good synthetic plan. • Illustrate different synthetic process on the basis of molecular characteristic, carbon framework construction and functionality. • Describe different approaches like starting material, linear and convergent approach and relay approach. • List the feature of planned synthetic strategy. • Describe the retrosynthetic analysis and disconnection. • Differentiate between logical and dislogical disconnection. 	Unit II: Organic synthesis (5) 2.1 Introduction 2.2 Reaction and synthesis 2.3 Types and nature of synthesis 2.4 Synthetic tools and reagents 2.5 Synthetic process or steps in synthetic planning 2.6 Retrosynthetic analysis and disconnection
<ul style="list-style-type: none"> • Define dyes and list the nature of dyeing. • Describe the Isolation and properties of Indigotin dyes. • Establish the constitution of Indigotin and Alizarin dyes. • Describe the synthesis process and classification of purines. • Explain the isolation and properties of Uric acid and 	Unit III: Natural dyes and purines (4) 3.1 Introduction 3.2 Dyeing 3.3 Indigotin 3.3.1 Alizarin

Caffeine. • Establish the constitution of Uric acid and Caffeine.	3.4 Synthesis and classification of purines 3.4.1 Uric acid 2.4.2 Caffeine
• Explain nature, occurrence, properties and functions of alkaloids. • Classify alkaloids on the basis of main ring system. • Describe the occurrence, methods of isolation and properties of Nicotine, Atropine and Piperine. • Establish the constitution of Nicotine, Atropine, and Piperine.	Unit IV: Alkaloids (5) 4.1 Introduction 4.2 Classification 4.3 Nicotine 4.4 Atropine 4.5 Piperine
• Explain nature, occurrence, classification and general characteristics of terpenoids. • Describe the occurrence, methods of isolation, properties and uses of citral, menthol and zinziberene. • Establish the constitution of citral, menthol and zinziberene.	Unit V: Terpenoids (4) 5.1 Introduction 5.2 Classification 5.3 Citral 5.4 Menthol 5.5 Zinziberene
• Identify and evidence for the ring structure of glucose. • Establish the constitution of glucose. • Determine the size of the ring in glucose. • Describe mutarotation and its mechanism. • Elaborate the projection formula of monosaccharides. • Relate between configuration and molecular rotations. • Describe the conformation of monosaccharides.	UNIT VI: Carbohydrate (4) 6.1 Introduction 6.2 Constitution of glucose 6.3 Mutarotation 6.4 Conformation 6.5 Configuration
• Explain the nature of vitamins. • Classify the vitamins. • Describe the biochemical functions and role of vitamin B Complex (B_1 , B_2 , Folic acid, Biotins, B_5 and B_{12}) A, C and K. • Elucidate the structure of vitamin A and C.	UNIT VII: Vitamins (3) 7.1 Introduction 7.2 Classification 7.3 Vitamin B complex 7.4 Biological function of vitamins

	7.5 Constitution
<ul style="list-style-type: none"> • Explain the nature of steroid and hormones. • Explain Diel's hydrocarbon. • Describe the stereochemistry of steroids. • Introduce cholesterol and describe its synthesis process. • Classify the steroids and sterols. • Distinguish between hormones and vitamins. • Classify sex hormones and their function. 	UNIT VIII: Steroids and hormones (4) <p>8.1 Introduction 8.2 Diel's hydrocarbon 8.3 Stereochemistry of steroids 8.4 Cholesterol 8.5 Sterols and its types 8.6 Difference between hormones and vitamins 8.7 Sex hormones</p>

Note: The figure with in the parentheses indicates the approximate periods for respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of the general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1. General instructional Techniques

- Discussion
- Demonstration
- Presentation
- Inquiry
- Project work
- Cooperative and collaborative work
- Internet (web) surfing
- Group work
- Field work

4.2. Specific Instructional Techniques/Activities

Units	Specific Instructional Techniques
I	Classroom presentation on natural product chemistry and floor open to discussion
II	Report writing and presentation followed by discussion

III	Presentation by studying the handouts provided by the teacher followed by teachers' suggestions
IV	Collaborative discussion and reflection with comments
V	Paper writing on terpenoids and presentation followed by discussion
VI	Presentation by studying the handouts provided by the teacher followed by teachers' suggestions on carbohydrate
VII	Presentation by studying the handouts provided by the teacher and making report including the suggestions
VIII	Classroom presentation and group discussion orientated to the presentation

5. Evaluation

5.1 Evaluation (Internal Assessment and External Examination)

Nature of course	Internal assessment	Semester examination	Total marks
Theory	25	40	65

Note: Students must pass separately in internal assessment and semester examination.

5.1.1. Internal Evaluation

25 Marks

Internal evaluation will be conducted by course teacher based on following activities:

- | | |
|--|-----------|
| 1. Attendance and participation in learning activities | 5 |
| 2. First assignment (written assignment) | 5 |
| 3. Second assignment (report writing and presentation) | 5 |
| 4. Third assignment/ Term exam | 10 |
| Total | 25 |

Note: First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

External Evaluation (Final Examination)

40 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

1. Objective questions (Multiple Choice Questions 10 x 1 mark)	10
2. Subjective short questions (6 questions with 2 'OR 'questions x 5 marks)	30
Total	40

6. Recommended Books and References

Recommended Books

- Agrawal, O.P. (2004). *Chemistry of organic natural product* (Vol. I), Meerut: Goel publishing house (For units - III, IV, V, VI, and VII)
- Chatwal, G. R. (2007). *Organic chemistry of natural products* (Vol I and II), India: Himalaya publishing house. (For units - IV, V, VI and VII)
- Corey, E. J., (2001). *General method of synthesis*. U.S.A.: Harvard University, U.S.A (For Units - I and II)
- Finar, I.L. (2008). *Organic Chemistry Volume 2: Stereochemistry and the chemistry of Natural Product (Fifth Ed.)*, London: Holloway, Copyright by Dorling Kindersley (India) (For units - IV, V, VI, VII and VIII)
- Robert, E. (1998). *Organic synthesis*. Ireland: Prentice Hall (For Units - I, II and VIII)

References

- Bahl,B.S. (2012). *Advanced organic chemistry*. New Delhi: S. Chand and company Ltd.
- Naknis, S. (1975). *Natural product chemistry* (vol I, II and III) Delhi: Academic press.
- Stephen, T. (2008). *Principles of synthesis Design*, London: Elsevier Sci.Pub. Company
- Sukla, S.P. &Trivedi, G. L. (2000). *Modern Organic Chemistry*, New Delhi: S. Chand and Company Ltd.

Chem. Ed.517: Natural Product Chemistry Practical

Course No: Chem. Ed.517 (P)

Nature of the course: Practical

Level: M.Ed. in chemistry Education

Credit hours: 1

Semester: First

Teaching hours: 48*

Period per week: 3 pds/day/week/gr *(P)

1. Course Introduction

The aim of the course is to provide knowledge and skills among the students through the practical activities of natural product chemistry conducted in lab. Students are expected to be competent in applying the knowledge and skills learnt to real teaching and other professional careers. The practical activities include lab-based experiments that are included under natural product chemistry.

2. General Objectives

The general objectives of this course are as follows:

- To develop practical knowledge and skills in natural product chemistry through laboratory experiments and activities.
- To familiarize the students with the recent advances in natural product chemistry experiments and its applications in teaching and any other related field.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Describe the process of determining the thin layer and paper chromatography.• Analyze flower pigments by paper chromatography.• Analyze flower pigments by TLC.	Unit 1: Chromatography (12) 1.1 Analysis of commercial ink by paper chromatography 1.2 Analysis of flower pigments by paper chromatography 1.3 Analysis of flower pigments by TLC
<ul style="list-style-type: none">• Identify the given carbohydrates (at least five carbohydrates)• Diagnose the given Carbohydrates.	Unit 2: Carbohydrates (15) 2.1 Identification of carbohydrate
<ul style="list-style-type: none">• Find out the percentage purity of cane-sugar.• Detect the vitamin C present in fruit juice.• Find out the percentage purity of glucose.• Perform the project work on some burning	Unit 3: Estimation and report writing (21) 3.1 Estimation of cane-sugar 3.2 Determination of Vitamin C in different

issues of natural product chemistry.	fruit juice 3.3 Estimation of glucose 3.4 Project work on natural product chemistry
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Note: The figures in the parenthesis indicate the appropriate teaching hours for the respective units and contents.

4 Specific Instructional Techniques

- Performing experiments
- Interview
- Report writing

5. Evaluation

35 Marks

Nature of course	Internal evaluation	External evaluation	Total marks
Practical	15	20	35

5.1. Internal Evaluation

15 Marks

Marks distribution for practical internal evaluation will be as follows.

1.	Attendance	5
2.	Students' portfolios (Record book and books/article review etc.)	5
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5
	Total	15

5.2. External Evaluation

20 Marks

Marks distribution for practical external evaluation will be as follows.

1.	Experiment / project work report and presentation / study reports	15
2.	Viva-voce	5
	Total	20

Note:

Students must pass both in internal as well as external assessment of practical examination.

* Practical teaching hours is 3 times more than teaching hours of theory ($3 \times 16 = 48$ hours)

**A group consists of 15 students, and one teacher will be assigned for a group.

***Construction of models, charts, teaching aids, develop concept map etc.; also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.

6. Recommended Books

Vishnoi, N. K. (2007). *Advanced practical organic chemistry*, Delhi: Vikash publishing House pvt.ltd

Dey, B. B., Sitaraman, M.V. & Govindachari, T. R. (2005). *Laboratory manual of organic chemistry* (3rd Ed.) India: Vishwanatham publisher.

Hostellamnn et.al, (2009). *Preparative chromatographic techniques* (2nd Ed), Springer: Verlin, Berlin, F.R.G.

Houghton, P.J. & Rahaman, A. (1998). *A laboratory manual for the fractionation of natural extracts*, London: Chapman Hall.

Vogel, A. L. (2004). *Elementary practical organic chemistry*, part I and II (2nd Ed), India: CBS, publication.

Chem. Ed. 518: Fundamentals of Biochemistry

Course No.: Chem. Ed. 518 (T)

Nature of the course: Theoretical

Level: M.Ed. in Chemistry

Credit hours: 2

Semester: First

Teaching hours: 32

Period per week: 2

1. Course Introduction

This course is designed to acquaint the students with the knowledge and skills of fundamental concepts in biochemistry. The main aim of this course is to widen the horizon of knowledge and understanding of students with a view to enable them to identify the significant problems of biochemistry. It emphasizes the contents of biochemistry such as proteins and amino acids, enzymes, lipids and fatty acids, photosynthesis, biochemistry of blood, antibodies and biosynthesis procedures.

2. General Objectives

General objectives of this course are as follows:

- To provide in-depth knowledge of biochemistry
- To acquaint the students with the knowledge of proteins, amino acids, enzymes, lipids, fatty acids and blood
- To provide the students with the knowledge of antibodies, photosynthesis and biochemistry
- To apply chemical concepts to solve qualitative and quantitative analysis on biochemistry
- To transfer the analytical and technical skills to work effectively in the various areas of biochemistry
- To apply appropriate theoretical concepts to do experimental observations in biochemistry.
- To develop practical knowledge and skills on biochemistry through laboratory experiments and activities
- To apply chemical concepts to solve qualitative and quantitative analysis on biochemistry.
- To transfer the analytical and technical skills to work effectively in the various areas of biochemistry.
- To apply appropriate theoretical concepts to do experimental observations in biochemistry.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none"> • Classify protein and amino acids on the basis of sources, shape of protein molecules, composition, solubility and biological function. • Describe the peptide bond with its representation, naming and stereochemistry. • Illustrate the chemical bond involved in protein structure (primary, secondary and ionic bond). • Explain the physical and chemical properties of proteins. • Discuss the analytical methods in protein chemistry such as Gel electrophoresis. 	<p>Unit I: Proteins and amino acids (5)</p> <p>1.1 Introduction 1.2 Classification based on</p> <ul style="list-style-type: none"> • Sources • Shape • Composition • Solubility • biological function <p>1.3 Properties of proteins 1.4 Structure and reactions of amino acids 1.5 Peptide bond 1.6 Analytical methods in protein chemistry</p>
<ul style="list-style-type: none"> • Explain the meaning, classification, nomenclature, isolation and purification of enzymes. • Describe the biological role of enzymes. • Verify the characteristics of enzymes on the basis of chemical, colloidal and catalytic properties. • Explain coenzymes and cofactors like iso-enzymes, pro-enzymes, multi-enzymes and tendon-enzymes. • Elaborate enzyme activity with (effect of PH, concentration, temperature, co-factors and additives). • Describe the functions and application of enzymes in clinical food, agriculture and environment. 	<p>Unit II: Enzymes (6)</p> <p>2.1 Introduction 2.2 Nomenclature and classification 2.3 Isolation and purification 2.4 Biological role of enzymes 2.5 Characteristics of enzymes 2.6 Co-enzymes and co-factors 2.7 Regulation of enzyme activity 2.8 Application of enzymes</p>
<ul style="list-style-type: none"> • Explain the meaning, biological function and classification of lipids. • Explain fatty acids (nomenclature, saturated and unsaturated amino acids, non-conjugated double 	<p>Unit III: Lipids and fatty acids (4)</p> <p>3.1 Introduction 3.2 Biological role of lipids</p>

<p>bond system, hydroxyl fatty acids, and cyclic fatty acids).</p> <ul style="list-style-type: none"> • Explain oxidation of fatty acids. • Elaborate the catabolism of cholesterol and phospholipids. 	<p>3.3 Classification of lipids 3.4 Oxidation of fatty acids 3.5 Synthesis of fatty acids 3.6 Cholesterol and fatty acids</p>
<ul style="list-style-type: none"> • Explain photosynthesis and list the materials required for it. • Describe the photosynthetic pigments of photochemistry. • Deduce the Hill reaction of photosynthesis. • Explain the light and dark reaction of photosynthesis. • Explain energy conversion process. • Elaborate the reduction of carbon dioxide. • Explain C4 pathway. • Explain the photosynthesis of bacteria. 	<p>Unit IV: Photosynthesis (3)</p> <p>4.1 Introduction 4.2 Raw materials 4.3 Photosynthetic pigments and Photochemistry 4.4 The Hill reaction 4.5 Photophosphorylation 4.6 Reduction of carbon dioxide 4.7 The C4 pathway 4.8 Photosynthesis of bacteria</p>
<ul style="list-style-type: none"> • Explain albumins, globulins, β_2- microglobulin, and fibrinogen. • Explain erythrocytes, leucocytes, platelets and their functions. • Deduce the structure of hemoglobin. • Describe the blood clotting factors and formation of fibrin, thrombin. • Illustrate the blood clotting mechanism. 	<p>Unit V: Biochemistry of blood (3)</p> <p>5.1 Composition 5.2 Formed elements of blood 5.3 Blood pigments 5.4 Clotting of blood 5.5 Structure of hemoglobin</p>

<ul style="list-style-type: none"> Explain the structure of hemoglobin. 	
<ul style="list-style-type: none"> Explain the meaning of antigens and antibodies. Elaborate the structure of antibodies. Describe antibody forming cells. Illustrate the interactions of antigen and antibody in relation to induction of immune response and production of antibodies and immunization. Explain antibody diversity on the basis of germ line theory and somatic theory. 	<p>Unit VI: Antibodies an antibiotics (3)</p> <p>6.1 Antigens and antibodies</p> <p>6.2 Structure of antibodies</p> <p>6.3 Components of immune system</p> <p>6.4 Antigen antibody interaction</p> <p>6.5 Antibody diversity</p> <p>6.6 Antibiotics and antibiotics resistance</p>
<ul style="list-style-type: none"> Explain the biosynthesis of saturated and unsaturated fatty acids. Elaborate the concept of energy supply for fatty acid synthesis. Describe the biosynthesis of triglycerides. Figure out the synthesis of glutamine, glutamate and proline. Explain the synthesis of asparagine and aspartate. Describe the fixation of nitrogen on the basis of reduction of nitrate, nitrogen and fixation of ammonia. Explain the duplication of DNA and information transfer system. Illustrate the models of replication of DNA. Describe mutagenesis and repair of DNA. Explain biosynthesis of RNA. Illicit the genetic code and information theory. Illustrate the mechanism of protein synthesis. Describe the protein synthesis in mitochondria and chloroplasts. 	<p>Unit VII: Biosynthesis (8)</p> <p>7.1 Lipids</p> <p>7.1.1 Saturated and unsaturated fatty acids</p> <p>7.1.2 Regulation of fatty acid synthesis</p> <p>7.1.3 Triglycerides</p> <p>7.2 Amino acids</p> <p>7.2.1 Essential and non-essential amino acids</p> <p>7.2.2 Fixation of nitrogen</p> <p>7.3 Nucleic acids</p> <p>7.3.1 Replication of DNA</p> <p>7.3.2 DNA diversification and repair mechanism</p> <p>7.3.3 Biosynthesis of RNA</p> <p>7.4 Proteins</p> <p>7.4.1 Genetic code and information theory</p> <p>7.4.2 Mechanism of protein synthesis</p> <p>7.4.3 Protein synthesis of mitochondria and chloroplasts</p>

Note: The figures in the parenthesis indicate the appropriate teaching hours for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of the general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Instructional Techniques

- Discussion
- Demonstration
- Presentation
- Inquiry
- Project work
- Cooperative and collaborative work
- Internet (web) surfing
- Group work

4.2 Specific Instructional Techniques/Activities

Units	Specific Instructional Techniques
I	Power point presentation in classroom on the topic of proteins and amino acids
II	Report writing and presentation followed by discussion
III	Presentation by studying the handouts provided by the teacher followed by teachers' suggestions
IV	Paper presentation and reflection with comments; perform sketch of hill and dark reaction
V	Paper writing and presentation followed by discussion
VI	Presentation by studying the handouts provided by the teacher followed by teachers' suggestions
VII	Classroom presentation and group discussion orientated to presentation

5. Evaluation

5.1. Evaluation (Internal Assessment and External Examination)

Nature of course	Internal assessment	Semester examination	Total marks

Theory	25	40	65
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Note: Students must pass separately in internal assessment and semester examination.

5.1.1. Internal Evaluation

25 Marks

Internal evaluation will be conducted by course teacher based on the following activities:

1. Attendance and participation in learning activities	5
2. First assignment (written assignment)	5
3. Second assignment (report writing and presentation)	5
4. Third assignment/ Term exam	10
Total	25

Note: First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc.; and third assignment will be term exam.

5.1.2. External Evaluation (Final Examination)

40 Marks

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be:

1. Objective questions (Multiple choice questions 10 x 1 mark)	10
2. Subjective short questions (6 questions with 2 'OR 'questions x 5 marks)	30
Total	40

6. Recommended Books and References

Recommended Books:

Less, A. M. (2008). *Protein science*. Oxford University Press.

Jain, J. L., and Jain, N. (2008). *Fundamental of biochemistry*. S. Chand and Company, New Delhi.

Lehninger, D. W. Nelson and M. M. Cox (2003). *Principle of biochemistry*.

Stryer, L. (2005). *Principle of biochemistry*. W. H. Freeman and co.

Leberman, M. L. (2000). *Basic medical biochemistry*. Williams and Wilkins.

Rastogi, S. C. (1993). *Biochemistry*. Tata McGraw-Hill Publishing Company Limited, New Delhi. (For Units - I, II, III, IV, V, VI and VII)

References

- Alberts, B., Lewis J., Raff M., Johnson A., Roberts K. (2010). *Molecular biology of cell*. Garland Publishing Inc.
- Ausubel F.M., Brent R., Kingston R.E., Moore D.D., Seidman J.G., Smith J.A., Struhl K (2002). *Short protocols in molecular biology*. Wiley.
- Campbell, N.A. and Reece, J.B. (2002). *Biology*. Pearson education/Benjamin Cummings.
- Grierson, D. and Covey, S.N. (1989). *Plant molecular biology*. Chapman or Hall or Blackie
- Griffiths, A.J.F., Gelbart, W.M., Miller, J.H., Lewontin, R.C. (2002). *Modern genetic analysis*. Freeman.

Chem. Ed. 518: Fundamentals of Biochemistry Practical

Course No: Chem. Ed. 518 (P)

Nature of the course: Practical

Level: M.Ed. in Chemistry

Credit hour: 1

Semester: First

Teaching hours: 48*

Period per week: 3 pds/day/week/gr *(P)

1. Course Introduction

This course is practical course and designed to develop knowledge and skills for conducting practical activities related to biochemistry. It helps to prepare students to take classes at High School and Bachelor's/Master's Level in Science Education. It will develop the skills of hands-on activities. The practical portion includes hands-on activities and experiments related to the theoretical contents as well as the basic skills of biochemistry.

2. General Objectives

The general objectives of the course are as follows:

- To Identify common laboratory equipment used in biochemistry and apply them
- To develop hands on skills of biochemistry laboratory
- To acquaint the students with knowledge and practical skills of biochemistry

3. Specific Objectives and Contents

Specific objectives	Contents
• Guide students for lab safety and lab operating techniques.	Unit 1 Laboratory safety and lab operating procedure (3)
• Separate biomolecules like fats, amino acids and proteins from different samples.	Unit 2 Qualitative analysis and separation of biomolecules (fats, amino acids and proteins) (15)
• Estimate amino acids and proteins in different samples.	Unit 3 Quantitative estimation of biomolecules (amino acid and proteins in different samples provided) (at least 2 samples). (12)

• Find out saponification number in the given samples of lipids.	Unit 4 Finding out saponification number of given lipids (4)
• Find out iodine number in the given samples of lipids.	Unit 5 Finding out iodine number of given lipids. (4)
• Separate lactose from the given sample of milk.	Unit 6 Separation of lactose from milk of different samples (4)
• Write the overall practical report and present it.	Unit 7 Presentation (6)

Note: The figures in the parenthesis indicate the appropriate teaching hours for the respective units.

4. Specific Instructional Techniques

- Performing experiments
- Interview
- Report writing

5. Evaluation

35 Marks

Nature of course	Internal evaluation	External evaluation	Total marks
Practical	15	20	35

5.1. Internal Evaluation

15 marks

Marks distribution for practical internal evaluation will be as follows.

1.	Attendance	5
2.	Students' portfolios (Record book and books/article review etc.)	5
3.	Participation, collaborative work, construction of teaching learning resources, and planning for teaching learning ***	5
	Total	15

5.2. External Evaluation

20 Marks

Marks distribution for practical external evaluation will be as follows.

1.	Experiment / project work report and presentation / study reports	15
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2.	Viva-voce	5
	Total	20

Note: Students must pass in the internal as well as external assessment of practical examination.

* Practical teaching hours is 3 times more than teaching hours of theory ($3 \times 16 = 48$ hours)

**A group consists of 15 students and one teacher will be assigned for a group.

***Construction of models, charts, teaching aids, develop concept map etc.; also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.

6. Recommended Books

Vishnoi, N. K. (2005). *Advanced practical organic chemistry*, 2nd edition. Vikash Publishing House, New Delhi.

Jain, J. L. (2008). *Fundamentals of biochemistry*. S. Sons and Company, New Delhi.

Curriculum and Evaluation

- i. CE. Ed. 515: Foundation of Curriculum
- ii. CE. Ed. 516: program Evaluation
- iii. CE. Ed. 517: Psychology Testing
- iv. CE. Ed. 518: Curriculum for Diversity in Education

CE Ed. 515 : Foundations of Curriculum

Course No.: CE Ed. 515

Level: M. Ed.

Semester: First

Nature of course: Theoretical

Credit Hours: 3

Teaching Hours: 48

1. Course Introduction

This course aims to provide students with critical understanding of foundations of curriculum planning and development. The course deals with different conceptions, issues and four foundations of curriculum - philosophical, psychological, social and knowledge. While developing a curriculum, one should depend primarily on ideas that stem from four major fields: philosophy, sociology, psychology and knowledge. An understanding of these fields is crucial to the study of curriculum since they have traditionally been and still are considered its foundations. Therefore, this course helps students draw implications of foundations of curriculum development with a special reference to school curriculum in Nepal.

2. General Objectives

The general objectives of this course are as follows.

- To make the students cognizant about the issues of curriculum and the roles of curriculum specialists.
- To acquaint the students with the philosophical, psychological, social and knowledge foundations of curriculum.
- To make students able to draw implication of foundations on curriculum panning/development.
- To make students able to analyze Nepalese school curriculum with reference to various foundations.

3. Course Outlines

Specific objectives	Contents
<ul style="list-style-type: none">● Identify and analyze the different conceptions of curriculum● Discuss the roles of curriculum specialists and relation between the roles and their knowledge.	<p style="text-align: right;">(6)</p> <p>Unit 1: Conceptualizing Curriculum and curriculum specialists (6)</p> <p>1.1 Academic, social reconstructionist, humanistic, technological and cognitive processes</p> <p>1.2 strengths, weakness, comparison among conceptions and explore how different conceptions reflects in Nepali school curriculum.</p> <p>1.3 Curriculum specialists: their roles and knowledge</p>

<ul style="list-style-type: none"> • State types of philosophies. • Elucidate the influence of philosophy on curriculum. • Compare and contrast among different general philosophies. • Draw implications of different educational philosophies on curriculum. • Identify philosophical issues that need to be considered in framing a curriculum. • Analyze the Nepalese curriculum with reference to the educational philosophies. • Trace the trends of philosophical emphasis given by curriculum in Nepal. 	<p>Unit 2: Philosophical foundations (10 hours)</p> <p>2.1 Concept of philosophy</p> <p>2.2 Influence of philosophy on curriculum:</p> <p>2.3 General philosophies: Idealism, Naturalism, Realism and Pragmatism and their influence on curriculum</p> <p>2.4 Educational Philosophies</p> <p>2.1.1 Nature of educational philosophies</p> <p>2.1.2 Types of educational philosophies:</p> <ul style="list-style-type: none"> • Knowledge based philosophies: Perennialism and essentialism. • Progressivism. • Reconstructionism. • existentialism <p>(Major premises of these philosophies and their implications to curriculum)</p>
<ul style="list-style-type: none"> • Describe the importance of psychology-basic behaviors and needs-in the field of curriculum. • Illustrate the influence of different learning psychology on curriculum activities. • Identify particular contemporary psychological issues that should be considered while framing a curriculum. • Suggest curricular measures to address the need of children having atypical development patterns 	<p>Unit 3: Psychological foundations (12)</p> <p>3.1 Developmental psychology</p> <p>3.1.1 Human development- nurture, nature, or interaction?</p> <p>3.1.2 Human growth and development and its implications in curriculum processes- development, classroom use and assessment</p> <p>3.2 Learning psychology</p> <p>3.2.1 Behaviourism and its implications on curriculum processes- development, classroom use and assessment.</p> <p>3.2.2 cognitive perspective, (theories of multiple intelligence gestalt theory),</p> <p>3.2.3 constructivism (Jean Piaget, Lev Vygotsky) theories ,- development, classroom use and assessment</p> <p>3.2.4 Humanistic psychology: Maslow's theory of human needs, Rogers' nondirective and therapeutic learning and their implications on curriculum processes- development, classroom use and assessment</p> <p>3.3 Atypical development</p> <p>3.3.1 giftedness, mental retardation, learning disability, behavioral problems)</p>

	<p>and physical impairments) and 3.3.2 their implications in curriculum processes- development, classroom use and assessment</p>
<ul style="list-style-type: none"> • Justify the need of studying society for curriculum development. • Distinguish between Society and culture • Identify the sources of analysis of society. • Explicate the relation between society education and schooling (curriculum). • Explore the Contemporary Nepalese social Patterns and problems. • Examine the different social issues in contemporary Nepali society and culture. • Suggest how curriculum can address the contemporary social problems and issues. • Elucidate the impact of science and technology on society and curriculum. • Examine how culturally induced bias influence the curriculum • Identify the demands of some special interest groups regarding curriculum. • Evaluate the influence of society and culture on curriculum. 	<p>Unit 4: Social foundations (10 hours)</p> <p>4.1 Need of Analysis of society</p> <p>4.1.1Society and culture distinguished. 4.1.2The sources for analysis of society. 4.1.3Culturally induced bias and the curriculum. 4.1.4Relation among society, education and schooling.</p> <p>4.2 Contemporary Nepalese social patterns and problems</p> <p>4.2.1Individualistic Vs. collectivist 4.2.2Monoculture Vs. multicultural 4.2.3Changing economic. 4.2.4Changing family institutions. 4.2.5Changing gender relations. 4.2.6Religion</p> <p>4.3 Impact of science and technology on</p> <p>4.3.1Living conditions. 4.3.2Life expectancy. 4.3.3Culture economic life. 4.3.4Family relations.</p> <p>4.4 Special interest groups working in various dimension of social life: Environmental groups, Substance abuse protection group, Consumer right group, Health groups, Gender and sexual abuse prevention group, Crime prevention group, Animal right group, Child right groups and other.</p>
<ul style="list-style-type: none"> • Explain the reasons for analysis of human knowledge in curriculum development/ planning • Exemplify different categorization of knowledge • Describe the impact of explosion and obsolescence of knowledge on curriculum • Illustrate the implication of knowledge in curriculum processes 	<p>Unit 5: Knowledge as foundations of curriculum (10)</p> <p>5.1 Importance of human knowledge in curriculum development/planning</p> <p>5.2 Conceptions of knowledge (categorization of knowledge)</p> <p>5.2.1Disciplined and organized knowledge 5.2.2Declarative and Procedural knowledge. 5.2.3Extensive and intensive knowledge.</p>

<ul style="list-style-type: none"> • Elucidate the classification of knowledge 	<p>5.2.4 Formal, Informal knowledge. 5.2.5 Impressionistic knowledge, 5.2.6 Self-regulatory knowledge 5.2.7 Absolutist and fluid knowledge 5.2.8 Types of knowledge being taught in Nepali schools.</p> <p>5.3 Taxonomy of learning:</p> <p>5.3.1 Cognitive 5.3.2 Affective and 5.3.3 Psychomotor learning.</p> <p>5.4 Explosion and obsolescence of knowledge</p> <p>5.4.1 Causes of knowledge explosion and obsolescence. 5.4.2 Impact on society and on curriculum</p> <p>5.5 Fundamentals of knowledge:</p> <p>5.5.1 content and process, 5.5.2 levels of content and their functions, unique contribution of school subject, 5.5.3 the scope of content, 5.5.4 the sequence of learning, 5.5.5 Integration of knowledge. 5.5.6 Implications on curriculum processes-development, classroom use and assessment</p>
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Note: The figures in the parentheses indicate the approximate teaching hours for the respective units.

4. Instructional Techniques

The instructional technique will be as follows:

4.1 General instructional Techniques

- Lecture with discussion
- Demonstration
- Home assignment and self study

4.2 Specific Instructional Techniques

Unit	Activity and Instructional Techniques
I	Students will observe the school level classes and identify what conception of curriculum do the teaching in classroom reflects and report their findings in the classroom for discussion.
II	Project work on school level curriculum of Nepal and analyze the philosophy reflected there in. Paper will be presented in the classroom for discussion/seminar
III	Students in group will visit schools where normal children study. The students will observe the classroom and explore learning theories the teachers apply in

	teaching.
IV	Students will analyze the nature of Nepalese society and cultures and explore the way to address the needs of society through the curriculum. They will prepare report and present in the classroom for discussion.
V	Students , in groups, will observe different places ,organization, schools, and will discuss with the persons, staffs, teachers, on the changing nature of knowledge and try to understand the impact of new knowledge on their lives, working patterns teaching methods and so on.

5. Evaluation

5.1 Internal Evaluation 40%

Internal Evaluation will be conducted by course teacher based on following activities.

1) Attendance and participation	10
2) First assignment/book review/written assignment/quizzes	10
3) Second assignment/paper writing and or presentation	10
4) <u>Third assessment/ written test (1 or two)</u>	<u>10</u>
Total	40 points

5.2 External Evaluation (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

1) Objective type question (Multiple choice questions 10x1)	10
2) Short answer questions (6 questions x 5)	30
3) <u>Long answer questions (2 questions x 10)</u>	<u>20</u>
Total	60

6. Recommended Books and references

Recommended Books

- Adhikari, R. and Ghimire, H. (2067 BS). *Society and Culture in Nepal*. Kathmandu : Bidhyarthi Pustak Bhandar . (Unit IV)
- Ornstein, A. C., & Hunkins, F. P.(2004). *Curriculum: Foundations, Principles and Issues*. 2nd ed.. Boston : Allyn and Bacon. (Unit I,II, III, IV, V)
- Pinar, W. F., Reynolds, William S., & Taubman, P. M. (1996).*Understanding Curriculum*. New York: Peter Lang Publishing Inc. (Unit I)
- Sowell, E. J. (1996).*Curriculum: An Integrative Introduction* .New Jersey: Prentice Hall, Inc. (Unit II)
- Taba H. (1962). *Curriculum development*. New York: Harcourt, Brace & World (Unit III, IV, V)
- <http://www.photius.com/countries/nepal/society/> (Unit IV)
- Zais, Robert S. (1976). *Curriculum: Principles and foundations*. New York: Harper & Row , Publishers (Unit IV)

References

- Connelly, F.M. (2008). *The SAGE handbook of curriculum & instruction*. New Delhi : Sage Publication.
- Kelly, A. V. (2004). *The curriculum: theory and practice*. New Delhi: SAGE Publications (Unit V)
- Marsh, C. J., & Willis, G.(1999). *Curriculum: Alternative Approaches, Ongoing Issues*. New Jersey: Prentice Hall, Inc.
- Print Murray (1993). Curriculum development and design. New South Wales .Allen & Unwin Pty. Ltd (Unit IV)
- Schiro, M.S. (2008). *Curriculum theory: Conflicting visions and enduring concerns*. California: Sage Publication.
- Wiles, J. & Bondi, J. (1993). *Curriculum development: A guide to practice*. (4th edition). New York: Macmillan Publishing Co. (Unit II)

CE Ed. 516 : Program Evaluation

Course No.: CE Ed. 516

Nature of course: Theoretic

Level: M. Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Introduction

This course is designed for those students who intend to specialize Curriculum and Evaluation in Master's Degree in Education. The course deals with introduction to program evaluation, theories and designs of evaluation, planning, conducting and reporting of program evaluation. Hence, the course aims to enable students in planning and preparing evaluation study of an educational program.

2. General Objectives

The general objectives of this course are as follows:

- To acquaint the students with concepts of program evaluation.
- To familiarize the students with major aspects of program evaluation in education.
- To familiarize the students with various evaluation theories.
- To provide the students with a deeper understanding of various evaluation designs.
- To make the students able to prepare a proposal for educational program evaluation.

3. Course Outlines

Specific Objectives	Contents
<ul style="list-style-type: none">• Introduce program evaluation with its key concepts, purposes and types• Describe various aspects of program evaluation• Present examples of existing evaluation practices• Discuss critically the issues in program evaluation	<p>Unit I: Introduction to program evaluation (9)</p> <p>1.1 Key concepts, purposes and types 1.2 Aspects of evaluation 1.2.1 Needs assessment 1.2.2 Process evaluation 1.2.3 Outcome evaluation 1.2.4 Economic evaluation 1.2.5 Meta-evaluation 1.3 Issues in program evaluation</p>
<ul style="list-style-type: none">• Explain various paradigms, branches, theories and models of evaluation	<p>Unit II: Theories of evaluation (9)</p> <p>2.1 Post-positivism and method branch 2.1.1 Objectives-oriented approach to evaluation 2.2 Constructivism and values branch 2.2.1 Goal free evaluation model 2.2.2 Responsive evaluation model 2.3 Pragmatism and use branch 2.3.1 CIPP model 2.4 Transformative paradigm and social justice branch 2.4.1 Rights-based approach to evaluation</p>
3 Describe various evaluation	<p>Unit III: Evaluation designs (9)</p>

<p>designs</p> <p>4 Explain validity of evaluation designs from quantitative and qualitative perspectives</p> <p>5 Identify uses of these designs</p>	<p>3.1 Evaluation designs</p> <p>3.1.1 Experimental designs</p> <p>3.1.2 Survey designs</p> <p>3.1.3 Naturalistic designs</p> <p>3.2 Validity of evaluation designs</p> <p>3.3 Uses of evaluation designs</p>
<p>4 Describe planning procedures of program evaluation</p> <p>5 Develop a conceptual framework for program evaluation</p> <p>6 Discuss major strengths and weaknesses of various educational programs in the context of Nepal</p> <p>7 Prepare a proposal for evaluating educational program</p>	<p>Unit IV: Planning program evaluation (12)</p> <p>4.1 Planning procedures</p> <p>4.1.1 Choosing the goals and setting the boundaries</p> <p>4.1.2 Specification of indicators and approaches</p> <p>4.1.3 Addressing issues and maintaining standards</p> <p>4.2 Preparing proposal for program evaluation</p> <p>4.2.1 Review of program evaluation reports</p> <p>4.2.2 Selecting the problem</p> <p>4.2.3 Writing objectives, questions, rationale and limitations</p> <p>4.2.4 Conceptualizing the evaluation study</p>
<p>5 Discuss critically the strengths and weaknesses of a variety of program evaluation tools and techniques</p> <p>6 Explain procedures of analyzing and interpreting the data</p> <p>7 Explain the importance and ways of reporting of findings</p>	<p>Unit V. Data collection, analysis and reporting (9)</p> <p>5.1 Study tools: Merits, demerits and development procedures</p> <p>5.1.1 Questionnaire</p> <p>5.1.2 Interview schedule</p> <p>5.1.3 Observation form (check list, rating scale)</p> <p>5.2 Data analysis and interpretation from quantitative and qualitative perspectives</p> <p>5.3 Reporting and utilization of findings</p>

Note: The figures in the parentheses indicate the approximate teaching hours for the respective units

4. Instructional Techniques

4.1 General Techniques

- Lecture and discussion
- Demonstration
- Self-study
- Home assignment

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
I	<ul style="list-style-type: none"> • Group discussion on existing evaluation practices • Group discussion in the classroom on issues in program evaluation

II	<ul style="list-style-type: none"> • Group assignment to prepare a group report on theories of evaluation • Presentation and group discussion in the classroom
III	<ul style="list-style-type: none"> • The groups will make a design for evaluating educational entity and present in the class for discussion.
IV	<ul style="list-style-type: none"> • Individual/group assignment on preparing a proposal of an evaluation study
V	<ul style="list-style-type: none"> • Students individually or in group will prepare various tools such as interview, rating scales. These with these tools they will collect data information from various persons and analyse and interpret the information collected.

5. Evaluation

5.1 Internal Evaluation 40%

Internal Evaluation will be conducted by course teacher based on following activities.

5) Attendance	5 marks
6) Participation	5 marks
7) First assignment on book review/written assignment	10 marks
8) Second assignment/paper writing and/or presentation	10 marks
9) <u>Third assessment/ one written test</u>	<u>10 marks</u>
Total	40 marks

5.2 External Evaluation (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

1) Objective type question (Multiple Choice Questions 10x1)	10 marks
2) Short answer questions (6 questions with 2 or questions x 5)	30 marks
3) <u>Long answer questions (2 questions with 1 or question x 10)</u>	<u>20 marks</u>
Total	60 marks

6. Recommended Books and References

6.1 Recommended books

- Alkin, M. C. and Christie, C. A. (2004). *An evaluation theory tree*. In Marvin .C. Alkin (ed.), *Evaluation roots: Tracing theorists' views and influences*, pp. 12-65. Sage: New Delhi.
- McDavid, J.C. and Hawthorn, L.R.L. (2006). *Program evaluation and performance measurement: An introduction to practice*. New Delhi: Sage.
- Mertens, D. M. (2015). *Philosophical assumptions and program evaluation*. Available at spaziofilosofico.it/wp-content/uploads/2015/02/Mertens1.pdf
- Mertens, D. M. and Wilson, A. T. (2018). *Program evaluation theory and practice: A comprehensive guide (2nd ed.)*. The Guilford Press: New York. Retrieved

from www.unicef.org/evaluation/index_49082.html.

Michael, W.B. and Benson, J (1995). *Evolution of evaluation design*. In T. Husen, and T. Postlethwaite (eds.). The international encyclopedia of education (2nded.). Vol. 2. pp. 2079-2089. UK: Pergamon.

W. K. Kellogg Foundation (2017). *The step by step evaluation guide: Evaluation handbook*.

Available at <https://www.wkkf.org/resource-directory/resource/2010/w-k-kellogg-foundation-evaluation-handbook>

Worthen, B.R. and Sanders, J.R. (1987). *Educational evaluation: Alternative approaches and practical guidelines*. USA: Longman.

6.2. References

Best, J.W. & Kahn, J.V. (2001). *Research in education*. 7thed. New Delhi: Prentice Hall.

Guba, E.G. & Lincoln, Y.S. (1981). *Effective evaluation: Improving the usefulness of evaluation results through responsive and naturalistic approaches*. Washington: Jossey- Bass.

Lewy, A. (ed.) (1977). *Handbook of curriculum evaluation*. Paris: II EP/UNESCO.

Ornstein, A.C. and Hunkins, F. (2004). *Curriculum foundations, principles and theories*. 2nd ed.. Boston: Allyn and Bacon.

Patton. M.Q. (1990). *Qualitative evaluation research methods*. 2nded. New Delhi: Sage.

Popham, W.J. (1975). *Educational evaluation*. New Jersey: Prentice Hall.

Posavac, E.J. & Carey, R.G. (1989). *Program evaluation: Methods and case studies*. USA: Parkside Associates.

Rossi, P.H. & Freeman, H.E. (1989). *Evaluation: A systematic approach*. 4thed. New Delhi: Sage.

Worthen, B.R. & Sanders, J.R. (1973). *Educational evaluation: Theory and practice*. Belmont, C.A.: Wadsworth.

CE Ed. 517 : Psychological Testing

Course No.: CE Ed. 517
Level: M. Ed.
Semester: First

Nature of course: Theoretic
Credit Hours: 3
Teaching Hours: 48

1. Course Introduction

This course aims to make students familiarize with various psychological tests and enables them to review the procedure for designing and validating psychological tests. The course helps students develop critical understanding of procedures involved in designing and implementing of different psychological tests. The students will have the opportunity to review the historical development of psychological test as well as to get acquainted with the intelligent, aptitude, attitude, interest, and personality tests. Moreover, this course helps students develop critical insights into the current trends in psychological testing.

2. General Objectives

The general objectives of this course are as follows:

- to acquaint the students with major psychological tests in use.
- to enable the students to develop skills of developing a psychological test/scale.
- to equip the students with skills in assessing interest, attitude and aptitude.
- to acquaint the students with the current trends in test.
- To provide the students with a better understanding assessment of interest and attitude.

3. Course Outlines

Specific Objectives	Contents
<ul style="list-style-type: none">• Describe concept of psychological test/measurement• Explain development of psychological test• Differentiate types of psychological tests.• Identify and explain the characteristics and assumptions of psychological tests.• Explain the uses of psychological tests	Unit 1: Development of Psychological Test (6) <ol style="list-style-type: none">1. Concept of psychological test2. Development of psychological test - Early emphasis Contributions of Galton, Catell, and Binet3. Different types of psychological tests (BRIEF REVIEW)4. Characteristics and assumptions of psychological tests5. Uses AND FUNCTIONS of psychological tests
<ul style="list-style-type: none">• Elaborate the concept of intelligence.• Explain the Spearman's, Thurston's, Gardner's and Sternberg's theories of intelligence.• Describe various types of individual, broad-range and group intelligence tests and	Unit 2 Intelligence Testing (8) <ol style="list-style-type: none">1. CONCEPT of intelligence2. Theories of Intelligence<ul style="list-style-type: none">2.1 Spearman's Two factor theory2.2 Thurstone's Primary mental abilities2.3 Gardner's Theory of multiple intelligence2.4 Sternberg's triarchic theory of intelligence3. Individual intelligence tests<ul style="list-style-type: none">3.1 STANFORD- BINET SCALES3.2 WECHSLER SCALES

synthesize use of each of them	3.3 KAUFMAN SCALES
<ul style="list-style-type: none"> • Describe concept of personality • Explain the trait conceptions of personality. • Describe the hypothesis of projective techniques. • Describe various projective techniques. • Briefly present CPI and NEO personality inventory. 	Unit 3: Personality Tests (10) <ol style="list-style-type: none"> 1. Concept of personality 2. Trait conceptions of Personality <ol style="list-style-type: none"> 2.1 Cattell's factor analytic trait theory 2.2 Eysenck's trait dimensional theory 2.3 The five factor model of personality 3. Projective techniques – Rorschach / TAT /TEMAS 4. Overview of California Psychological Inventory (CPI) and NEO Personality Inventory 5. PERSONALITY ASSESSMENT (INVESTIGATION, COUNSELING AND REPORT WRITING)
<ul style="list-style-type: none"> • Describe the concept and characteristics of aptitude test • State Iowa Tests of Basic Skills • Explain predicting college performance based on various aptitude tests. 	Unit 4: Aptitude tests (6) <ol style="list-style-type: none"> 1. Concept and characteristics of aptitude test. 2. Brief review of Iowa Tests of Basic Skills (ITBS) 3. Predicting college performance – Overview of SAT- I & II, GRE, ACT, MCAT, TOFEL and IELTS.
<ul style="list-style-type: none"> • Describe the concept of interest and attitude. • Identify the foundations of interest measurement. • Identify the factors affecting validity of interest inventories. • Explain approaches to assessing attitude and interest. • Describe various types of interest and attitude tests • Elaborate and evaluate use of test in behavioral and career counseling • Develop a sample of scale 	Unit 5: Testing for Counseling (12) <ol style="list-style-type: none"> 1. Concept of interest and attitude 2. Validity AND Foundations of interest inventories 3. Approaches to assessment of attitudes and Interest Inventory 4. Brief review of Strong Interest Inventory (SII) 5. Attitude measurement 6. Multiple Aptitude Test Batteries- brief review of DAT and GATB 7. Behavioral counseling and career counseling (CASE STUDY) 8. Development of scale (any one interest or attitude AND PERSONALITY ASSESSMENT) <ul style="list-style-type: none"> • Defining the trait • State the trait in operational term. • Developing the tool to measure the trait
<ul style="list-style-type: none"> • Explain major contexts of use of tests • Analyze various issues of testing • Narrate and evaluate current trends of testing • Analyze possible trends of testing and suggest betterments of testing 	Unit 6: Issues and Trends of Testing (6) <ol style="list-style-type: none"> 1. Major contexts of current test use – <ul style="list-style-type: none"> • Educational • Occupational, and • Clinical and counseling 2. Issues IN testing <ul style="list-style-type: none"> • Professional • Moral OR ETHICAL • Social issues 3. Current trends <ul style="list-style-type: none"> Proliferation of new tests • Higher standards • Improved technology and increasing

	<p>objectivity</p> <ul style="list-style-type: none"> • Greater public awareness and influence • Computerization of test AND <p>EVALUATION OF COMPUTER BASED TEST</p> <ul style="list-style-type: none"> • Testing on the internet. <p>4. Future trends</p> <ul style="list-style-type: none"> • future prospects • New and improved tests • Controversy, disagreement and change, and • Innovations in testing.
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Note: The figures in the parenthesis indicate the approximate teaching hours for the respective unit.

4. Instructional Techniques

4.1 General Techniques

- Lecture with discussion
- Demonstration
- Home assignment and self study

4.2 Specific Instructional Techniques

Unit	Activity and Instructional Techniques
	One book review from the list of recommended books related to the topics of the curriculum.
II	Self study by the students and paper presentation in the class
V	Students should develop a sample scale for the measurement of interest and/or attitude OR CASE STUDY FOR COUNSELING ONE STUDENT.

5. Evaluation

5.1 Internal Evaluation 40%

Internal Evaluation will be conducted by course teacher based on following activities.

10) Attendance and participation	10
11) First assignment/book review/written assignment/quizzes	10
12) Second assignment/paper writing and or presentation	10
13) <u>Third assessment/ written test (1 or two)</u>	10
Total	40

5.2 External Evaluation (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

1) Objective type question (Multiple choice 10x1)	10
2) Short answer questions (6 questions with two optional questions x 5)	30
3) <u>Long answer questions (2 questions with one optional questions x 10)</u>	20

20

Total	60
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6. Recommended Books

Anastasi, A. & Urbina, S.(1997).*Psychological testing* (7th ed.). New Delhi:Pearson Education Asia.**(For Units 1, 2 and 6).**

Kaplan, R. M. &. Saccuzzo, D. P. (2001). *Psychological testing*,(5th ed.).Singapore: Wadsworth Thomson Learning. **(For Units 3, 4, 5 and 6).**

Gregory, R. J. (2006). *Psychological testing: History, principles and applications* (4th ed.). New Delhi: Dorling Kindersley (India) Pvt. Ltd. (**For Units 1, 2, 3, 4 and 5**).

Aiken, L. R. & Grot-Marnat, G. (2006). *Psychological testing and assessment* (12th ed.). New Delhi: Pearson Education Asia. (**For Units 2, 3 and 5**).

7. Reference Books

Theresa, J. B. K. (2005). *Psychological testing*, New Delhi: Vistaar Publications.

Freeman, F. S. (2006), *Theory and practice of psychological testing*, Delhi: Surjeet publications (Indian Print)

Nunnally, J. C. (1978), *Psychometric theory*, New Delhi: Tata McGraw – Hill Publishing Co. Ltd.,

CE. Ed. 518: Curriculum for Diversity in Education

Course No.: CE. Ed. 518

Nature of course: Theoretical

Level: M. Ed.

Credit Hours: 3

Semester: First

Teaching Hours: 48

1. Course Introduction

This course aims to help students develop a critical understanding of emerging issues, dimensions and challenges of diversity in education. In addition, the key vector of cultural diversity, and approaches to and models of diversity are also the focus of the course. This course also aims to help students develop democratic vision in relation to the diversity of the country as well as to enable them to explore and utilize the ways and strategies to tackle the issues and problems associated with the diversity in classrooms and schools.

2. General Objectives

The general objectives of this course are as follows:

- To make the students cognizant of emerging issues, dimensions and challenges of diversity in education
- To acquaint the students with the education as one of the key vectors that facilitates cultural diversity.
- To make students able to draw implication of dimensions of diversity and key vectors on curriculum.
- To make students able to design curriculum so as to address the issues relating to diversity.

3. Specific Objective and Content

Specific Objectives	Contents
<ul style="list-style-type: none">● Conceptualize the nature and meaning of diversity● Assess the essence and dimensions of diversity in Nepalese context● Explore the issues and challenges in diversity dimensions for curricular implications.● Illustrate the ways diversity for effective achievement.	<p>Unit I: Understanding Diversity in Education (7)</p> <p>1.1 Nature and meaning of diversity 1.2 Understanding essence of diversity in education 1.3 Dimensions of diversity in education (with reference to Nepal) 1.4 Issues and challenges in diversity dimensions for curricular implications. 1.5 Ways for managing diversity for effective achievement.</p> <p>1.5.1 Awareness 1.5.2 Integration of diversity issue on school planning and procedures 1.5.3 School culture for valuing diversity. 1.5.4 Diversity training</p>

	1.5.5 Community involvement.
<ul style="list-style-type: none"> Describe the different vectors that facilitate cultural diversity 	<p>Unit II: Education as Key Vector of Diversity (8)</p> <p>2.1 The relevance of educational methods and contents 2.2 Learning societies and right to education 2.3 Participatory learning and intercultural competencies</p>
<ul style="list-style-type: none"> Explore the factors influencing the achievement of culturally diverse students. Suggest ways for handling factors affecting achievement of culturally diverse students. 	<p>Unit III: Factors Influencing the Achievement of Culturally Diverse Students (10)</p> <p>3.1 School related factors</p> <p>3.1.1 Classroom environment 3.1.2 School rules 3.1.3 School environment 3.1.4 Facilities in the school.</p> <p>3.2 Home related factors</p> <p>3.2.1 Parental support 3.2.2 Home school environment mismatch 3.2.3 Socio-economic status of the students 3.2.4 Parental education level.</p> <p>3.3 Teacher related factors</p> <p>3.3.1 Teacher expectation 3.3.2 Teachers' belief and 3.3.3 Knowledge, teacher quality.</p> <p>3.4 Student related factors: Students' learning style</p> <p>3.5 Ways of addressing factors affecting achievement of culturally diverse students.</p>
<ul style="list-style-type: none"> Explain and assess the different models that can be adopted for incorporating diversity Suggest how the model can be adopted in Nepalese situation 	<p>Unit IV: Models for Incorporating Diversity (9)</p> <p>5.1 Assimilationist model 5.2 Differentialist model 5.3 Multiculturalist model 5.4 Adoption of model in Nepalese context</p>

<ul style="list-style-type: none"> • Explore different strategies for responding to the needs of diverse students and accommodating diversity in education • Identify and assess the strategies adopted in Nepal to address diversity. 	<p>Unit V: Strategies for Accommodating Diversity in Education</p> <p>(14)</p> <p>6.1 Curriculum transformation approach 6.2 Classroom management 6.3 Teaching approach 6.4 Bilingual and multilingual education 6.5 School reform 6.6 Diversity benchmark 6.7 Teacher education based on diversity 6.8 Local and school-based curriculum 6.9 Teacher education based on diversity 6.10 Curriculum strategies adopted in Nepal to address diversity</p>
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4. Instructional Techniques

4.1 General Techniques

- Lecture with discussion
- Demonstration
- Home assignment and self-study
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4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
I	<ul style="list-style-type: none"> • Divide the students into 5 groups • Let each group of students study (a) Curriculum as subjects and subject matter, (b) Curriculum as experiences, (c) Curriculum as objectives, (d) Curriculum as a plan, (e) Curriculum as a system • Let the groups prepare 2/3 page report • Report presentation in the classroom followed by discussion
II	<ul style="list-style-type: none"> • Divide the students into 5 groups • Let each group of students study various aspects of Foundations of curriculum planning : (a) Social forces, (b) Treatment of knowledge, (c) Human growth and development, (d) Learning as a process, and (e) Technology • Let the groups prepare 2/3 page report • Report presentation in the classroom followed by discussion
III	<ul style="list-style-type: none"> • Divide the students into 4 groups • Let each group of students study the factors influencing the achievement of culturally diverse students <ol style="list-style-type: none"> 1. School related factors 2. Home related factors 3. Teacher related factors

	<p>4. Student related factors: Students' learning style</p> <ul style="list-style-type: none"> • Let each group of students prepare the report • Report presentation in the classroom followed by discussion
IV	<ul style="list-style-type: none"> • Divide the students into three groups Adoption of model in Nepalese context • Let each group of students study the various models of incorporating diversity <ol style="list-style-type: none"> 1. Assimilationist model 2. Differentialist model 3. Multiculturalist model • Let each group of students prepare the report • Presentation in the classroom followed by discussion
V	<ul style="list-style-type: none"> • Assign individual or group tasks to prepare comprehensive reports on strategies for accommodating diversity • Let the student present their report in the classroom • Let the students study the existing curricular documents and critically present curriculum strategies adopted in Nepal to respond diversity

5. Evaluation

5.1 Internal Evaluation 40%

Internal Evaluation will be conducted by course teacher based on following activities.

14) Attendance and participation	10
15) First assignment/book review/written assignment/quizzes	10
16) Second assignment/paper writing and or presentation	10
17) <u>Third assessment/ written test (1 or two)</u>	<u>10</u>
Total	40

5.2 External Evaluation (Final Examination) 60%

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.

1) Objective type question (Multiple choice 10x1)	10
2) Short answer questions (6 questions x 5 points)	30
3) <u>Long answer questions (2 questions x 10 points)</u>	<u>20</u>
Total	60

6. Recommended and Reference Books

Recommended Books

Banks, J.A. (2008). *An introduction to multicultural education*. Boston, M.A.: Allyn and Bacon.

Beaudoin, J. P. (2013). *Introduction to inclusive teaching practices*. Ottawa: Centre for University

Teaching, University of Ottawa.

- Corson, D. (1998) *Changing education for diversity*. Buckingham: Open University Press
- Gibson, M.A. (1984). Approach to multicultural education in the United States: Some conception and assumptions. *Journal of Anthropology and Education Quarterly*, Vol. 15, No 1. Blackwell Publishing on Behalf of the American Anthropological Association.
- UNESCO (2005). *Guidelines for inclusion: Ensuring access to education for all*. Paris: Author

References

- Banks, J. A. (2006). *Cultural diversity and education: Foundations, curriculum and teaching*. Boston, MA: Allyn and Bacon
- Baska, J.V.T. (2004). *Curriculum for gifted and talented students*. California: Crown Press
- UNESCO. (2009). *Investing in cultural diversity and intercultural dialogue*. Paris: Author
- Watson, C.W. (2002). *Multiculturalism*. New Delhi: Viva Books
- Woolfolk, A. (2004). *Educational psychology* (9thed.) New Delhi: Pearson Education

Economics Education

- i. Eco. Ed. 515: Micro-economics
- ii. Eco. Ed. 516: Economics of Development and Planning
- iii. Eco. Ed. 517: Statistics for Economics Education
- iv. Eco. Ed. 518: History of Economic Thought

1. Course Introduction:

This course is designed for students specializing in Economics Education on Master's Degree in Education in Tribhuvan University. It contains theory as well as the application of microeconomics. This course deals with the theory of consumer behavior, theory of production, theory of cost, revenue and supply, theory of product pricing, and theory of factor pricing. Moreover, it aims to provide knowledge of microeconomics and its application.

2. General Objectives

The general objectives of this course are as follows:

- To develop students' analysis skills on the approaches of cardinal and ordinal utility analysis under the theory of consumer's behaviors.
- To enable the students to analyze the theories of production.
- To empower the students to explain the theories of cost and revenue.
- To acquaint the students with the knowledge of the product pricing under perfect competition, monopoly, discriminating monopoly, monopolistic competition, and oligopoly.
- To familiarize the students with the knowledge of the factor pricing under perfect competition and imperfect competition market.

3. Course Outline

Specific objectives	Contents
<ul style="list-style-type: none">• Explain the consumer's equilibrium in one and two commodity cases under cardinal utility analysis.• Explain features of indifference curve analysis.• Enable students to draw the price/budget line• Explain the consumer's equilibrium under indifference curve.• Analyze price, income, and substitution effects.• Derive Engle curve.• Criticize indifference curves.• Examine the application of indifference curves.• Explain revealed preference theory and criticize it.• Explain utility theories of Neumann-	<p>Unit I: Theory of Consumer's Behavior (12)</p> <p>1.1 Cardinal utility approach</p> <p> 1.1.1 Consumer's equilibrium (one and two commodity models)</p> <p>1.2 Indifference curve approach: features and price/budget line</p> <p> 1.2.1 Consumer's equilibrium</p> <p> 1.2.2 Price effect, income effect (Derivation of Engle curve) and substitution effects (Hicks and Slutsky method)</p> <p> 1.2.3 Criticisms</p> <p> 1.2.4 Application of indifference curve</p> <p>1.3 Revealed preference theory and its criticism</p> <p>1.4 Utility theory under uncertainty</p> <p> 1.4.1 Neumann-Morgenstern method</p> <p> 1.4.2 Friedman- Savage hypothesis</p>

Morgenstern and Friedman- Savage Hypothesis.	
<ul style="list-style-type: none"> Explain short-run, long-run, linear and non-linear production functions. Explain the laws of variable proportion with its stages, features, and causes. Explain the features of Iso-quant. Enable the students to draw the Iso-cost line. Explain the optimum combination of inputs. Explain the law of returns to scale with its stages, features and causes. 	Unit II: Theory of Production (7) <p>2.1 Production function: Short-run, long-run, linear and non-linear</p> <p>2.2 Law of variable proportions (stages, features, and causes)</p> <p>2.3 Iso-quant and its features, Iso-cost line, and optimum combination of inputs</p> <p>2.4 The laws of returns to scale: Stages, features, and causes</p>
<ul style="list-style-type: none"> Derive the short-run cost curves. Derive the long-run cost curves. Analyze theoretical and empirical evidence of the derivation of cost curves. Analyze the economies of scale and economies of scope in production. Derive revenue curves under perfect and imperfect competition market. Explain the relationship between total, average, and marginal revenue curves. Derive total, average, and marginal revenue curves under perfect and imperfect competition market. Show the relationship between price elasticity of demand and revenue. 	Unit III: Theory of Cost, Revenue and Supply (7) <p>3.1 Theory of cost</p> <p>3.1.1 Derivation of short-run and long-run cost curves (Traditional theory)</p> <p>3.1.2 Modern theory of cost</p> <p>3.1.3 Concept of economies of scale and economies of scope</p> <p>3.2 Theory of revenue</p> <p>3.2.1 Derivation of total revenue, average revenue, and marginal revenue curves under perfect and imperfect competition market</p> <p>3.2.2 Relationship between price elasticity of demand and revenue</p>
<ul style="list-style-type: none"> Explain the monopolist's equilibrium under multi-plant firm. Explain regulation of monopoly by the government through the price control, lump-sum tax, and price per unit. Examine the conditions and degree of discriminating monopoly. Explain the short-run and long-run equilibrium of firm under monopolistic competition. Explain the Chamberlin's group equilibrium under price competition case. Define non-collusive and collusive oligopoly market. Analyze non-collusive oligopoly market models by Cournot model, Edgeworth model and Kinked demand curve model. Analyze collusive oligopoly market models by Centralized Cartel and Price Leadership Model. Introduce the concept of monopsony market. Explain the features of monopsony market. 	Unit IV: Theory of Product Pricing (15) <p>4.1 Monopoly market</p> <p>4.1.1 Monopolist's equilibrium under multi-plant firm</p> <p>4.1.2 Regulation of monopoly (price control, lump-sum tax, and price per unit)</p> <p>4.1.3 Discriminating monopoly: conditions and degrees</p> <p>4.2 Monopolistic competition market</p> <p>4.2.1 Equilibrium of the firm in short-run and long-run and Chamberlin's group equilibrium (price competition)</p> <p>4.3 Oligopoly market:</p> <p>4.3.1 Non-collusive oligopoly: Cournot model, Edgeworth model, Kinked demand curve model,</p> <p>4.3.2 Collusive oligopoly: Cartel model (centralized cartel and price leadership model)</p> <p>4.4 Monopsony market: Concept and features</p>

<ul style="list-style-type: none"> • Explain demand and supply of factor in perfect competition under one and more goods. • Determine factor price in perfect and imperfect competition market. 	<p>Unit V: Theory of Factor Pricing (7)</p> <p>5.1 Concept of factor pricing 5.2 Demand and supply of factors in perfect competition under one and more goods 5.3 Demand and supply of factors in imperfect competition 5.4 Determination of factor price in perfect and imperfect competition market.</p>
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Note: The figures within parentheses indicate the approximate teaching hours allocated to respective unit.

4. Instructional Techniques

Instructional techniques of this course are divided into general and specific techniques.

4.1 General Techniques

The teacher can apply the following general instructional techniques as required and as per the nature of the content:

- a. Lecture and illustration
- b. Discussion and demonstration
- c. Individual and group work/project method
- d. Report writing and classroom presentation
- e. Inquiry and question answer
- f. Case study

4.2 Specific Techniques

Unit	Activity and instructional techniques
I	<ul style="list-style-type: none"> • Review of materials on the indifference curve analysis by the students, group presentation in class, and group discussion. • Collect the information about the per unit price of the commodity, individual income of the consumer/person and utility, tabulate the utilities, and calculate the average and marginal utility by the group work and inquire method. At last, present the conclusion of the group work in the class.
II	<ul style="list-style-type: none"> • Prepare a report through a field study about the short-run production quantity of the commodities of local industries and organize the data through the organization tools and plot the figure of production and compare with the reading materials' figures. At last, present the findings of the study in the class to take the suggestion through their peer and subject teacher.
III	<ul style="list-style-type: none"> • Collect information about the cost and revenue of any local projects, tabulate and plot the information in figure, calculate the total average, and marginal cost and revenue.
IV	<ul style="list-style-type: none"> • Review materials on the indifference curve analysis by the students and group presentation on the classroom and have group discussion about the content.
V	<ul style="list-style-type: none"> • Collect information about factor of production through the market for various years and show the equilibrium and change in market equilibrium. • Find the process of factor pricing in the Nepalese market and present it in the

	class.
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5. Evaluation Scheme

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment (Paper submission)	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) 60 %

Examination Division, Office of the Dean the Faculty of Education will conduct final examination at the end of semester.

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective type questions (Multiple choice)	10×1	10
2.	Short answer questions (6 questions with TWO alternatives within any two questions \times 5 points)	6×5	30
2.	Long answer questions (2 questions with ONE alternative within any one question \times 10 points)	2×10	20

6. Recommended and Reference Books

6.1 Recommended Books

Ahuja, H.L. (2011). *Advance economic theory- Micro economic analysis* (17th ed.). New Delhi: S Chand and Company Ltd (For Unit 1, 2, 4 and 5)

Dwivedi, D.N. (2012). *Microeconomics - Theory and application* (2nd ed.), New Delhi: Pearson Publication (For Unit 1 – 5).

Dewett, K.K. & Navalur, M.H. (2010). *Modern economic theory* (23rd ed.). New Delhi: S Chand and Company Ltd. (For Unit 1 – 5).

Jhingan, M. L. (20011). *Advance economic theory*. New Delhi: Vrinda Publications (P) Ltd. (For Unit 1, 3, 4 and 5)

Mankiw, N. G., (2013). *Principle of Economics* (6th ed). New Delhi: Thompson Publication. (For Unit 3 and 4)

Salvatore, D. (2010). *Principles of microeconomic* (5th ed. International Version, 3rd impression). New Delhi: Oxford University Press. (For Unit 2, 3 and 4).

Koutsoyiannis, A. (1979). *Modern microeconomics* (2nd ed.). London: Macmillan Press. (For unit all).

6.2 References

- Baumol, W. J. (1999). *Economic theory and operations analysis* (4th ed.). New Delhi: Prentice Hall of India.
- Chamberlin, E.H. (1962). *Theory of monopolistic competition*. USA: Oxford University Press.
- Henderson, J. M. & Quant, R. E. (2003). *Microeconomic theory: A mathematical approach*. (3rd ed.). New Delhi: McGraw Hill.
- Nagpal, C.S. & Mittle, C.S. (Eds.). (1993). *Price theory*. New Delhi: Anmol Publication.
- Nicolson, W. (1992). *Micro economic theory*. USA: The Dryden Press.
- Pindyck, R.S., Rubinfeld, D.L. & Mehta, P. L. (2013). *Microeconomics* (7th ed.). New Delhi: Pearson Publication
- Stigler, G. (1996). *Theory of price*. (4th ed.). New Delhi: Prentice Hall of India.
- Shiwakoti, D.R. & Paudel, M.R. (2066). *Economic analysis*. Kathmandu: Pinakal Publication.
- S. K. Misra & Puri, V.K. (1990). *Microeconomic: Theory and application*. New Delhi: S. & Chanda.

Eco. Ed. 516: Economics of Development and Planning

Course No. : Eco. Ed. 516

Nature of course: Theoretical

Level: M. Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Introduction:

This course is designed for those students who specialize in Economics Education at Master level. It comprises two parts. Part I deals with economics of development and Part II deals with development planning. Economics of development includes changing concepts and constraints of economic development, theories of economic growth and development, and issues in economic development and part II covers development planning and its tools.

2. Course objectives

The general objectives of this course are as follows:

- To provide the students better understanding of the changing concept of economic development and its characteristics and constraints.
- To acquaint the students with different theories of economic development.
- To enable the students in examining various issues of economic development.
- To orient the students with economic planning in the context of Nepal.
- To acquaint the students with the planning experiences of SAARC countries.
- To impart the students with the knowledge on analysis of the tools of economic planning.

3. Course Outline

Part I: Economics of Development

Specific Objectives	Contents
Explain the concept of economic development with its changing concept. Describe characteristics of developing countries (focusing on structural diversity within commonality). Analyze the constraints of economic development of LDCs in general and particular in Nepal. Describe the indicators and determinants of	Unit I: Characteristics and constraints of Developing Countries (focusing structure diversity within commonality) (14) 1.1 Changing concept of economic development 1.2 Characteristics of developing countries 1.2.1 Economic 1.2.2 Demographic 1.2.3 Technological 1.2.4 Socio- cultural and institutional

<p>economic development in developing countries.</p> <p>Point out the challenges of economic development in LDCs with reference to Nepal.</p>	<p>1.3 Constraints of economic development of developing countries</p> <p>1.3.1 Vicious circle of poverty</p> <p>1.3.2 Agriculture constraints</p> <p>1.3.3 Human resource constraints</p> <p>1.3.4 Foreign exchange constraints</p> <p>1.3.5 Technological constraints</p> <p>1.3.6 Lack of modern enterprise and management strategy</p> <p>1.3.7 Political constraints</p> <p>1.3.8 Intervention constraints</p> <p>1.3.9 Inefficient governance</p> <p>1.4 Indicators of economic development in developing countries</p> <p>1.4.1 Per - Capita income: Nominal and real income</p> <p>1.4.2 Physical Quality of Life Index</p> <p>1.4.3 Basic Need Approach</p> <p>1.4.4 Human Development Index</p> <p>1.4.5 Gross National Happiness</p> <p>1.4.6 Human Poverty Index</p> <p>1.5 Challenges of economic development in LDCs with reference to Nepal</p>
<p>Review of the classical theories of economic development.</p> <p>Explain Linear Stages Theories of economic development focusing on Rostow and Harrod - Domar.</p> <p>Present structural change Models including Lewis's theory and Marxian Theory.</p> <p>Analyze the balanced and unbalanced growth approach.</p> <p>Provide the concept of new growth theory.</p>	<p>Unit II: Theories of Economic Growth and Development (10)</p> <p>2.1 Review of classical theories of economic development (Adam Smith, Ricardo and Malthus)</p> <p>2.2 The linear stages theory (Rostow and Harrod-Domar)</p> <p>2.3 Structural change models (Marxian and Lewis theories with special emphasis of application in LDCs)</p> <p>2.4 Approaches of growth: Balanced vs unbalanced</p> <p>2.5 New (Endogenous) growth theory</p>
<p>Analyze the issues in economic development.</p> <p>Explain the measurement of poverty (FGT approach) unemployment with their extent</p>	<p>Unit III: Issues in Economic Development (7)</p> <p>3.1 Poverty and unemployment: measurement, extent and dimension</p>

<p>and dimension.</p> <p>Analyze income inequality and its relation with economic growth.</p> <p>Examine the relationship among population growth, migration and urbanization trends.</p> <p>Analyze the effectiveness of economic liberalization and privatization policies with reference to Nepal.</p> <p>Evaluate the extent and role of Foreign aid, FDI and economic diplomacy in economic development.</p> <p>Examine the role of transfer of technology and resources in development.</p> <p>Describe demonstration effect.</p>	<p>3.2 Income inequality : Lorenz curve, Gini coefficient; income inequality and economic growth</p> <p>3.3 Population growth, migration and urbanization trends</p> <p>3.4 Economic liberalization and privatization</p> <p>3.5 Foreign aid, FDI and economic diplomacy</p> <p>3.6 Transfer of technology and resources and development</p> <p>3.7 Demonstration effect and development</p>
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Part II: Development Planning

<p>Explain plan formulation processes in federal, province and local level of Nepal.</p> <p>Evaluate the problems of plan implementation and plan failures.</p> <p>Describe the trends in governance and reform</p> <p>Justify the relevancy of development planning in developing countries.</p> <p>Analyze the planning experiences of SAARC countries.</p>	<p>Unit IV: Development Planning (5)</p> <p>4.1 Plan formulation process: Federal, province and local level, with reference to Nepal</p> <p>4.2 Problems of plan implementation and plan failures</p> <p>4.3 Trends in governance and reform</p> <p>4.4 Relevance of development Planning in developing countries</p> <p>4.5 Development planning experiences in SAARC countries</p>
<p>Describe capital output ratio and cost benefit analysis as a tools of economic planning.</p> <p>Analyze financial and economic analysis.</p> <p>Explain shadow price of factors of production.</p> <p>Describe investment criteria.</p> <p>Analyze labour vs capital intensive technique.</p>	<p>Unit V: Tools of Economic Planning (12)</p> <p>5.1 Capital output ratio: Concept and uses in economic planning</p> <p>5.2 Cost benefit analysis: Concepts, calculation and its uses in economic planning</p> <p>5.3 Financial and economic analysis</p> <p>5.4 Shadow price of factors of production</p> <p>5.5 Investment criteria</p>

	<p>5.5.1 Capital turnover criterion</p> <p>5.5.2 Social marginal productivity</p> <p>5.5.3 Re-investment criterion</p> <p>5.6 Choice of techniques: labour vs capital intensive</p>
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Note: The figures in the parentheses indicate the approximate periods for the respective units

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

General Instructional Techniques

- Lecture and Illustration
- Discussion and demonstration
- Question answer

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
1	<p>a. Activity: Fitting Trend line of different with the help of values of different indicators such as per capita income, and explain the causes of the trend line. Instructional Technique: Collection of values of indicators from World Development Indicators (WDI) and Human Development Report (HDR) and fit the trend line.</p> <p>b. Activity: Class room presentation on challenge of economic development of Nepal. Instructional Technique: Prepare a report on challenges of Nepal's economic development.</p>
2	<p>a. Class discussion on classical theories of economic development focusing on Adam Smith, David Ricardo, and Malthus.</p> <p>b. One guest lecture on application of structural change models in the context of Nepal.</p>
3	<p>a. Measurement of poverty by FGT approach with the help of income expenditure data.</p> <p>Class presentation on linkage between migration and urbanization with the help of Census</p>

	data.
	a. Class room discussion on rational and need of economic planning
	a. Project work on CBA of any particular topic. b. Class debate on choice of technique.

Note: Specific Instructional Techniques may or may not require for each of the unit mentioned in course outline

5. Evaluation Scheme

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment (Paper submission)	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) 60 %

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective type question (Multiple choice)	10×1	10
2.	Short answer questions (6 questions with TWO alternatives within any two questions \times 5 points)	6×5	30
2.	Long answer questions (2 questions with ONE alternative within any one question \times 10 points)	2×10	20

6. Recommended Books

Todaro, M.P. and Smith, S.C. (2012). *Economic Development, (Tenth edition)*. New Delhi: Pearson Education Asia: Addison- Wesley. (For Unit I, IV)

Mishra, S. K. and Puri (2010). *Economics of Development and Planning*. New Delhi: Konark Publishers (For Unit II)

Ray, D. R. (2004). *Development economics*. New Delhi: Oxford University Press. (For Unit III)

Thirlwall, A. P. (2008). *Growth and Development*. Palgrave, Macmillan. (For Unit V)

7. Reference books

- Jhingan, M. L. (1991). *Economics of Development and Planning*. New Delhi: Konark Publishers.
- Meier, G. M. & Rauch, J. E. (2007). *Leading issues in economic development*, (Eighth edition). Indian Edition). New Delhi: Oxford University Press.
- Gupta, K.R. (2011). *Advanced Economics of Development Vol I and II*. New Delhi: Atlantic Publishers and Distributors (Pvt.) Ltd.
- Higgins, B. H. (1996). *Economic Development: Principles, Problems, and Policies*. New Delhi: Universal Book Stall.
- Singh, D. B. (1971). *Economic Development with Special Reference to India*. New Delhi: Asia Publishing House.
- Dahal M.R. & Khanal B. (2073). *Economics of Development and Planning*. Kathmandu: M.K. Publishers and Distributors.
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Eco. Ed. 517: Statistics for Economics Education

Course No. Eco. Ed. 517
Level: M. Ed.
Semester: First

Nature of course: Theoretical
Credit Hours: 3
Teaching hours: 48

1. Course Introduction:

This course is designed for those students who specialize in Economics Education in masters of education. It includes the application of correlation and regression, sampling, and estimation, hypothesis testing and probability distribution. Furthermore, this course offers some statistical tools used in economics

2. General Objectives

The general objectives of this course are as follows:

- To enable the students in interpreting the correlation coefficient and estimating regression equation.
- To acquaint the students with the concept of sampling and its classification.
- To familiarize the students with the point and interval estimation and the confidence limit for small and large samples.
- To enable the students explaining hypothesis testing.
- To orient students with the concept of probability distribution including conditional probability distribution and mathematical expectation.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Calculate and interpret the correlation coefficient.• Estimate simple and multiple regression equation.• Compute the probable error.	Unit I: Correlation and Regression Analysis (9) 1.1 Concept, properties and types of correlation 1.2 Karl Pearson's correlation coefficient 1.3 Spearman's rank correlation coefficient 1.4 Interpretation of correlation coefficient 1.5 Concept and properties of regression analysis 1.6 Simple and multiple regression analysis 1.7 Probable error
<ul style="list-style-type: none">• Define sampling• Explain the objectives and types of sampling.• Explain sampling error.• Calculate sample mean and sample proportion from sampling distribution.• Compute standard error.	Unit II: Sampling (3) 2.1. Concept, objectives and types of sampling 2.2. Sampling error 2.3. Sampling Distribution of Sample Mean and Sample Proportion 2.4. Standard Error
<ul style="list-style-type: none">• Introduce the estimation.• Explain the characteristics of good estimator.• Describe point and interval estimation.• Identify the confidence limit.	Unit III: Estimation (2) 3.1. Concept of estimation 3.2. Characteristics of a good estimator 3.3. Point and Interval Estimation 3.4. Confidence Limit.
<ul style="list-style-type: none">• Define hypothesis testing• Explain the procedure of hypothesis testing.• Test hypothesis by Z-test, t-test, F-test and χ^2-test.	Unit IV: Testing of Hypothesis (14) 4.1. Concept and Procedure of hypothesis 4.2. Z-test 4.3. t-test 4.4. F-test

	4.4.1 ANOVA 4.5. χ^2 -test
<ul style="list-style-type: none"> • Introduce the concept of probability • Explain the various terms used in probability. • Solve the conditional probability and Baye's theorem. • Describe the random variable. • Calculate the mathematical expectation. • Fitting of binomial distribution. • Fitting of poisson distribution. • Define the normal distribution. • Explain the properties of normal distribution. 	Unit V: Theory of Probability and Probability Distribution (20) <p>5.1 Concept of probability 5.2 Various terms used in probability 5.3 Conditional probability 5.4 Baye's Theorem 5.5 Random variable and mathematical expectation 5.6 Binomial distribution 5.6.1 Properties 5.6.2 Probability function 5.6.3 Mean and Variance 5.6.4 Fitting of binomial distribution 5.7 Poisson distribution 5.7.1 Properties 5.7.2 Fitting of poission distribution 5.8 Normal distribution 5.8.1 Concept of normal distribution 5.8.2 Properties of normal distribution</p>

Note: The figures in the parentheses indicate the approximate periods for the respective units

4. Instructional Technique

Instructional techniques of this course are divided two parts i.e. general and specific which are as follows.

4.1 General Instructional Techniques

The teacher can apply the following general instructional technique as required as per the nature of the unit wise contents.

- Lecture method
- Problem solving method
- Question-answer

5.3 Specific Instructional Techniques

Unit	Activity and instructional techniques	
I	Project Work	
II	Project Work	
III	Project work, discussion and demonstration method	
IV	Project work, discussion and demonstration method	
V	Inductive & deductive method, problem solving methods	

5. Evaluation Scheme

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment (Paper submission)	10

5.2 External Evaluation (Final Examination) 60 %

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective type question (Multiple choice)	10×1	10
2.	Short answer questions (6 questions with TWO alternatives within any two questions $\times 5$ points)	6×5	30
2.	Long answer questions (2 questions with ONE alternative within any one question $\times 10$ points)	2×10	20

Recommended Books

- Gaire, Arjun Kumar (2014), *Probability and Statistics for Engineering* (3rd edition) Heritage Publisher, Kathmandu (for unit I and V)
- Aryal, J. P. & Gautam, Arun (2010), *Quantitative Techniques*, New Hira Books Enterprises, Kathmandu, Nepal (for unit III and IV)
- Murray R. Spigel, Larry J. Stephens (2012), *Statistics*, Tata Mc Graw Hill Education Private Limited, New Delhi. ((For unit II)

Reference Books

- Gupta, S. C. (2013), *Fundamentals of Statistics*. Himalayan Publishing House, Mumbai. India.
- Richard A. Johnson (2009), *Probability and Statistics for Engineers*. PHI, New Delhi.
- Richard A. Johnson (2009), *Probability and Statistics for Engineers*. PHI, New Delhi.
- Monga, G. S. (1975). *Mathematics and statistics for economics*. New Delhi: Vikash Publishing House.
- Freund & Walpole, (1987). *Mathematical statistics*, (Fourth edition). New Delhi: Prentice Hall of India (Pvt.) Ltd.
- Freund, J. E. (1967). *Modern elementary statistics*, (Third edition). New Jersey: Prentice-Hall.
- Kothari, C. R. (1990). *Quantitative technique* (Third edition). New Delhi: Vikash Publishing House (Pvt.) Ltd.
- Paudel, M.R. & Paudel S. (2073). *Quantitative Techniques*. Kathmandu: MK Publisher and Distributors.
- Shrestha, H. B. (2006), *Business Statistics and Data Management*. Ekata Books Pvt. Ltd. Kathmandu, Nepal.
- Stel. R.G.D. and et all (1979) *Principles and Procedures of Statistics*". New York Mc Graw –Hill Book Company, 2nd edition.

Eco. Ed. 518: History of Economic Thought

Course No: Eco. Ed. 518

Nature of the Course: Theoretical

Level: M. Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Introduction:

This course is designed to provide an in-depth knowledge on evolution of economic ideas, thoughts and theories emerged historically from different schools of thoughts since ancient time to date. This course traces the history of oriental and occidental economic ideas and thoughts from ancient to modern times with an emphasis on developments since the period of Kautiliya and Adam Smith respectively. This course attempt to strengthen the interactions between students and teacher in building a discipline called "economics" - the influence of technological change and the social, business, and political environments on economics including the influence of economists on society. In addition, the main aim of this course is to make students enable to examine the progress of the principles of economics from their formative stages to modern times.

2. General Objectives

The general objectives of this course are as follows:

- To provide the students with an understanding of how and why new economic ideas, thoughts and theories emerge historically.
- To provide the students with in-depth knowledge on oriental and occidental economic ideas.
- To enable the students in analyzing the classical contribution of economic thoughts based on oriental and occidental economic ideas.
- To make the students able in analyzing the rise of socialist thought and Marxian socialism.
- To make the students familiar about the important historical, ongoing and current economic debates.

3. Specific Objectives and Contents

Specific Objectives	Contents
Analyse the nature and importance of history of economic thought.	Unit I: History of Economic Thought (10) 1.1 Nature and importance
Review the economic ideas of Shukra, Brihaspati and Kautiliya.	1.2 Overview of oriental economic ideas 1.2.1 Shukra's Arthashastra
Explain the economic ideas of Mercantilism, Physiocracy & William Petty	1.2.2 Brihaspati's Arthashastra 1.2.3 Kautiliya Arthashastra

and Cantillon.	<p>1.3 Overview of occidental economic ideas</p> <p>1.3.1 Mercantilism</p> <p>1.3.2 Physiocracy</p> <p>1.3.3 Forerunners of classical economic Thinkers (William Petty and Cantillon)</p>
Explain the economic ideas of Adam Smith, David Ricardo, Jeremy Bentham, T.R. Malthus and J.S. Mill.	<p>Unit II: Classical Economic Thoughts (8)</p> <p>2.1 Adam Smith</p> <p>2.2 David Ricardo</p> <p>2.3 Jeremy Bentham</p> <p>2.4 T.R. Malthus</p> <p>2.5 J.S. Mill</p>
Analyze the economic ideas of Jean Charles Sismondi, Saint Simon, Robert Owen, Charles Fourier and Proudhon. Explain the Marxian scientific socialism focusing on dialectical materialism, materialistic interpretation of history, class struggle, labour theory of value, theory of surplus value and theory of economic development.	<p>Unit III: The Rise of Socialist Thought and Marxian Socialism (12)</p> <p>3.1 Utopian Economic Ideas</p> <p>3.1.1 Jean Charles Sismondi</p> <p>3.1.2 Saint Simon</p> <p>3.1.3 Robert Owen</p> <p>3.1.4 Charles Fourier</p> <p>3.1.5 Proudhon</p> <p>3.2 Scientific socialism of Karl Marx</p> <p>3.2.1 Dialectical materialism</p> <p>3.2.2 Materialistic interpretation of history</p> <p>3.2.3 Class struggle</p> <p>3.2.4 Labour theory of value</p> <p>3.2.5 Theory of surplus value</p> <p>3.2.6 Theory of economic development</p>

Evaluate the economic ideas of Wilhelm Roscher, Bruno Hildebrand, Karl Gustav Adolf Knies and Gustav Von Schmoller. Discuss the economic thoughts of William Stanley Jevons, Leon Walras, Friedrich Von Wieser, Karl Menger and Eugen Vom Bobm-Bawerk	Unit IV: Post Classical Economic Thought (10) 4.1 Historical school 4.1.1 Wilhelm Roscher 4.1.2 Bruno Hildebrand 4.1.3 Karl Gustav Adolf Knies 4.1.4 Gustav Von Schmoller 4.2 Subjective school 4.2.1 William Stanley Jevons 4.2.2 Leon Walras 4.2.3 Friedrich Von Wieser 4.3.4 Karl Menger 4.3.5 Eugen Vom Bobm-Bawerk
Evaluate the Alfred Marshall's contribution to economic thoughts. Explain the major shift of economic thought since Keynes. Discuss on recent economic discourse on free market economy vs state regulated market economy and neo-liberalism vs crony capitalism.	Unit V : Neo-classical, Keynesian and Recent Economic Thought (8) 5.1 Contribution of Alfred Marshall as a neo-classicist 5.2 Contribution of J. M. Keynes on building Keynesian economic thought 5.3 Debates on recent economic thoughts 5.3.1 Free market economy 5.3.2 State regulated market economy 5.3.3 Neo-liberalism 5.3.4 Crony capitalism

Note: The figures within the parentheses indicate the approximate periods for the respective units.

4. Instructional Technique

Instructional techniques of this course are divided in two parts which are as follows:

4.1 General Instructional Techniques

Lecture:

Discussion , Demonstration, Question answer, Project

4.2 Specific Instructional Techniques

Unit I: Prepare a report through a group discussion.

Unit III: Project work on ideas of utopian socialists and relevancy of Marxian scientific socialism in present context

Unit V: Review the discourse of major shift of economic thoughts since Alfred Marshall, J. M. Keynes to modern times.

5. Evaluation Scheme

Formative and summative both type evaluations will be used. In the formative evaluation student will be evaluated on the basis of regularity and disciplined manner in the classroom and as well as the classroom participation and other practical activities. In the summative evaluation, Examination Division, office of the Dean, Faculty of Education, Tribhuvan University will conduct the final examination at the end of the semester to evaluate student's performance.

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment (Paper submission)	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) 60 %

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective type question (Multiple choice)	10×1	10
2.	Short answer questions (6 questions with TWO alternatives within any two questions \times 5 points)	6×5	30
2.	Long answer questions (2 questions with ONE alternative within any one question \times 10 points)	2×10	20

6. Recommended and Reference books

Gyawali, B. R. (2013). *Oriental Economics Revisited*. Rupandehi: Gyanjyoti Publication.

- Haney, L. H. (1949). *History of Economic Thought*. New Delhi: Surjeet Publication.
- Roll, Eric, Sir. (1973) *A History of Economic Thought*, (4th Ed.). Faber.
- Heilbroner, Robert L. (1996) *Teachings from the Worldly Philosophers*. Norton.
- Heilbroner, Robert L. (2003). *The Worldly Philosophers, Updated Seventh Edition*. Simon and Schuster, Inc.,
- Joshi, M. M. (2007). *History of Economic Thought*. Lalitpur: Pratibha Prakashan.
- Katuwal, N. (2075). *Arthik Bichardhara ko Itihas (History of Economic Thought)*. Lalitpur: Himalayan Saurav Enterprises.
- Schumpeter, J. A. (1954). *History of Economic Analysis*. Oxford University Press.
- Smith, A. (1937). *An Inquiry into the Nature and Causes of the Wealth of Nation* (edited by Edwin Cannan). Modern Library.

Education Planning and Management

- i. Ed. PM. 515: Planning Education for Change
- ii. Ed. PM. 516: Theories of Educational Management and Leadership
- iii. Ed. PM. 517: Educational Administration and Supervision
- iv. Ed. PM. 518: Organizational Behavior in Education

Ed. PM. 515: Planning Education for Change

Course No.: Ed. PM. 515
Level: M. Ed.
Semester: First

Nature of course: Theoretical
Credit hours: 3
Teaching hours: 48

1. Course Introduction

This course is designed for the students at Master's level to provide them with general knowledge about planning education for change. Its aim is to help the students develop knowledge and skills which are necessary to formulate and implement the plans and policies of education that aim at bringing educational change and addressing the issues of national development. Education as a dynamic process has to be made possible by planning it for bringing desired results i.e. changes in the status of people. Students, under this course, are, therefore, encouraged to have a broader conceptual clarity about the latent force of education which is brought out to the fore through its planning.

2. General Objectives

The general objectives of the course are to:

- explore the concept and evolution of educational planning.
- acquaint students with techniques of planning education for bringing about changes in different areas of development in the country.
- prepare students to explore and address diversities in education.
- analyze the policy, mode and parameters of educational planning for change.
- provide students with knowledge of different trends of planning for national development in education.
- equip students with the knowledge of different crises of educational planning and issues of quality education.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• To define the concept of plan and educational plan.• To enumerate the chronology and milestones of educational planning.• To state different themes, issues and challenges of educational planning.• To describe the development and trends of educational planning.	<p>Unit I: Concept and Evolution of Educational Plan (8)</p> <p>1.1 Concept of a plan and educational planning. 1.2 Chronology and milestones of educational planning. 1.3 Prospects of educational planning. 1.4 Themes, issues and challenges of educational planning. 1.5 Trends and development of educational planning.</p>
<ul style="list-style-type: none">• To define the concept and need of planning for people.• To plan for the universalization of basic education.• To plan education to address pluralities of the country.• To plan for the under-served groups of	<p>Unit II: Planning Education for Change (10)</p> <p>2.1 Concept of change in education. 2.2 Planning for people. 2.3 Planning for the universalization of basic education. 2.4 Planning for pluralities of the country. 2.5 Planning to reach the under-served groups of people. 2.6 Planning education for consumerism.</p>

<p>people.</p> <ul style="list-style-type: none"> ● To plan education for consumerism. ● To assess the internal (national) and external funding processes in education. ● To suggest future directions for educational planning. 	<p>2.7 Assessment of funding processes (internal and external) in education. 2.8 Future directions in educational planning.</p>
<ul style="list-style-type: none"> ● To make meaning from different perspectives of diversity planning. ● To elucidate diversity planning for ensuring access, equity and quality of education. ● To be knowledgeable of institutional culture in higher education. ● To identify the link between diversity planning and strategic planning. ● To relate the main thrusts, role and level of diversity planning with institutional planning. ● To find out ways to apply system the approach to higher education. ● To identify performance measures, benchmarks, indicators, targets and trends through the use of diversity planning. 	<p>Unit III: Planning for Diversity (10)</p> <p>3.1 Meaning and concept of diversity planning 3.1.1 International perspective 3.1.2 Population dynamics as a driver of diversity planning 3.2 Diversity planning as an instrument to promote access, equity and quality of education 3.3 Institutional culture in higher education 3.4 Planning diversity from an institutional planning perspective 3.4.1 Linkage of diversity planning to strategic planning 3.4.2 Main thrusts of the strategic planning 3.4.3 Role of planning information in institutional diversity planning 3.5 Application of the system approach to higher education 3.6 Levels of planning information at macro-, meso-and micro- levels 3.7 Diversity planning for identifying performance measures 3.7.1 Benchmarks 3.7.2 Performance indicators 3.7.3 Targets 3.7.4 Trends</p>
<ul style="list-style-type: none"> ● To state the parameters of economic, educational and dynamic changes through policy planning. ● To explain different policy modes in relation to planning education for change. ● To state the criteria of policy options with reference to planning education for change. 	<p>Unit IV: Educational Policy Planning (10)</p> <p>4.1 Parameters of policy planning 4.1.1 Economic parameter 4.1.2 Educational parameter 4.1.3 Parameter of dynamic change 4.2 Policy modes 4.2.1 Systemic mode 4.2.2 The ad hoc mode 4.2.3 The incremental mode 4.2.4 The importation mode 4.3 Criteria of policy options 4.3.1 Desirability 4.3.2 Affordability 4.3.3 Feasibility of policy options</p>

<ul style="list-style-type: none"> • To define planning for development concerns from various perspectives. • To analyze dilemmas of planning for development discourse. <ul style="list-style-type: none"> • To identify development issues in educational planning. • To explore the globalization and evolutionary-devolutionary approaches to educational planning and management. • To find out ways to use research and development in planning and management. • To explain the concept and use of QAA in educational planning and management. 	<p>Unit V: Trend Setters of Educational Planning and Management</p> <p>(10)</p> <p>5.1 Planning for development concerns</p> <p> 5.1.1 Development theory</p> <p> 5.1.2 Concept of development as a social equalizer</p> <p>5.2 Dilemmas of planning for development discourse</p> <p> 5.2.1 Crisis of development</p> <p> 5.2.2 Evolution of planning for development</p> <p> 5.2.3 Development as redemption</p> <p> 5.2.4 Development planning options</p> <p>5.3 Development issues in educational planning</p> <p> 5.3.1 Notions of change</p> <p> 5.3.2 Modernization of educational planning</p> <p> 5.3.3 Critical globalism</p> <p>5.4 The Glocalization approach to planning</p> <p>5.5 The evolutionary-devolutionary approach to planning and management</p> <p>5.6 Research and development in planning and management</p> <p>5.7 Macro-leadership and micro- management to planning</p> <p>5.8 Use of Quality Assurance and Accreditation (QAA) system</p>
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Note: The figures in the parentheses indicate approximate hours allotted to each unit. Students' activities, normally, will include planning and preparation of appropriate tools/measures for information/content collection, report preparation, report presentation and discussion.

4. Instructional Techniques

A combination of general and specific techniques of instruction will be used to deliver the course. A brief note of these techniques is as follows:

4.1 General techniques

As this course is descriptive in nature with theoretical references, the teacher is suggested to apply techniques of engaging the students in a number of ways ranging from issue-based discussion to paper-based presentation in the classroom. References to the existing practices of educational planning with a focus on the disadvantaged should be brought out into the classroom by assigning the groups of students to do small-scale investigation into the assigned components of the course.

4.2 Specific techniques

Unit	Activity and Instructional Techniques
Unit Three	Planning for diversity: Assign groups of students the task of reviewing the educational plans starting from the National Education System Plan (1971-75) to the School Sector Reform Plan (2009-15). Divide the class into manageable groups to work in these different periodic educational plans so as to assess these

	<p>plans from the perspective of inclusion and diversity. Make sure that each group of students prepares the review of these plans along with the given format. Require each group of students to present the review reports before the class. Initiate discussion on the presentation followed by conclusion from the teacher.</p>
Unit Five	<p>Trends in Planning for Educational Development:</p> <p>5.2 Dilemmas of planning for development discourse</p> <p>Divide the class into manageable groups of 5 students each to review the book Development Theory (Jan Nederveen Pieterse-2001).</p> <p>Ask the students to read and review the book to come up with answers on Crisis of Development, Evolution of Planning for Development, Development as Redemption and Development Planning Options. The students in groups prepare the review reports for discussion in the class followed by critical observation from the teacher.</p> <p>5.3 Development issues in educational planning</p> <p>The students in this group read and review the book for a different purpose under the guidance of the teacher. They prepare a brief paper on Notions of Change, Modernization of Educational Planning and Critical Globalism to present before the class. The teacher asks the presenters for collecting feedback from the fellow students followed by his/her observation. These papers can be submitted to the teacher in the form of internal assessment.</p>

Lecture, seminar, classroom exercise, guided individual study, tutorial support on the difficult contents, independent study, and project work can be used as specific instructional techniques by the teacher. Types of learning activities that the teacher is expected to facilitate will range from ensuring attendance to lectures, performing specific assignments, writing papers, initiating independent and private study, reading and reviewing books, journals and papers, learning how to give constructive criticism, peer group study to issue based discussion in the classroom.

5. Evaluation Schemes

Evaluation of students' performance is done in two-way system of internal and external evaluation. Internal evaluation will take the form of formative assessment of students' performance, grades on which will be added to the grades of external evaluation.

5.1 Internal evaluation (40%)

Internal evaluation will be based on the following criteria:

Oral examination, seminar/workshop/conference presentation, written essay and examination (unit tests), quizzes, and paper-pencil tests will take the form of continuous assessment.

Internal evaluation will be conducted by the course instructor based on the following activities:

Attendance	5 points
Participation in learning activities	5 points
First assignment/midterm exam	10 points
Second assignment/assessment	10 points

Third assignment/assessment	10 points
Total	40 points

5.2 External evaluation (60%)

External evaluation will be conducted by Examination Section, Office of the Dean, Faculty of Education through final written examinations at the end of the semester. The following types of questions will be employed:

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|---|-----------|
| 1. Objective questions (Multiple-choice items 10x1) | 10 points |
| 2. Short-answer questions (6 questions with 2 choices x 5 points) | 30 points |
| 3. Long-answer questions (2 questions with 1 choice x 10 points) | 20 points |

Total	60 points
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6. Recommended Books and References

6.1 Recommended books

- Arredondo, P. (1996). *Successful diversity management initiatives: A blueprint for planning and implementation*. London: Sage. (For Unit 3)
- Caleb, R. (2006). *What do we mean by diversity management?* New Haven: Southern Connecticut State University (For Unit 3)
- Haddad, W. D. & Demsky, T. (1995). *Education policy planning process: An applied framework*. UNESCO: IIEP. (For Unit 4)
- John, S., Martial, D. & Jane, S. (2007). *Global perspectives on teacher learning: Improving policy and practice*. Paris: UNESCO, IIEP. (For Unit 4)
- Kafle, B. D. Sinha, R.S., Karanjit, R. P. & Dhakal, H. R. (2007). *Educational planning*. Kirtipur: Sunlight Publication. (For Unit 1, &2)
- Lewin, K. (2008). *Four decades of educational planning: Retrospect and prospect*. Paris: International Institute for Educational Planning, UNESCO. (For Unit 1)
- Philip, H. & Coombs, P. H. (1970). *What is educational planning?* Paris: UNESCO, IIEP. (For Unit 1)
- Pieter, J. V. (2011). *Diversity management in higher education: A South African perspective in comparison to a homogeneous and monomorphous society*. Germany: Centre for Higher Education Development. (For Unit 3)
- Pieterse, J. N. (2001). *Development theory: Deconstruction/ reconstructions*. London: Sage Publications. (For Unit 5)
- UNESCO (2009). *Orientation in educational planning*. Paris: IIEP, UNESCO. (Unit 2)
- Varghese, N.V. (2008). *State is the problem and state is the solution: The changing orientations in educational planning* (working document). Paris: IIEP, UNESCO. (For Unit 2)

6.2 References

- Christopher, C., Jeff, E. & Mathew, A. (2005). *Human resource management practices alignment and firm performance*. Ithaca, NY: Cornell University. (For Unit 5)
- D'Orville, H., Jacques, P. & Caroline, D. (2010). *Mobilizing resources for international development cooperation in education: What innovative mechanisms and partnerships?* Paris: UNESCO, IIEP. (For Unit 3)
- Kenneth, C. B. (1998). *A study of strategic planning in federal organizations*. Virginia: Polytechnic Institute and State University. (For Unit 3)
- Mathews, M. R. (1980). *The Marxist theory of schooling: A study of epistemology and education*. New Jersey: Harvester Press. (For Unit 2)
- Nicholas, I. (1998). *Educational planning in east Africa: The role of imported planning technology*. Masters' thesis submitted to Department of Graduate Studies of Educational Research, Calgany, Alberta. (For Unit 4)

- Schuurman, F. J. (2001). *Globalization and development studies: Challenges for the 21st century*. New Delhi: Sage Publications. (For Unit 3 &5)
- Sergio J. (2011). *Strategic management: The theory and practice in organizations*. Denmark: Section of Innovation Systems and Foresight, Department of Engineering Management Technical University. (For Unit 3)

Ed. PM. 516 Theories of Educational Management and Leadership

Course No.: Ed.PM. 516
Level: M.Ed.
Semester: First

Nature of course: Theoretical
Credit hours: 3
Teaching hours: 48

1. Course Introduction

This course is designed for those students who specialize in Educational Planning and Management at the M.Ed. level. The main intention of this course is to provide an in-depth understanding of the theories of educational management and leadership. The course also deals with the interface between the theories of management and leadership. Moreover, this course enriches the students' thinking on ways and measures to apply management and leadership theories in operating educational institutions. The course, therefore, intends to engage the students in brief case studies and field studies to get a feel of the operating educational organizations.

2. General Objectives

The general objectives of this course are to:

- equip students with the knowledge about the basic concepts of educational management and leadership and allied terms.
- provide students with a deeper understanding of the contribution of management thoughts to educational management.
- prepare students to have the wider knowledge of the models of educational management and relationship between those models with associated leadership.
- enable students to find out the different leadership theories and the effectiveness of the leadership.
- enrich students' knowledge in styles of leadership and contemporary leadership roles.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Differentiate among management, administration and governance• Elaborate the concept and functions of educational management• State the recent developments of educational management• Outline the difference between managing educational organization and other organizations• Explain gender in educational management	<p>Unit I: Introduction to Educational Management (6)</p> <p>1.1 Difference among management, administration, and governance 1.2 Concept of educational management 1.3 Functions of educational management 1.4 Chronology of educational management 1.5 Difference between management of educational organization and other organizations 1.6 Gender and educational management</p>
<ul style="list-style-type: none">• Analyze the contribution of management thought to educational management	<p>Unit II: Contribution of Management Thought to Educational Management (7)</p> <p>2.1 Scientific management 2.2 Theory of bureaucracy 2.3 Modern operational management theory 2.4 Human relations movement 2.5 Modern management thought</p>
<ul style="list-style-type: none">• Give introduction to models of	<p>Unit III: Models of Educational Management</p>

<p>educational management</p> <ul style="list-style-type: none"> • Identify the main elements in analyzing the models • Elucidate the models of educational management focusing on major features, associated leadership and limitations • Compare the management models and draw implications for management practices of schools in Nepal • Point out the ways of using theories to improve practice in managing educational organizations 	<p>(10)</p> <p>3.1 Models of educational management 3.2 Main elements in analyzing the models 3.3 Models of educational management: Major features, associated leadership and limitations</p> <p>3.3.1 Formal: Structural, bureaucratic and hierarchical 3.3.2 Collegial 3.3.3 Political 3.3.4 Subjective 3.3.5 Ambiguity 3.3.6 Cultural</p> <p>3.4 Comparison of management models 3.5 Using theories to improve organizational practice</p>
<ul style="list-style-type: none"> • State the concept of educational leadership and its needs • Clarify the difference between leadership and management • Identify the different types of leadership theories • State the effectiveness of leadership • Illustrate the key leadership and management skills • Explain different aspects of leading and managing change in educational organizations • Identify the importance of inner resources and its development to the inner leader 	<p>Unit IV: Educational Leadership (12)</p> <p>4.1 Concept and need of educational leadership 4.2 Difference between leadership and management 4.3 Theories of leadership</p> <p>4.3.1 Great man theory 4.3.2 Trait theory 4.3.3 Contingency theory 4.3.4 Situational theory 4.3.5 Behavioral theory 4.3.6 Participative theory 4.3.7 Transactional theory 4.3.8 Transformational theory 4.3.9 Skills theory</p> <p>4.4 Effective leadership</p> <p>4.5 Key Leadership and management skills 4.6 Leading and managing change 4.7 Developing school leaders 4.8 Personal leadership</p> <p>4.8.1 Need for inner recourses 4.8.2 Development of the inner leader</p>

<ul style="list-style-type: none"> • Elucidate the different styles of leadership • Explore the determinants of leadership skills • Identify the use of educational leadership and management processes • Find out the leadership styles • Explore the development and change efforts in Nepali school contexts 	<p>Unit V: Styles of Leadership (13)</p> <p>5.1 Styles of leadership</p> <ul style="list-style-type: none"> 5.1.1 Autocratic 5.1.2 Bureaucratic 5.1.3 Charismatic 5.1.4 Democratic 5.1.5 Laissez-faire <p>5.2 Determining factors of leadership skills:</p> <ul style="list-style-type: none"> 5.2.1 Size of an organization 5.2.2 Degree of interaction 5.2.3 Personality of members 5.2.4 Goal congruencies 5.2.5 Levels of decision making <p>5.3 Educational leadership and management process:</p> <p>5.4 Leadership, behavior and styles</p> <ul style="list-style-type: none"> 5.4.1 Styles based on the use of authority 5.4.2 The managerial grid 5.4.3 Leadership as a continuum <p>5.5 Contemporary leadership roles</p> <ul style="list-style-type: none"> 5.5.1 Mentoring 5.5.2 Self-leadership 5.5.3 The e-age and online leadership <p>5.6 Applications of leadership approaches and styles in educational institutions</p> <p>5.7 Leadership development and change efforts in Nepali school contexts</p> <ul style="list-style-type: none"> 5.7.1 Strategies 5.7.2 Teamwork 5.7.3 Development of institutional capabilities
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Note: The figures in the parentheses indicate approximate hours allotted to each unit.

4. Instructional Techniques

General as well as specific instructional techniques have been suggested to deliver the contents and to carry out experiential exercises. Here is a brief account of these techniques:

4.1 General instructional techniques

- Lecture
- Discussion
- Question-answer
- Project work

4.2 Specific instructional techniques

To promote experiential learning in this course, the following specific instructional techniques are recommended for selected units to ensure students' active participation in the teaching-learning process and to make the teaching-learning research-oriented.

Units	Specific Instructional Techniques
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<p>Unit 1 (Sub-units)</p> <ul style="list-style-type: none"> • Difference between the management of educational organizations and that of other organizations • Gender and educational management 	<p>Brief Case Studies</p> <ul style="list-style-type: none"> • Divide the class into two groups to observe the daily activities of the chiefs of two organizations: one of their own institutions and the other of a nearby organization, not the schools and campuses/colleges. Let both the groups of students present their reports in the class. Let other students list out the differences between the management of these two types of organizations and discuss in the class. • Let the two groups of students observe the activities of male and female headteachers and get them to present their reports in the class. Ask the other students to list out the differences between the management of male and female headteachers for classroom discussion purpose.
<p>Unit II Models of educational management</p>	<p>Students' Activities</p> <ul style="list-style-type: none"> • Divide the students into several groups as required to let them work in groups. • Let the groups of students prepare lessons to analyze the management of the public/community schools, public/institutional schools and the constituent and affiliated campuses of universities from the perspectives of management models. For preparing the lessons, students need to visit the concerned institutions as required. • Presentation of lessons in the class followed by discussion. • A separate session will be allotted for discussing the comparison of management models.
<p>Unit III</p>	<p>Divide the class into groups of four or five students. Let them do a simulation exercise to review the listed articles and let to present and discuss in the class.</p> <p>Bush, T. (1995). Theories of educational management. In <i>Organizational Behavior</i> (15th edition, unit I) London: Paul Chapman Publishing Ltd.</p> <p>Bush, T. (2008). <i>Theories of educational management (module)</i>. Retrieved from http://enx.org/content/m13867/latest. (For Units 1, 2, 3 and 4)</p>
<p>Unit IV Leadership</p>	<p>Students' Activities</p> <ul style="list-style-type: none"> • Divide the students into several groups as required. • Let the groups of students study managerial roles and skills from the books (Weirich and Koontz, 2005; Robbins, Judge and Sanghi, 2009) linking with the sub-units of this unit. • Let the groups of students prepare the lessons comparing both contents. • Get students to present the lessons in the classroom followed discussion.
<p>Unit V: Style of leadership</p>	<p>Brief Field Studies</p> <ul style="list-style-type: none"> • Engage groups of students in interviews with the teachers of

<p>(Sub-units)</p> <ul style="list-style-type: none"> • The Managerial Grid • Leadership as a Continuum • Applications of Leadership Approaches, Behavior, styles and roles in Managing Educational Institutions 	<p>selected schools. Some groups will analyze the leadership behavior and styles of headteachers from the perspective of managerial grid and other groups from the perspective of leadership as a continuum.</p> <ul style="list-style-type: none"> • Let the students present the findings in the class for discussion.
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5.Evaluation Schemes

5.1 Internal evaluation (40%)

The concerned teacher will carry out the internal evaluation of the students based on the following criteria.

<ul style="list-style-type: none"> 1. Attendance 2. Participation in learning 3. First assignment/assessment 4. Second assignment/assessment 5. Third assessment 	5 Marks 5 Marks 10 Marks 10 Marks 10 Marks
Total	40 Marks

5.2 External evaluation (60%)

Examination section, Office of the Dean, Faculty of Education will conduct final written examination at the end of the semester. The types of items, number of items and their weightage are as follows:

<ul style="list-style-type: none"> 1. Objective questions (10 Multiple-choice questions x 1) 2. Short-answer questions (5 questions with 2 choices x 6) 3. Long-answer questions (2 questions with 1 choice x 10) 	10 Marks 30 Marks 20 Marks
Total	60 Marks

6. Recommended Books and References

6.1 Recommended books

- Bush, T. (1995). *Theories of educational management*. London: Paul Chapman Publishing Ltd. (For Units 1, 2, 3 and 4)
- Bush, T. (2008). *Theories of educational management (module)*. Retrieved from <http://enx.org/content/m13867/latest>. (For Units 1, 2, 3 and 4)
- Bush, T. (2009). *Leadership and management development in education*. London: SAGE Publication Ltd. (For Unit 6)
- Bush, T. (2009). *Theories of educational leadership and management*. London: SAGE Publication Ltd. (For Units 4 and 5)
- DeFliminis, J. A. (2008). *Effective management and management stars: Change and continuous quality improvement*. Retrieved from www.gse.upenn.edu/pcel. (For Units 4)
- Robbins, S. P., Judge, T. A., & Sanghi, S. (2009). *Organizational behavior (13th edition)*. New Delhi: Pearson Education. (For Unit 5)
- Weihrich, H. & Koontz. (2005). *Management: A global perspective (11th edition)*. New Delhi: Tata McGraw Hill Publishing Company Limited. (For Units 1, 2 and 5)

Brent, D. and Mark, B. (Eds.). (2010). *Developing successful leadership*. London: Springer Dordrecht Heidelberg.

6.2 References

- Brent, D. and Mark, B. (Eds.). (2010). *Developing successful leadership*. London: Springer Dordrecht Heidelberg
- Bush, T. (2007). Educational leadership and management: Theory, policy, and practice. *South African Journal of Education*, 27(3), 391–406.
- Daft, R.R. (2004). Theory Z: Opening the corporate door for participative management. *Academy of Management Executive*. 18(4), 117-122.
- Government of Nepal (2009). *School sector reform plan 2009-2015*. Kathmandu: Ministry of Education.
- Griffiths, D.E. (1978). *Administrative theory*. New Delhi: D.B. Taraporevala sons and Co. Pvt. Prentice Hall.
- Humes, W. (2000). The discourses in educational management. *Journal of Educational Enquiry*. Vol. 1, No. 1, 35-53.
- Ken, A. (2002). *Effective management in the south*. Kathmandu: Ekta Books Distributors Pvt. Ltd.
- Koontz, H., O'Donnell, C., & Weihrich, H. (1982). *Essentials of management*. New Delhi: TATA McGraw-Hill Publishing Company Ltd.
- Ouchi, W. G., & Price, R. L. (1978). Hierarchies, clans, and theory Z: A new perspective on organization development. *Organizational Dynamics*, 7(2), 25-44.
- Robbins, S. P. (2005). *Organizational behavior (10th edition)*. New Delhi: Pearson Education.
- Amanchukwu, R. N., Stanley, G. J. & Ololube, N. P. (2015). A review of leadership theories, principles and styles and their relevance to educational management. *Management* 5(1), 6-14.
- Telford, H. (1996). *Transforming schools through collaborative leadership*. London: The Farmer Press

Ed. PM. 517 Educational Administration and Supervision

Course No.: Ed. PM. 517
Level: M. Ed.
Semester: First

Nature of course: Theoretical
Credit hours: 3
Teaching hours: 48

1. Course Introduction

This course aims at providing general knowledge about educational administration and supervision to the students at Master's level. It intends to orient the students to theoretical bases of educational administration and supervision by relating them to some established practices. Educational administration and supervision is an applied discipline for bringing the desired results, i.e. efficient and effective educational organizations and the students are therefore encouraged to have a broader conceptual clarity about its different facets that work in tandem to drive the organizations to deliver quality education services to people.

2. General Objectives

The general objectives of this course are to:

- familiarize students with the conceptual bases of educational administration and supervision.
- equip students with the knowledge about personnel administration and its influence in educational administration.
- promote students' understanding about the approaches of educational supervision.
- enhance students' knowledge about the concepts, principles, models and processes of clinical supervision.
- explore and understand the practices related to educational administration and supervision in Nepal.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Acquire the knowledge of the basic theoretical and conceptual premises of educational administration• Analyze the conceptual and technical aspects of educational administration• Be acquainted with the changing concept of educational administration• Identify major issues of educational administration with a focus on their relevance to administrative practice	<p>Unit I: Educational Administration: Theoretical and Conceptual Basis (7)</p> <p>1.1 Concepts and theories of educational administration 1.2 Educational administration as a disciplinary practice 1.3 Changing concept of educational administration 1.4 Components and importance of educational administration 1.5 Major issues</p>

<ul style="list-style-type: none"> • Analyze the personnel administration policies and methods • State organizational factors • Explore the collective bargaining processes in educational institutions Assess the status of personnel administration in Nepalese public education 	<p>Unit II: Personnel Administration (10)</p> <p>2.1 Personnel administration policies and methods 2.2 Individual and professional development 2.3 Performance appraisal 2.3. Organizational factors 2.3.1 Environmental influences 2.3.2 Relevance 2.3.3 Structure 2.4 Collective bargaining 2.5 Personnel school administration of Nepal</p>
<ul style="list-style-type: none"> • Define and explain the concept and purposes of educational supervision • Trace the evolution of educational supervision • Explain the changes in the organization and structure of supervisory services • Analyze the quality improvement and monitoring services in relation to supervision • Identify the supervision in federal system • Critically analyze various approaches and styles of supervision • List out and describe the models of school supervision • Explain and apply the class observation and interaction • Describe basic supervisory skills 	<p>Unit III: Concept and Purpose of Educational Supervision (14)</p> <p>3.1 Concept and purpose 3.2 Evolution of educational supervision 3.2.1 Administrative inspection 3.2.2 Efficiency orientation 3.2.3 Cooperative group efforts 3.2.4 Research orientation 3.3 Changes in organization of supervisory service 3.4 Supervision and other quality improvement and monitoring services 3.5 Supervision in federal system 3.6 Approaches to educational supervision 3.6.1 Power with approach 3.6.2 Power over approach 3.6.3 School-based supervision and support approach 3.6.4 Competency-based approach 3.7 Styles of educational supervision 3.8 Models of school supervision 3.9 Class observation and interaction 3.10 Basic supervisory skills 3.10.1 Planning 3.10.2 Communication 3.10.3 Providing leadership 3.10.4 Releasing human potential 3.10.5 Building teachers' morale</p>
<ul style="list-style-type: none"> • Explain the conceptual basis of clinical supervision • Explain the purpose and processes of clinical supervision • Explain teacher-supervisor 	<p>Unit IV: Clinical Supervision (7)</p> <p>4.1 Conceptual basis of clinical supervision 4.2 Purpose of clinical supervision 4.3 Processes of clinical supervision</p>

<p>relationship for effective supervision</p> <ul style="list-style-type: none"> • Explain the central principles of supervision • Enumerate the practical issues in clinical supervision 	4.4 Teacher-supervisor relationship and implication 4.5 Central principles of clinical supervision 4.6 Practical issues in clinical supervision <ul style="list-style-type: none"> 4.6.1 Strength 4.6.2 Diversity 4.6.3 Interdisciplinary relation
<ul style="list-style-type: none"> • Explain the development of supervision system in Nepal • Explore the role of local governance in supervisory system • Assess school supervision as a tool of school evaluation • Explore the benefits of school-based supervision • Critically analyze the existing supervisory system 	<p>Unit V: Educational Supervision Practices in Nepal (10)</p> <p>5.1 Development of supervision system in Nepal</p> <ul style="list-style-type: none"> 5.1.1 Supervisory practices in different periods of time 5.1.2 Role of local governance in supervision 5.1.3 School-based supervision <p>5.2 School supervision as a tool of school evaluation</p> <ul style="list-style-type: none"> 5.2.1 Whole school evaluation 5.2.2 Thematic evaluation <p>5.3 Critical analysis of existing supervisory system</p>

4. Instructional Techniques

Two types of instructional techniques, general and specific, will be used to deliver the course. A brief note of these techniques is as follows:

4.1 General techniques

As this course is descriptive in nature with theoretical references, the teacher is suggested to apply techniques of engaging the students in a number of ways ranging from issue-based discussion to paper-based presentation in the classroom. References to the existing practices of educational administration and supervision should be brought into the classroom by assigning the groups of students the tasks of small-scale investigation into the assigned components of the course. Be sure that students make presentations on the given assignments in the classroom and the classroom is participatory and interactive.

4.2 Specific instructional techniques

Unit	Activity and instructional techniques
Unit Five: Educational Supervision Practices in Nepal	<p>The students are required to work in groups for different sub-units of this unit. Divide the class into manageable groups of students and assign them two sub-units each for preparing briefs on the given topics. Require them to present the briefs before the class followed by discussion and feedback from the teacher. The teacher can use this as one of the forms of internal assessment in order to grade students' performance. Provide the students with resource materials so that they can read them before preparing the briefs for presentation in the class.</p>

Lecture, seminar, class work, guided and independent study, tutorial support on the difficult content, and project work can be used as specific instructional techniques by the teacher.

Types of learning activities that the teacher is expected to facilitate will range from ensuring attendance to lectures, performing specific assignments, writing papers, initiating independent private study, reading and reviewing books, journals and papers, learning how to give constructive criticism, and peer group study.

5. Evaluation Schemes

Students' performance is evaluated through a two-way system of internal and external evaluation. Internal evaluation will take the form of formative assessment of students' performance, grades on which will be added to the grades of external evaluation.

5.1 Internal evaluation (40%)

Internal evaluation will be based on the following criteria:

Oral examination, seminar/workshop/conference presentation, written essay and examination (unit tests), quizzes, paper-pencil/ test will take the form of continuous assessment. The course teacher based on the following activities will conduct internal evaluation:

- | | |
|---|-----------|
| 1. Attendance | 5 points |
| 2. Participation in learning activities | 5 points |
| 3. First assignment/midterm exam | 10 points |
| 4. Second assignment/assessment | 10 points |
| 5. Third assignment/assessment | 10 points |

Total	40 points
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5.2 External evaluation (60%)

Examination section, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The number of items in each category of questions and the distribution of points to be included in the final examination paper are as follows:

- | | |
|---|-----------|
| 1. Objective questions (Multiple-choice items 10x1) | 10 points |
| 2. Short-answer questions (6 questions with 2 choices x 5 points) | 30 points |
| 3. Long-answer questions (2 questions with 1 choice x 10 points) | 20 points |

Total	60 points
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Recommended Books and References

- Adams, H.P. & Dickey, F. G. (1975). *Basic principles of educational administration and supervision*. New York: American Book Company. (Unit 1)
- Campbell, R. & Others (1957). *Administrative behavior in education*. New York: Harper and Row Publication. (Unit1)
- Campbell, R. F. & Others (1968). *Introduction to educational administration*. Boston: Alva and Bacon, Inc. (Unit 1)
- Cogan, M. L. (1973). *Clinical supervision*. Boston: Houghton Mifflin Co. (Unit 4)
- Gill, D. S. (2010). *Educational administration and organization management*. New Delhi: Saurabh Publishing House Lotus Press. (Unit 1 and 2)
- Gold Hammer, R., Robbert, H. A. & Robert A. K. (n.d). *Clinical supervision: Special methods for the supervision of teaching*. (Unit 4)
- Goldring, B. B. & Sullivan, A. V. (1996). *International handbook of educational leadership and administration*. Boston: Vanderbilt University, Kluwer Academic Publishers. (Unit 1)
- Griffiths, D. E. (1978). *Administrative theory*. New Delhi: D.B. Tara Porevala Sons and Co. Pvt. Prentice Hall. (Unit 1 and 2)

- International Institute for Educational Planning (2007). *The organization of supervisors*. Paris: Author. (Unit 3)
- International Institute for Educational Planning (2007). *Reforming school supervision for quality improvement* (all 8 modules). Paris: Author. (Unit 3)
- Kenneth, L., Judith, C., David, C., Philip, H. & Ann, H. (1996). *International handbook of educational leadership and administration*. USA: Kluwer Academic Publishers. (Unit 1 and 2)
- Kimball, W. (1975). *Supervision for better schools*. New Jersey: Prentice, Inc. Englewood Cliffs. (Unit 3 and 4)
- Mohanty, J. (2008). *Educational management, supervision and school organization*. Nil Kamal Publication Pvt. (Unit 1, 3 and 6)

Ed. PM. 518 Organizational Behavior in Education

Course No.: Ed. PM. 518
Level: M. Ed.
Semester: First

Nature of Course: Theoretical
Credit hours: 3
Teaching hours: 48

1. Course Introduction

This course is designed for those students who specialize in educational planning and management in Master's of Education (M.Ed.). The aim of this course is to provide an in-depth understanding of the theory and practice of organizational behavior (OB) and change relating to educational institutions. This course enriches the students' understanding and thinking and stimulates them to apply the knowledge of organizational behavior and change gained through classroom interaction and experiential exercises in operating educational institutions.

2. General Objectives

The general objectives of this course are to:

- equip students with the knowledge about the concept of fundamental organizational and individual behavior for ensuring an understanding of educational institutions.
- stimulate the students to develop a strong theoretical foundation of personality, perception, attitudes and job satisfaction for becoming capable educational managers.
- make the students conversant with a deeper understanding of overarching roles of groups and teams in organizations.
- familiarize the students with the deeper and wider understanding of conflict management.
- enhance the understanding of the organizational culture in general and educational institutions in particular.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • State the concept of organizational behavior. • State the emerging trends in organizational behavior and critical behavioral issues confronting the manager. • Understand the approaches to manage the organizational change. • Explain the intellectual ability, biographical characteristics and learning theories along with the shaping of behavior. • Derive the implications of abilities, biographical characteristics and learning for educational managers. 	<p>Unit I: Organizational and individual Behavior (11)</p> <p>1.1 Organizational behavior (OB)</p> <p> 1.1.1 Concept of organizational behavior</p> <p> 1.1.2 Emerging trends in organizational behavior</p> <p> 1.1.3 Critical behavioral issues of the manager</p> <p> 1.1.4 Approaches to managing organizational change</p> <ul style="list-style-type: none"> • Lewin's three step model • Action research <p>1.2 Individual Behavior</p> <p> 1.2.1 Intellectual ability and its relevance to OB</p> <p> 1.2.2 Biographical characteristics and its relevance to OB</p> <p> 1.2.3 Behavioral management – behavioral modification of organizations</p> <p> 1.2.4 Implications of ability, biographical characteristics and learning for educational managers</p>
<ul style="list-style-type: none"> • Elaborate the concept of personality and personality traits. • State the concept perception. • Explain perception process and social perception. • Describe the concept attitude and major job attitudes. • State the method of measuring teachers' attitudes and measure teachers' attitudes using the suggested tools. • State the method of measuring job satisfaction and measure job satisfaction using the suggested tools. • Elaborate the job satisfaction and dissatisfaction in the workplace. • Indicate the effect of job satisfaction on the teacher's performance. 	<p>Unit II: Personality, Perception and Employee Attitudes (10)</p> <p>2.1 Personality</p> <p> 2.1.1 Concept of personality</p> <p> 2.1.2 Personality trait</p> <p>2.2 Individual and organizational perception</p> <p> 2.2.1 Concept</p> <p> 2.2.2 Perception process</p> <p> 2.2.3 Social perception</p> <p>2.3 Employee attitudes</p> <p> 2.3.1 Concept of attitude</p> <p> 2.3.2 Major job attitudes</p> <p> 2.3.3 Method of measuring teacher's attitudes</p> <p>2.4 Job satisfaction</p> <p> 2.4.1 Measuring job satisfaction</p> <p> 2.4.2 Job satisfaction and dissatisfaction in the workplace</p> <p>2.5 Effect of job satisfaction on the teacher performance</p>
<ul style="list-style-type: none"> • Differentiate among group, team and task force. • Elaborate the basic nature of groups: the dynamics of group dynamics and the dynamics of group formation. 	<p>Unit III: Groups and Teams (10)</p> <p>3.1 Concept of group, team and task force</p> <p>3.2 Nature of groups</p> <p> 3.2.1 Group dynamics</p>

<ul style="list-style-type: none"> • Describe various types of groups. • Discuss the stage of group development. • Explain the important dynamics of informal groups. • State the nature of a team. • Explain various types of teams. • Discuss the ways of making a team more effective. 	<ul style="list-style-type: none"> 3.2.3 The dynamics of group formation 3.2.4 Types of groups 3.2.5 Stages of group development 3.3 The dynamics of informal group 3.4 Work teams 3.4.1 Nature of a team 3.4.2 Cross-sectional teams 3.4.3 Virtual teams 3.4.4 Self-managed teams 3.4.5 Making a team more effective
<ul style="list-style-type: none"> • State the concept of conflict management in education. • Explain the types and sources of conflict. • Differentiate between the traditional, human relations and interactionist views of conflict. • Discuss conflict management strategies. • Explain the implications of conflict management to an educational manager. 	<p>Unit IV: Conflict Management in Education (9)</p> <ul style="list-style-type: none"> 4.1 Concept of conflict management 4.2 Types of conflict <ul style="list-style-type: none"> 4.2.1 Intra-individual conflict 4.2.2 Inter-individual conflict 4.2.3 Interactive conflict 4.3 Different views of conflict <ul style="list-style-type: none"> 4.3.1 Traditional 4.3.2 Human relations 4.3.3 Interactionist 4.4 Sources of conflict 4.5 Conflict management strategies 4.6 Implication of conflict management for an educational manager
<ul style="list-style-type: none"> • Explain the concept of school culture. • State the modern organizational designs. • Explain the organizational reward system in school education. 	<p>Unit V: Organizational Context (8)</p> <ul style="list-style-type: none"> 5.1 Concept of school culture 5.2 Modern organizational design <ul style="list-style-type: none"> 5.2.1 Contemporary design: Hollow and Modular 5.2.2 Horizontal organization 5.2.3 Network design 5.2.4 Virtual organization 5.3 Organizational reward system in school education <ul style="list-style-type: none"> 5.3.1 Pay: Dominant organizational reward 5.3.2 Recognition as an organizational reward 5.3.3 Benefits as organizational reward

Note: The figures in the parentheses indicate approximate hours allotted to each unit.

4. Instructional Techniques

General as well as specific instructional techniques have been suggested to deliver the contents in the classroom and to carry out experiential exercises. Here is a brief account of these techniques:

4.1 General instructional techniques

It is recommended that the teachers use lecture, discussion and question-answer as general instructional techniques, which are applicable to most of the units. Active participation of students should be ensured while using these techniques to make the teaching interactive. As this course is descriptive in nature with theoretical references, lecture preferably with the use

of multi-media projector will be an effective technique. In order to generate discussion and brain-storming exercises in the class, it is suggested that the teachers present relevant themes, problems, issues and challenges linking with the cases happening in the field of educational management in Nepal.

4.2 Specific instructional techniques

To promote experiential learning in this course, the following specific instructional techniques are recommended for selected units to ensure students' active participation in the teaching-learning process and to make the teaching-learning research-oriented.

Units	Specific Instructional Techniques
Unit III Personality, Perception and Employee Attitudes (Sub-units) <ul style="list-style-type: none"> • Measuring teachers' attitudes • Measuring job satisfaction 	<p style="text-align: center;">Experiential Exercises</p> <ul style="list-style-type: none"> • Divide the class into groups of four or five students. Let them do a simulation exercise to measure the attitude of the students of their own department or any other department as if they are employees of an organization using a sample attitude survey given in the book Organizational Behavior (10th edition) written by Stephen P. Robbins. Refer to page 77 of the book. Let the groups of students present their reports in the class. Let the students discuss in the class. • Let these groups of students do experiential exercises related to most important factors of job satisfaction in their own department. Refer to page 99 of the book Organizational Behavior written by Stephen P. Robbins, Timothy A. Judge and Seema Sanghi. Let the students present their report. Let them discuss the presentation.
Unit V Organizational Culture	<p style="text-align: center;">Experiential Exercises</p> <ul style="list-style-type: none"> • Divide the students into several groups as required to let them work in groups. • Let the groups of students use a sample tool related to rating of classroom culture among their peers of their own department. Refer to page 630 of the book Organizational Behavior written by Stephen P. Robbins, Timothy A. Judge and Seema Sanghi. • Let them calculate the scores and then analyze and interpret the scores. • Let the class discuss the results after presentation of the brief report.

5. Evaluation Schemes

5.1 Internal evaluation (40%)

The concerned teacher will carry out the internal evaluation of the students based on the following criteria.

1. Attendance	5 points
2. Participation in learning	5 points
3. First assignment/assessment	10 points
4. Second assignment/assessment (Mid-term test)	10 points
5. Third assessment	10 points
Total	40 Points

5.2 External evaluation (60%)

Examination section, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The number of items in each category of questions and the distribution of points to be included in the final examination paper are as follows:

1. Objective questions (10 Multiple choice items x 1 point)	10 points
2. Short-answer questions (5 questions with 2 choices x 6 points)	30 points
3. Long-answer questions (2 questions with 1 choice x 10 points)	20 points
	<hr/>
Total	60

Points

6. Recommended Books and References

6.1 Recommended books

- Dwivedi, R. S. (2008). *Human relations and organizational behavior*. Chennai: Macmillan India Limited. (For unit I pp. 150 – 156)
- Hanson, E. M. (1996). *Educational administration and organizational behavior*. Boston: Allyn and Bacon. (For unit 5)
- Ken, A. (2002). *Effective management in the south*. Kathmandu: EKTA Books. (For unit 4)
- Luthans, F. (2011). *Organizational behavior: An evidence-based approach*. New Delhi: McGraw Hill Education (India) Private Limited. (For units 1, 3, 4, 5, 6 and 7)
- Robbins, S. P., Judge, T. A. & Sanghi, S. (2009). *Organizational behavior*. Delhi: Pearson Education, Inc. (For units 2, 3, 4, 5, 6 and 7)
- Weihrich, H. & Koontz, H. (2005). *Management: A global perspective*. New Delhi: Tata McGraw-Hill Publishing Company Limited. (For unit 4)

6.2 References

- Hersey, P. & Blanchard, K. (1993). *Management of organizational behavior*. New Jersey: A Simon & Schuster Company Englewood Cliffs.
- Newstrom, J. W. (2012). *Organizational behavior: Human behavior at work*. New Delhi: Tata McGraw Education Private Limited
- Owens, R. G. & Valesky, T. C. (2014). *Organizational behavior in education: Leadership and school reform*. Pearson Education, Ltd.
- Robbins, S. P. (2009). *Organizational behavior*. Delhi: Pearson Education, Inc.
- Robbins, S. P., Judge, T. A. & Vohra, N. (2011). *Organizational behavior*. Delhi: Pearson Education, Inc.

English Education

Eng. Ed. 515: Phonetics and Phonology

Eng. Ed. 516: English Usage and Use

Eng. Ed. 517: Interdisciplinary Readings

Eng. Ed. 518: Second Language Acquisition (SLA) Theories and Research

Eng. Ed. 515: Phonetics and Phonology

Course No.: Eng. Ed. 515

Nature of course: Theoretical

Level: M.Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Introduction

This course explores speech sounds as physical entities (phonetics) and linguistic units (phonology). In viewing sounds as physical elements, the focus of this course is on articulatory description, types of movements and configurations of the vocal tract to produce sounds in languages. The course aims to equip students with the knowledge and skills required to produce and analyze both segmental and supra-segmental features of language in general and English in particular. The course, then, focuses on dealing with different theories of phonology and their importance, phonological processes in English and formulation of different phonological rules. Finally, there is a discussion on the English phonology in detail and Nepali phonology in brief along with the techniques and activities of teaching English pronunciation.

2. General Objectives

The general objectives of this course are as follows:

- To enable the students to identify, describe, classify and produce the sounds of the languages including English.
- To introduce the students to the major theories of phonology.
- To acquaint the students with the phonological rules inherent in phonological processes in English.
- To equip the students with the techniques of teaching English pronunciation.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Explain the branches of phonetics• Explain different processes of speech production• Produce IPA chart and cardinal vowels• Develop English and Nepali consonant chart from the IPA chart• Develop English and Nepali vowel chart from the cardinal vowels• Use supra-segmental features• Transcribe the text phonetically as well as phonemically	<p>Unit I: Phonetics (16)</p> <p>1.1 Introduction</p> <p> 1.1.1 Phonetics: Articulatory, acoustic and auditory phonetics</p> <p> 1.1.2 Articulators and speech production</p> <p>1.2 Process of speech production: airstream process, phonation process, oro-nasal process, articulatory process</p> <p>1.3 Production of consonants and vowels</p> <p> 1.3.1 IPA consonants with diacritics: Symbols, transcription and production</p> <p> 1.3.2 Cardinal vowels: Symbols, transcription and production</p> <p>1.4 Other aspects of articulation</p> <p> 1.4.1 Complex articulations: Nasalization, labialization, palatalization, velarization and pharyngalization, affrication, double articulation, vowel retroflexion, diphthongization</p> <p> 1.4.2 Supra-segmental features: Stress, length, rhythm,</p>

	<p>intonation and tone</p> <p>1.4.3 Syllables and syllabification</p> <p>1.5 Phonetic transcription</p> <p>1.5.1 Speech and writing/ transcribing: Phonetic transcription, phonemic transcription, transliteration</p> <p>Project work: Transcriptions (broad and narrow) and production/practice of speech sounds using PRAAT software or speech analyzer, etc.)</p>
<ul style="list-style-type: none"> • Describe phonology and differentiate it with phonetics • Differentiate classical with generative phonology • Distinguish between linear and non-linear phonology • State different views of phoneme • Analyze the phonemes and allophones • Formulate different phonological rules 	<p>Unit II: Phonology (12)</p> <p>2.1 Phonetics and phonology</p> <p>2.2 Classical phonology and generative phonology</p> <p>2.3 Linear phonology and non-linear phonology</p> <p>2.4 Concept of phoneme (as a phonetic/ phonological/ psychological reality), phone, allophone</p> <p>2.5 Phonological analysis</p> <p> 2.5.1 Complementary distribution</p> <p> 2.5.2 Co-incident distribution: minimal pair</p> <p> 2.5.3 Overlapping distribution</p> <p> 2.5.4 Pattern congruity</p> <p> 2.5.5 Free variation</p> <p>2.6 Phonological processes: Assimilation, addition, deletion, neutralization, reordering</p> <p>2.7 Phonological rules</p> <p> 2.7.1 Formulation of rules</p> <p> 2.7.2 Underlying representations and phonetic representations</p> <p> 2.7.3 Rule collapsing/combining rules</p> <p> 2.7.4 Rule ordering</p> <p>Project work: Phonemic analysis and formulation of rules</p>
<ul style="list-style-type: none"> • Describe and classify English speech sounds from RP (Received Pronunciation) and GA (General American) • Describe the speech sounds with their distinctive features • Describe rules for English consonant and vowel allophones • Find out the similarities 	<p>Unit III: English Phonology and Teaching Pronunciation (20)</p> <p>3.1 English phonology: RP and GA</p> <p> 3.1.1 Segmental phonology: Vowels and consonants</p> <p> 3.1.2 Supra-segmental phonology</p> <p> 3.1.3 Distinctive features of English sounds</p> <p> 3.1.3.1 Features inventories: Major class features, vocalic features, consonantal features, prosodic features/features of supra-segments</p> <p> 3.1.3.2 Redundant and contrastive features</p> <p> 3.1.3.3 Rules for English consonant allophones</p> <p> 3.1.3.4 Rules for English vowel allophones</p> <p>3.2 Teaching pronunciation</p> <p> 3.2.1 Rationale for teaching pronunciation</p>

<p>(positive transfer) and differences (negative transfer) between English and Nepali phonology</p> <ul style="list-style-type: none"> • List out the major difficult areas in learning English for Nepali speakers • Teach English pronunciation using appropriate activities • Prepare a lesson plan for remedial teaching in teaching pronunciation 	<p>3.2.2 English phonology and Nepali phonology (or other mother tongues)</p> <p>3.2.3 Non-native speakers in English pronunciation</p> <p>3.2.4 Techniques and activities of teaching pronunciation</p> <p>Project work: Production/practice of speech sounds using PRAAT software or speech analyzer, etc.)</p> <p>Make a brief survey of English/ Nepali sounds from their articulatory phonetic features.</p> <p>Carry out a mini-research on challenges and strategies of non-native speakers in teaching pronunciation</p>
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Note: The figures in the parenthesis indicate approximate teaching hours for respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the particular units.

4.1 General Instructional Techniques

- Lecture
- Discussion
- Explanation and illustration
- Phonetic practice of phonological data sets
- Self-study
- Small-scale research
- Group and pair works
- Inquiry and discovery

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
I	<p>Mini-project (theoretical survey of fundamental concepts of phonetics, and phonetic symbols)</p> <p>Instructor-guided self-study, open class discussion</p> <p>Practice of speech sounds using software PRAAT, Speech analyzer</p>
II	Mini-project (survey of phonological theories, and formulation of different

	phonological rules) Instructor-guided self-study, open class discussion
III	Mini-project (survey of comparative study of English phonology i.e. RP English and General American English/ Contrastive analysis: English phonology and Nepali/ native phonology) Instructor guided research work/ lesson plan preparation/peer teaching

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by the instructor based on the following activities:

- Attendance 5 marks
- Participation in learning activities 5 marks
- First assignment/mid-term exam 10 marks
- Second assignment/assessment 10 marks
- Third assignment/assessment 10 marks

The teacher can develop multiple activities for assignments, depending on the nature of the course/topic and students' interests. Such activities may include book review, article review, term paper on specific issue/topic, or unit test\quiz, project work, case study, survey/field study, individual/group report writing, literature review, and a research article based on primary and/or secondary data.

5.2 External Evaluation (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester.

1. Objective questions (multiple choice questions) (10 x 1) = 10 marks
2. Short answer questions (6 questions with 2 OR questions) (6x 5) = 30 marks
3. Long answer questions (2 questions with 1 OR question (2 x 10) = 20 marks

6. Recommended Books and References

6.1 Recommended Books

Clark, J. & C. Yallop. (1990). *An introduction to phonetics and phonology*. Oxford: Basil Blackwell.
(Unit I, II, III)

Giegerich, H. J. (2009). *English phonology: An introduction*. Cambridge: Cambridge University Press. (Unit III)

- Gussman, E. (2002). *Phonology: Analysis and theory*. Cambridge: Cambridge University Press. (Unit II)
- Hyman, L. (1975). *Phonology: Theory and analysis*. N.Y.: Holt Rinehart and Winston. (Unit II)
- Jensen, J. T. (2004). *Principles of generative phonology: An introduction*. Amsterdam: John Benjamins Publishing Company. (Unit II)
- McCarthy, J. (1982). *Nonlinear phonology: An overview*. University of Texas at Austin and University of Massachusetts, Amherst GLOW Newsletter 8, February 1982. Retrieved from <http://meertens.knaw.nl/glow2002/mccarthy.pdf> (Unit II)
- Katamba, F. (1996). *An introduction to phonology*. London: Longman. (Unit II)
- Kelly, G. (2000). *How to teach pronunciation*. London: Longman. (Unit III)
- Ladefoged, P. (2006). *A course in phonetics*. Boston: Thomson Wadsworth. (Unit I, III)
- Ladefoged, P. & I. Maddieson. (1996). *The sounds of the world's language*. Oxford: Basil Blackwell.
- Lass, R. (2010). *Phonology*. Cambridge: CUP. (Unit II)
- International Phonetic Association (1999). *Handbook of the international phonetic association: A guide to the use of the international phonetic alphabet*. Cambridge: Cambridge University Press. (Unit I)
- Schane, S.A. (1973). *Generative phonology*. Englewood-cliffs. N.J. Prentice Hall. (Unit II)

6.2 References

- Abercrombie, D. (1967). *Elements of general phonetics*. Edinburgh: Edinburgh University Press.
- Ashby, M. & Maidment, J. (2008). *Introducing phonetic science*. Cambridge: CUP.
- Ashby, P. (1995). *Speech sounds*. London: Routledge.
- Bhaskararao, P., (1977). *Practical phonetics*, Pune: Deccan College. I, III
- Clark, J., Yallop, C. & Fletcher, J. (2006). *An introduction to phonetics and phonology*. New York: Blackwell.
- Collins, B. & Mees, I. M. (2008). *Practical phonetics and phonology*. London and New York: Routledge.
- Dalton, C. & Seidlhofer, B. (2001). *Pronunciation*. Oxford: OUP.
- Fisher-Jorgensen, G. (1975). *Trends in phonological analysis*. Copenhagen: Akadernish Forlag
- Kenworthy, J. (1987). *Teaching English pronunciation*. London: Longman.

- Ladefoged, P. (2001). *Vowels and consonants: An introduction to the sounds of language of the world*. Oxford: Blackwell.
- Ladefoged, P. (2003). *Phonetic data analysis: An introduction to fieldwork, and instrumental techniques*. Oxford: Blackwell.
- Laver, J. (1994). *Principles of phonetics*. Cambridge: University Press.
- O'Corner, J.D. (1973). *Phonetics*. London: Penguin.
- Odden, D. (2005). *Introducing phonology*. Cambridge: Cambridge University Press.
- Pike, K.L. (1947). *Phonemics*. Ann Arbor: The University of Michigan Press.
- Roach, P. (2001). *Phonetics*. Oxford: Oxford University Press.
- Rocca, I. & Wyn J. (1999). *A course in phonology*. Oxford: Blackwell Publishers.
- Trubetzkoy, N. S. (1973). *Principles of phonology*. Baltaxe, CAM (Trans) 1969. Berkeley: University of California Press.

Eng. Ed. 516: English Usage and Use

Course No.: Eng. Ed. 516
Level.: M.Ed.
Semester: First

Nature of course: Theoretical
Credit hours: 3
Teaching hours: 48

1. Course Introduction

English Usage and Use is an advanced-level course of English syntax that is directly interfaced with semantic and pragmatic dimensions. The course is integrated in nature that begins with the broader theoretical perspective on the syntactic aspects of grammar and moves through English usage and its use in action and finally ends with their pedagogical extension.

2. General Objectives

The objectives of this course are as follows:

- To develop the students' insights into various approaches to grammar in general and English grammar in particular.
- To enhance sound knowledge of English grammar.
- To enable the students to be aware of grammaticality in language skills.
- To help the students exploit various principles, techniques and resources of teaching English grammar for pedagogical purposes.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Develop theoretical insights into various approaches/theories conceptualizing grammar • Develop an awareness of issues associated with teaching grammar 	<p>Unit I: Overview (8)</p> <p>1.1. Theories of conceptualizing grammar <ul style="list-style-type: none"> 1.1.1. Introduction 1.1.2. Formal and functional grammar 1.1.3. Traditional Grammar 1.1.4. Structuralism 1.1.5. Generativism 1.1.6. Communicative grammar </p> <p>1.2. Approaches to grammatical analysis <ul style="list-style-type: none"> 1.2.1 Descriptive approach 1.2.2 Prescriptive approach </p> <p>1.3. To teach or not to teach grammar</p>
<ul style="list-style-type: none"> • Explain the variations in English grammar based on various dimensions. 	<p>Unit II: English Usage (15)</p> <p>2.1 Grammar usage in varieties of English</p> <p>2.2 Coherence and cohesion in English (grammatical and lexical cohesion)</p> <p>2.3 Information structuring</p>

<ul style="list-style-type: none"> • Produce English sentences with accuracy and appropriateness. • Describe major word classes and their usages • Form units of grammar and their usages 	<p>2.4 Given-new contract 2.5 Fronting 2.6 Focused structures (cleft and pseudo-cleft sentences) 2.7 Nominalization 2.8 Sentences: Types and discourse functions (coordination and subordination) 2.9 Semantics of verb phrase (narrative, reporting, describing, concluding and evaluating) 2.10 Modal verbs 2.11 Modality 2.12 Passive constructions 2.13 Reporting 2.14 Conditionals 2.15 Discourse markers 2.16 Comparative structures</p>
<ul style="list-style-type: none"> • Discuss the overview of teaching grammar • Apply various approaches to teaching grammar. • Carry out research on teaching grammar • Review the existing practices in teaching grammar home and abroad 	<p>Unit III: Pedagogy of Grammar (15)</p> <p>3.1 Historical overview of teaching grammar 3.2 Impact of research in grammar teaching 3.3 Inductive and deductive approaches 3.4 Focus on form and function 3.5 Teaching grammar in context 3.6 Teaching grammar through processing instruction 3.7 Functional approach 3.8 Corpus based approach 3.9 Comprehension and production based grammar instruction 3.10 Teaching and learning of English grammar in the context of Nepal</p>
<ul style="list-style-type: none"> • Find out necessary resources to teach grammar • Prepare materials to teach grammar 	<p>Unit IV: Resources and Technology in Teaching Grammar (10)</p> <p>4.1 Resources, techniques, and activities for teaching grammar 4.2 Exploiting technology and online resources for teaching and learning grammar 4.3 Designing materials for teaching grammar</p>

Note: The figures in the parenthesis indicate approximate teaching hours for respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the particular units.

4.1 General instructional techniques

- Lecture and demonstration
 - Discussion
 - Explanation and illustration
 - Self-study and small-scale research
 - Group and pair works
 - Discovery and inquiry

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
I	Mini-project work (Theoretical survey of the approaches) each group is involved in research and preparation of report
II	Instructor-guided self-study, group discussion
III	Mini-projects on pedagogical approaches to grammar
IV	Designing materials for teaching grammar

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

- | | |
|---|----------|
| 1. Attendance | 5 marks |
| 2. Participation in learning activities | 5 marks |
| 3. First assignment/midterm exam | 10 marks |
| 4. Second assignment | 10 marks |
| 5. Third assignment/assessment | 10 marks |

Total **40 marks**

Note: The teacher can develop multiple activities for assignments, depending on the nature of the course/topic and students' interests. Such activities may include book review, article review, term paper on specific issue/topic, or unit test\quiz, project work, case study, survey/field study, individual/group report writing, literature review and a research article based on primary and/or secondary data.

5.2 External Evaluation (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester.

- | | |
|--|------------|
| Objective questions (multiple choice questions) (10 x 1) | = 10 marks |
| 2. Short answer questions (6 questions with 2 OR questions) (6x 5) | = 30 marks |
| 3. Long answer questions (2 questions with 1 OR question (2 x 10) | = 20 marks |

6. Recommended Books and References

6.1 Recommended Books

- Blakemore, D. (2006). Discourse markers. In L. R. Horn & G. Ward (Eds.), *The Handbook of Pragmatics* (pp. 221–240). (Unit II)
- Boye, K. (2012). Modality. In C. Chapelle (Ed.), *The Encyclopedia of Applied Linguistics*. (Unit II)
- Campbell, R. N., & Wales, R. J. (1969). Comparative structures in English. *Journal of Linguistics*, 5(2), 215–251. (Unit II)
- Celce-Murcia, M., & Hilles, S. (1988). *Techniques and resources in teaching grammar*. Oxford: OUP. (Unit IV)
- Celce-Murcia, M. (2015). An overview of teaching grammar in ELT. In M. Christison, D. Christian, P. A. Duff, & N. Spada (Eds.), *Teaching and learning English grammar: Research findings and future directions* (pp. 3–18). New York: Routledge. (Unit III)
- Ellis, R. (2016). Focus on form: A critical review. *Language Teaching Research*, 20(3), 405–428. (Unit III)
- Frigional, E. (2018). *Corpus linguistics for English teachers: Tools, online resources, and classroom activities*. Routledge. (Unit III)
- Graus, J., & Coppen, P.A. (2016). Student teacher beliefs on grammar instruction. *Language Teaching Research*, 20(5), 571–599. (Unit I)
- Gundel, J. (2012). Information structure. In C. A. Chapelle (Ed.), *The Encyclopedia of Applied Linguistics*. (Unit II)
- Hewings, A. & Hewings, M. (2005). *Grammar and context*. London: Routledge. (Unit I)
- Jean, G., & Simard, D. (2013). Deductive versus inductive grammar instruction: Investigating possible relationships between gains, preferences and learning styles. *System*, 41(4), 1023–1042. (Unit III)
- Kehler, A. (2006). Discourse coherence. In L. R. Horn & G. Ward (Eds.), *The Handbook of Pragmatics* (pp. 241–265). (Unit II)
- Larsen-Freeman, D. (2015). Research into practice: Grammar learning and teaching. *Language Teaching*, 48(2), 263–280. (Unit III)
- Levin, S. R. (1960). Comparing traditional and structural grammar. *College English*, 21(5), 260–265. (Unit I)
- Liamkina, O., & Ryshina-Pankova, M. (2012). Grammar dilemma: Teaching grammar as a resource for making meaning. *The Modern Language Journal*, 96(2), 270–289. (Unit III)

- Lin, M. H. (2016). Effects of corpus-aided language learning in the EFL grammar classroom: A case study of students' learning attitudes and teachers' perceptions in Taiwan. *TESOL Quarterly*, 50(4), 871–893. (Unit III)
- Liu, D., & Jiang, P. (2009). Using a corpus-based lexicogrammatical approach to grammar instruction in EFL and ESL contexts. *The Modern Language Journal*, 93(1), 61–78. (Unit III)
- Macaro, E., & Masterman, L. (2006). Does intensive explicit grammar instruction make all the difference? *Language Teaching Research*, 10(3), 297–327. (Unit III)
- Mihatsch, W. (2012). Hedges. In C. A. Chapelle (Ed.), *The Encyclopedia of Applied Linguistics*. (Unit II)
- Nichols, J. (1984). Functional theories of grammar. *Annual Review of Anthropology*, 13(1), 97–117. (Unit I)
- Nunan, D. (1998). Teaching grammar in context. *ELT Journal*, 52(2), 101–109. (Unit III)
- Ohlander, S. (2012). Prescriptive and descriptive grammar. In C. A. Chapelle (Ed.), *The Encyclopedia of Applied Linguistics*. (Unit I)
- Pelosi, A. G. (1973). What is “grammar”? *The Modern Language Journal*, 57(7), 329–335. (Unit I)
- Shintani, N., Li, S., & Ellis, R. (2013). Comprehension-based versus production-based grammar instruction: A meta-analysis of comparative studies. *Language Learning*, 63(2), 296–329. (Unit III)
- Swan, M. & Walter, C. (2011). *Oxford English grammar course: Advanced*. Oxford: OUP. (Unit II)
- Thornbury, S. (1999). *How to teach grammar*. England: Pearson Education Limited. (Unit IV)
- Usón, R. M. (2012). Formal and functional approaches to grammar. In C. A. Chapelle (Ed.), *The Encyclopedia of Applied Linguistics*. (Unit I)
- VanPatten, B. (2018). Processing Instruction. In *The TESOL Encyclopedia of English Language Teaching* (pp. 1–7). (Unit III)
- VanPatten, B., Collopy, E., Price, J. E., Borst, S., & Qualin, A. (2013). Explicit information, grammatical sensitivity, and the first-noun principle: A cross-linguistic study in processing instruction: the modern language journal. *The Modern Language Journal*, 97(2), 506–527. (Unit III)
- Wasow, T. (2017). Generative grammar. In M. Aronoff & Rees-Miller (Eds.), *The Handbook of Linguistics* (pp. 119–139). (Unit I)
- Yule, G. (2006). *Advanced oxford practice grammar*. Oxford: OUP. (Unit II)

6.2 References

- Bhandari, B. M. (2012). *What, why and how of doing grammar?* An interview published on <http://neltachoutari.wordpress.com/?s=bal+mukunda+bhandari> (Unit IV)
- Bhattarai, A. (2014). *A short review of grammar in FL/SL pedagogy: Current trends of teaching grammar*. Kathmandu: Ratna Pustak Bhandar. (Unit I, IV)
- Blake, N. F. (1988). *Traditional English grammar and beyond*. Basingstoke: Macmillan. (Unit I)

- Chan, M. (2018). Processing instruction in helping map forms and meaning in second language acquisition of English simple past. *The Journal of Educational Research*, 111(6), 720–732. (Unit III)
- Cowan, R. (2009). *The teacher's grammar of English*. Cambridge: Cambridge University Press. (Units II,III,IV)
- Greenbaum, S. & Quirk, R. (2008). *A student's grammar of the English language*. India: Pearson. (Unit II)
- Helmantel, M., Arends, E., & Canrinus, E. T. (2014). The effectiveness of deductive, inductive, implicit and incidental grammatical instruction in second language classrooms. *System*, 45, 198–210. (Unit III)
- Leech, G. & Svartvik, J. (2007). *A communicative grammar of English*. London: Pearson. (Units II, III)
- Lew, W. M. (2008). *Processing instruction and second language grammar acquisition*. 8(2), 1–33. (Unit III)
- Lieber, R. (2018). *English nouns: The ecology of nominalization* (First paperback edition). Cambridge: Cambridge University Press. (Unit II)
- NELTA Chautari (2012). *May, 2012 issue*. <http://neltachoutari.wordpress.com/> (All units)
- Salkie, R., Busuttil, P., & Auwera, J. van der (Eds.). (2009). *Modality in English: Theory and description*. Berlin ; New York: Mouton de Gruyter. (Unit II)
- Shintani, N. (2015). The incidental grammar acquisition in focus on form and focus on forms instruction for young beginner learners. *TESOL Quarterly*, 49(1), 115–140. (Unit III)
- Sinclair, J. (1991/). *Collins Cobuild English grammar*. London: The University of Birmingham. (Unit II)
- Tomkow, T. A. (1980). What is Grammar? *Canadian Journal of Philosophy*, 10(sup1), 61–82. (Unit 1)
- Valeo, A. (2018). Isolated versus integrated form-focused instruction. In *The TESOL encyclopedia of English language teaching* (pp. 1–6). (Unit III)
- Weaver, C. (1996b). Teaching grammar in the context of writing. *The English Journal*, 85(7), 15–24. (Unit III)

Eng. Ed. 517: Interdisciplinary Readings

Course No.: Eng. Ed. 517

Nature of the course: Theoretical

Level: M. Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Introduction

Interdisciplinary Readings is a thematically organized course which exposes the students to content knowledge and linguistic resources employed in communication to the wider readership. Content knowledge draws on such diverse disciplines such as philosophy, humanity and creativity; education, vision and critical thinking; democracy and freedom; linguistics, politics and identity; sports, adventure and entertainment; science, technology and environment; post-modern realities; anthropology and culture; and population and economic development. This course seeks to explore the cross-disciplinary links and their relevance to the contemporary world. Each unit contains varied selection of reading texts anchored to a broader theme.

2. General Objectives

The general objectives of the course are as follows:

- To assist the students develop linguistic skills by reading interdisciplinary texts.
- To develop the students' critical and creative reading and writing abilities in English for academic purposes.
- To enhance the students' interdisciplinary reading and writing skills.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Critically review the texts that link philosophy with humanity	<p>Unit I: Philosophy, Humanity and Creativity (6)</p> <p>1.1 The Top Hat <i>by Jostein Garder</i> 1.2 New Millennium, New Human Being <i>by Osho</i> 1.3 Virtue of Knowledge <i>by T.Z. Lavine</i> 1.4 Levels of Commitment <i>by Dalai Lama</i> 1.5 You Can Create When your Heart Longs for Singing <i>by Govinda Raj Bhattarai</i> 1.6 I'm Glad you Liked It 1Q84 <i>by Haruki Murakami</i></p>
<ul style="list-style-type: none">• Analyze and evaluate texts on education and find its relevance in Nepalese context• Analyze the texts on	<p>Unit II: Education, Vision and Critical Thinking (6)</p> <p>2.1 Education and the Significance of Life <i>by J.Krishnamurti</i> 2.2 Joys that Sprouted with Letters <i>by Jhamak Ghimire</i> 2.3 Three Days to See <i>by Hellen Keller</i> 2.4 Reading and Writing <i>by Nietzsche</i> 2.5 Is Literature Language? Or is Language Literature? <i>by</i></p>

<p>vision and critical thinking and present their views</p>	<p><i>Burke & Brumfit</i> 2.6.Keeping Errors at Bay by <i>Bertrand Russell</i></p>
<ul style="list-style-type: none"> • Compare and contrast the notions of democracy and human rights home and abroad. 	<p>Unit III: Democracy and Freedom (4)</p> <p>3.1. The Twentieth Century: The Triumph of Democracy by <i>Van Doren</i> 3.2. Atmabrittanta: Late life Recollections by <i>BP Koirala</i> 3.3. The politics of Fear by <i>Al Gore</i> 3.4. Equal Rights for Women by <i>Shirley Chisholm</i></p>
<ul style="list-style-type: none"> • Explore multiple facets of language in relation to educational and social politics. • Explore different forms and manifestations of identity and analyse them critically 	<p>Unit IV: Linguistics, Politics and Identity (6)</p> <p>4.1. Beyond Language by <i>Frits of Capra</i> 4.2. Is Nepal Small? by <i>Laxmi Prasad Devkota</i> 4.3. A Letter from Gautam Buddha to Ashoka by <i>Krishna Chandra Singh Pradhan</i> 4.4. Can the Subaltern Speak? by <i>Gayatri Spivak</i> 4.5. The Formation of the Intellectuals by <i>Antonio Gramsci</i></p>
<ul style="list-style-type: none"> • Interpret the texts on sports, adventure and entertainment and appreciate their aesthetic values in life. 	<p>Unit V : Sports, Adventure and Entertainment (4)</p> <p>5.1. Everest: The West Ridge by <i>Jon Krakauer</i> 5.2. Kapil's Devil by <i>John Woodcock</i> 5.3. Face to Face with Bismillah Khan by <i>Shekhar Gupta</i></p>
<ul style="list-style-type: none"> • Appraise and critically evaluate the place of science and technology for the welfare of humanity 	<p>Unit VI: Science, Technology and Environment (3)</p> <p>6.1. What It All Means by <i>Will Richardson</i> 6.2. Going for the Green by <i>T. L. Friedman</i></p>
<ul style="list-style-type: none"> • Discuss and argue on various issues of postmodernism and its implications 	<p>Unit VII : Postmodern Realities (5)</p> <p>7.1. The Postmodern: Problem with Prefixation by <i>Uday Narayan Singh</i> 7.2. Answering the Question: What is Postmodernism ? by <i>Jean Francois Lyotard</i> 7.3. What is Deconstruction? by <i>Nicholas Royle</i></p>
<ul style="list-style-type: none"> • Interpret the nexus between human and animal. • Discuss traditional knowledge in determining climate change. 	<p>Unit VIII : Anthropology and Culture (6)</p> <p>8.1. Lives with Others: Climate Change and Human-Animal Relations by <i>Rebecca Cassidy</i> 8.2. Contributions of Traditional Knowledge to Understanding Climate Change by <i>Dyanna Riedlinger and Fikret Berkes</i></p>

<ul style="list-style-type: none"> Analyze different issues of culture and infer conclusion 	8.3. Culture and Anarchy by <i>Mathew Arnold</i> 8.4. Mass Civilization and Minority Culture by <i>F. R. Leavis</i>
<ul style="list-style-type: none"> Analyze the relationship between demographic change and economic development 	Unit IX: Population and Economic Development (3) 9.1. Changing Demographics and Economic Growth by <i>David E. Bloom</i> 9.2. Population, Poverty and Economic Development by <i>Steven W. Sinding</i>
<ul style="list-style-type: none"> Narrate the plot of Novels Discuss the theme of novels Assimilate the theme of novels to life experiences 	Unit X: Novels (5) 10.1. Black Beauty by <i>Anna Sewell</i> 10.2. Jonathan Livingstone Seagull by <i>Richard Bach</i>

Note: The figures in the parenthesis indicate approximate teaching hours for respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the particular units.

4.1 General Instructional Techniques

- Lecture
- Discussion
- Explanation and illustration
- Self-study and small-scale research
- Group and pair work
- Discovery and inquiry
- Read, discuss, write and share (ReDWis)

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
I	Reflective writing
II	Project work
III	Reflective creative writing
IV	Argumentation
V	Mini survey and document analysis
VI	Writing reminiscence

VII	Argumentation
VIII	Project work
IX	Interview and free writing
X	Document analysis

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by the instructor based on the following activities:

- Attendance 5 marks
- Participation in learning activities 5 mark
- First assignment/mid-term exam 10 marks
- Second assignment/assessment 10 marks
- Third assignment/assessment 10 marks

Note: The teacher can develop multiple activities for assignments, depending on the nature of the course/topic and students' interests. Such activities may include book review, article review, term-paper on specific issue/topic, or unit test\quiz, project work, case study, survey/field study, individual/group report writing, literature review and a research article based on primary and/or secondary data.

5.2 External Evaluation (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester.

1. Objective questions (multiple choice questions) (10 x 1) = 10 marks
2. Short answer questions (6 questions with 2 OR questions) (6x 5) = 30 marks
3. Long answer questions (2 questions with 1 OR question (2 x 10) = 20 marks

6. Recommended Books and References

Bach, R. (2014). *Jonathan livingstone seagull*. New York & Toronto: Simon and Schuster (for unit 10).

Sewell, A. (2012). *Black beauty (revised edition)*. Oxford: Oxford University Press (for unit 10).

Bhattarai, G.R. & Bhandari, B.M. (2021). *Interdisciplinary readings*. Kathmandu: Sunlight Publication.

Eng. Ed. 518: Second Language Acquisition (SLA) Theories and Research

Course No.: Eng. Ed. 518

Nature of the course: Theoretical

Level: M. Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Introduction

This course aims at exposing the students to the theoretical foundations in Second Language Acquisition (SLA). The course also engages the students in the SLA research. The course consists of four units. The first unit presents the fundamental concepts of SLA and related disciplines. The second unit exposes the students to the various approaches of SLA including the universal grammar and non-language factors. The third unit presents the overview of different theories and models of SLA. The fourth unit introduces the students to the SLA research and language teaching.

2. General Objectives

The general objectives of this course are as follows:

- To familiarize the students with the fundamental concepts of SLA.
- To acquaint them with the various theories and models of SLA.
- To enable them to review and analyze the theories and models of SLA.
- To engage them in the SLA research.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Describe second language acquisition• Discuss SLA and related disciplines• Analyze the context of bilingual and multilingual education	<p>Unit I: Foundations of Second Language Acquisition (10)</p> <p>1.1. Introducing second Language Acquisition</p> <p style="margin-left: 20px;">1.1.1. First and second language acquisition</p> <p style="margin-left: 20px;">1.1.2. Historical overview of SLA</p> <p style="margin-left: 20px;">1.2. SLA and related disciplines</p> <p style="margin-left: 20px;">1.2.1. First language acquisition</p> <p style="margin-left: 20px;">1.2.2. Third language acquisition</p> <p style="margin-left: 20px;">1.2.3. Heritage language acquisition</p> <p style="margin-left: 20px;">1.2.4. Bilingualism</p> <p style="margin-left: 20px;">1.2.5. Multilingualism</p>
<ul style="list-style-type: none">• Discuss universal grammar• Illustrate the various approaches to SLA• Discuss and analyze interlanguage of the second language learner• Describe the non language factors in SLA	<p>Unit II: Linguistics of SLA (12)</p> <p>2.1 Approaches to SLA</p> <p style="margin-left: 20px;">2.2.1 Formal approaches to SLA and universal grammar</p> <p style="margin-left: 20px;">2.2.2. Typological and functional approaches</p> <p style="margin-left: 20px;">2.2.3. Social interactional approaches and inter-language</p>

	<p>development</p> <p>2.2. Individual differences in SLA</p> <p> 2.2.1. Affects</p> <p> 2.2.2. Social distance</p> <p> 2.2.3. Age differences</p> <p> 2.2.4. Aptitude</p> <p> 2.2.5. Motivation</p> <p> 2.2.6. Personality and learning style</p> <p> 2.2.7. Learning strategies</p>
<ul style="list-style-type: none"> • Explain the theories of SLA • Critique the SLA theories • Compare and contrast the theories and models of SLA • Describe the role of input, interaction and output in SLA 	<p>Unit III: Theories and Models of SLA (12)</p> <p>3.1. SLA Theories</p> <p> 3.1.1 The accommodation theory</p> <p> 3.1.2 Discourse theory</p> <p>3.2. SLA Models</p> <p> 3.2.1 The acculturation model</p> <p> 3.2.2 The nativization model</p> <p>3.3. Input, interaction and output in SLA</p> <p> 3.3.1. Input hypothesis in SLA (Krashen's Hypothesis)</p> <p> 3.3.2. Interaction in SLA (Long's Interactional Hypothesis)</p> <p> 3.3.3. Output in SLA (Swain's output hypothesis, Gass's ideas)</p> <p> 3.3.4. Interactional model of SLA (Schmidt's model): Attention and consciousness raising</p> <p> 3.3.5. Feedback, recasts and negative evidence (focus on examples)</p> <p> 3.3.6. The role of input and interaction in language learning</p>
<ul style="list-style-type: none"> • Explain the nature of second language research • Carryout second language research quantitatively and qualitatively • Combine qualitative and quantitative research in SLA research 	<p>Unit IV: SLA Research and Language Teaching (14)</p> <p>4.1 SLA research and language pedagogy</p> <p> 4.1.1 Models of SLA research use</p> <p> 4.1.2 Perspectives on SLA research (researcher, education, innovationist and applied linguistics)</p> <p>4.2 Application of SLA theory in language pedagogy</p> <p> 4.2.1 Types of L2 knowledge</p>

	<p>4.2.2 Learning implicit and explicit knowledge</p> <p>4.2.3 Designing acquisition-compatible grammar tasks (interpretation tasks and consciousness raising tasks)</p> <p>4.3 Teacher as a researcher (getting started, micro-evaluation, and examples)</p>
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Note: The figures in the parenthesis indicate approximate teaching hours for respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the particular units.

4.1 General Instructional Techniques

- Lecture
- Discussion
- Explanation and illustration
- Phonetic practice of phonological data sets
- Self-study and small-scale research
- Group and pair works
- Discovery and inquiry

4.2 Specific Instructional Techniques

Unit	Activities and instructional techniques
I	Critical reading, reading-reviewing, narrative of L2 learning
II	Assigned reading, mini-research (e.g., to explore individual differences in SLA)
III	Mini-research and presentation
IV	Proposal writing for SLA research

5. Evaluation

5.2 Internal Evaluation 40%

Internal evaluation will be conducted by the instructor based on the following activities:

- | | |
|--|----------|
| • Attendance | 5 marks |
| • Participation in learning activities | 5 marks |
| • First assignment/mid-term exam | 10 marks |
| • Second assignment/assessment | 10 marks |
| • Third assignment/assessment | 10 marks |

The teacher can develop multiple activities for assignments, depending on the nature of the course/topic and students' interests. Such activities may include book review, article review, term paper on specific issue/topic, or unit test\quiz, project work, case study, survey/field study, individual/group report writing, literature review and a research article based on primary and/or secondary data.

5.2 External Evaluation (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester.

- a. Objective questions (multiple choice questions) (10 x 1) = 10 marks
- b. Short answer questions (6 questions with 2 OR questions) (6x 5) = 30 marks
- c. Long answer questions (2 questions with 1 OR question (2 x 10) = 20 marks

6. Recommended Books and References

6.1. Recommended Books

- Baker, C. (1996). *Foundations of bilingual education and bilingualism*. New York. Multilingual Matters Ltd. (Unit I, II, III, IV)
- Brown, J. D. and Rogers T. (2014). *Doing second language research*. Oxford. Oxford University Press. (Unit IV)
- Ellis, R. (1995). *The study of second language acquisition*. Oxford: OUP. (Units I to IV)
- Ellis, R. (1997). *SLA Research and Language Teaching*. Madison Avenue, New York, NY: Oxford University Press. (Unit IV)
- Gass, S. M. with J. Behney and L. Plonsky, L. (2013). *Second language acquisition. An introductory course*. New York. Routledge. (Unit I, II, III, IV)
- Mitchell, R. and Myles, F. (2004). *Second language learning theories*. Britani Hodder Arnold. (Unit I, II, III, IV)
- Saville- Troike, M. (2010) *Introducing second language acquisition*. Cambridge: Cambridge University Press. (Unit I, II, III, IV)

6.2. References

- Bhatta, T. D. (2003). *Simultaneous and successive second language learning of linguistic minority children of Nepal*. An unpublished thesis of M. Phil in second language studies, Danish University of Education, Denmark.
- Brown, J. D. (1994). *Principles of language learning and teaching*. New Jersey: Prentice Hall Regents
- Chaudron, C. (1998). *Second language classroom research*. Cambridge: CUP.
- Cook, V. (2008). *Second language learning and language teaching*. London: Arnold.
- Doughty, C. J. & Long, M. H. (2003). *The handbook of second language acquisition*. Oxford. Blackwell Publishing.
- Ellis, R. (1986). *Understanding second language acquisition*. Oxford: OUP.
- Ellis, R. (1992). *Instructed second language acquisition*. Cornwall: Blackwell
- Ellis, R. (2000). *Second language acquisition*. Oxford: OUP

Geography Education

- i. Geo. Ed. 515: Geomorphology
- ii. Geo. Ed. 516: Population Geography
- iii. Geo. Ed. 517: Geographical Thought
- iv. Geo. Ed. 518: Mountain Geography

Geo. Ed. 515 Geomorphology

Course No.: Geo. Ed. 515

Nature of course: Theoretical

Level: M. Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Introduction

This course has been designed to provide the students with the advanced knowledge of teaching geomorphology. It deals with the fundamental concepts of geomorphology, geomorphic processes and resultant landforms. It provides knowledge to the students on diastrophism process, plate tectonics, hill slope evolution and application of geomorphic knowledge in different sectors of real-life situations.

2. General Objectives

The general objectives of this course are to:

- conceptualize the term of geomorphology and explain its nature, scope and approaches,
- discuss the diastrophism (endogenetic forces and associated process), global tectonics and landforms,
- explain different endogenetic and exogenetic agents and associated processes and resultant landforms,
- analyze hill slopes and their measurement,
- acquaint the students with the knowledge of application of geomorphic education in different sectors of real life, and
- familiarize the students with field study, methods for the collection of geomorphic data and report preparation.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Define geomorphology• Discuss the nature and scope of geomorphology• Illustrate the historical development of geomorphic study• Explain the approaches of geomorphology• Describe the importance of scale in geomorphic study	<p>Unit I: Introduction to Geomorphology (4)</p> <p>1.1 Introduction</p> <p>1.2 Nature and scope</p> <p>1.3 Historical development of geomorphology</p> <p>1.4 Approaches</p> <p>1.5 Geomorphic Scale</p>

<ul style="list-style-type: none"> • Distinguish between epeirogenetic and orogenetic movements • Compare and contrast between endogenous and exogenous forces in relation to diastrophism • Analyze the structure of the earth in terms of geophysical evidences and global topography • Describe the theories related to global tectonics in relation to mountain building • Summarize the pattern of earthquake and areas of volcanism 	<p>Unit II: Movements and Structure of the Earth (8)</p> <p>2.1 Epeirogenetic and orogenetic movements 2.2 Diastrophism: Endogenous and exogenous processes 2.3 Earth structure</p> <ul style="list-style-type: none"> • Geophysical evidences and interpretations • Global topography <p>2.4 Global tectonics and mountain building theories</p> <ul style="list-style-type: none"> • Continental drift theory • Convection current theory • Plate-tectonics theory <p>2.5 Distribution patterns of earthquake and volcanism</p>
<ul style="list-style-type: none"> • Describe the processes of denudation • Explain factors affecting weathering, its type and processes in landform evolution • Describe the causes and types of mass translocation • Compare and contrast between theories of cycle of erosion 	<p>Unit III: Denudation Processes (8)</p> <p>3.1 Denudation processes 3.2 Weathering</p> <ul style="list-style-type: none"> • Factors affecting weathering • Process and types of weathering <p>3.3 Mass movement/translocation</p> <ul style="list-style-type: none"> • Causes • Classification and landform evolution <p>3.4 Theories of cycle of erosion: W.M. Davis, W. Penck and L.C. King</p>
<ul style="list-style-type: none"> • Explain the fluvial cycle and associated landforms • Discuss the processes and associated land features of glacial and peri-glacial regions • Describe the aeolian cycle and associated landforms • Analyze the karst cycle and associated landforms • Describe coastal landforms 	<p>Unit IV: Agent, Process and Landforms (12)</p> <p>4.1 Fluvial cycle and associated landforms 4.2 Glacial and peri-glacial processes and associated landforms 4.3 Aeolian cycle and associated landforms 4.4 Karst cycle and associated landforms 4.5 Costal processes and associated landforms</p>
<ul style="list-style-type: none"> • Describe hill slope development processes • Explain the elements of hill slopes and their characteristics • Classify the segments of hill slopes and measure the hill slopes • Analyze the channel network pattern and morphometry 	<p>Unit V: Hill Slope (7)</p> <p>5.1 Hill slope development processes 5.2 Elements and characteristics 5.3 Classification and measurement of hill slopes 5.4 Hill slope erosion/process of formation 5.5 Channel network pattern and morphometry</p>
<ul style="list-style-type: none"> • Describe the application of geomorphic 	<p>Unit VI: Applied Geomorphology (9)</p> <p>6.1 Geomorphology and engineering projects– road</p>

knowledge in the fields of engineering projects <ul style="list-style-type: none"> • Explain regional planning perspectives, territorial differentiation and difficulties • Analyze the relationship between geomorphology and agriculture • Explain the relationship between geomorphology and natural hazards • Highlight the disaster risk reduction techniques adopted in the homeland area • Develop ideas and skills regarding disaster risk reduction techniques • Analyze the role of geomorphology in education especially in accessibility, problems and opportunities 	construction, hydro dam construction and irrigation canal construction 6.2 Geomorphology and planning– territorial differentiation, planning prospective and difficulties 6.3 Geomorphology and agriculture– plant species diversity, productivity, prospective and problems 6.4 Geomorphology and natural hazards <ul style="list-style-type: none"> • Earthquake • GLOF • Landslide • Flood 6.5 Disaster risk reduction techniques and experiences 6.6 Geomorphology and education– accessibility, problems and opportunities
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Note: The figures within the parentheses indicate the approximate teaching hours.

4. Instructional Techniques

The instructional techniques will be of two types - general and specific. General techniques will be common to all the units whereas the specific techniques will be applied according to the nature of topics in the units to be taught.

4.1 General instructional techniques

Varieties of techniques/methods can be applied for this course. The main techniques/ methods applicable to this course include lecture, question-answer, discussion, observation, class assignment and presentation.

4.2 Specific instructional techniques

Unit	Activities and instructional techniques
I	Provide theoretical concepts of the subject through local examples.
II	Give ideas on diastrophism based on visual aids, Google Earth Maps and Models.
III	Illustrate local weathering processes linking with the theory.
IV	Observation of landforms of local area based on digital and analogue maps.
V	Students' participation for hill slope measurement of local areas.
VI	Field study of susceptible local areas observing landslides, floods and other environmental hazards for the preparation of field reports.

5. Evaluation

The achievement of the students will be assessed through internal and final/semester examination. Forty percent marks will be allotted to internal examination and sixty percent for final/semester examination.

5.1 Internal evaluation (40%)

Forty percent marks are allotted to internal evaluation. Internal evaluation will be conducted by course teacher based on the following criteria:

Activities	Marks allotted
Attendance	5
Classroom activities	5
First assignment	10
Second assignment	10
Third assignment	10
Total	40

5.2 External evaluation (60%)

Examination Division, office of the Dean, Faculty of Education will conduct the final examination at the end of semester. Sixty percent of the marks are allotted to the final examination. The number and types of questions in the final examination will be as follows:

Types of questions	Total questions to be asked	Number of questions to be answered and marks allotted	Total marks
Group A: Multiple choice	10 questions	10 x 1 marks	10
Group B: Short answer	6 with 2 'or' questions	6 x 5 marks	30
Group C: Long answer	2 with 1 'or' question	2 x 10 marks	20
Total			60

6 Recommended Books and References

6.1 Recommended books

Chorely, R. J., Suhumm, S.A. & Sugden, D.E. (1985). *Geomorphology*. New York: Methuen & Co. (Unit I, II, III, and V)

Huggett, R. J. (2007). *Fundamentals of geomorphology* . New York: Taylor and Francis Group. (Unit III, IV & V)

Singh, S. (1985). *Geomorphology*. Gorakhpur: Basundhara Publication. (Unit III, IV & VI)

Sharma, V. K. (1986). *Geomorphology: Earth surface, processes and forms*. New Delhi: Tata MacGrow-Hill Publishing Company Ltd. (Unit I, III & IV)

Thornbury, W. D. (1998). *Principles of geomorphology*. London: John Willey International. (Unit I)

International Federation of Red Cross and Red Crescent Societies (2010). *World disaster report (Focus on urban risk)*. Geneva:Author. (Unit VI)

6.2 References

- Bloom, A. L. (1992). *Geomorphology: A systematic analysis of Cenozoic landforms*. New Delhi: Prentice Hall of India Private Limited.
- Brayant, R. H. (1986). *Physical geography*. London: Heinemann Professional Books.
- Chorely, R. J. & Kennedy, B. A. (1972). *Physical geography: A system approach*. London: Prentice Hall.
- Dayal, P. (1996). *A textbook of geomorphology*. Patna: Sukla Book Depot.
- French, H. M. (2007). *The periglacial environment*. England: John Wiley & Sons Ltd.
- Mool, P. K., Bajracharya, S. R. & Joshi, S. P. (2001). *Inventory of glaciers, glacial lakes and glacial lake outburst floods: Monitoring and early warning systems in the Hindu Kush-Himalayan region, Nepal*. Kathmandu: ICIMOD
- Strahler, A. H & Strahler, A. N. (2001). *Modern physical geography*. New York: John Wiley & Sons Inc.

Geo. Ed. 516 Population Geography

Course No.: Geo. Ed. 516

Nature of course: Theoretical

Level: M. Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Introduction

This course is designed to provide theoretical knowledge of population geography to the students. It intends to develop basic skills and techniques of computing demographic measures and population projections. It also intends to enhance the knowledge regarding theories of population, population resource relation and population policies concerned.

2. General objectives

The general objectives of this course are to:

- enable the students to understand the nature, scope and evolution of population geography and its approaches,
- develop knowledge and skills in computing various demographic measures and project population by using available data,
- enhance the capacity of students to analyze world population growth by regions and trends and levels of fertility, mortality and migration,
- familiarize the students to various population theories with reference to population resource relation, and
- discuss the population policies of selected countries including Nepal.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Describe the nature and scope of population geography• Examine the evolution of population geography• Discuss the approaches of population geography• Analyze the relationship of population geography with other disciplines	<p>Unit I: Introduction to Population Geography (5)</p> <p>1.1 Nature and scope 1.2 Evolution 1.3 Approaches 1.4 Relationship of population geography with other disciplines</p>
<ul style="list-style-type: none">• Discuss the size and growth of the world population• Analyze the population structure by developed and developing countries• Analyze population distribution and density by region• Examine the growth and distribution pattern of population in Nepal	<p>Unit II: World Population (6)</p> <p>2.1 Size, growth and distribution 2.2 Population structure by developed and developing countries 2.3 Population distribution and density 2.4 Population growth and distribution in Nepal</p>
	<p>Unit III: Determinants of Population Change</p>

<ul style="list-style-type: none"> • Analyze the determinants, patterns and measures of fertility • Explain the determinants, patterns and measures of mortality • Discuss the determinants, patterns, measures and consequences of migration • Examine the models of migration • Analyze the migration trend of Nepal 	<p style="text-align: right;">(18)</p> <ul style="list-style-type: none"> 3.1 Fertility: determinants, patterns and measures 3.2 Mortality: determinants, patterns and measures 3.3 Migration: determinants, patterns, measures and consequences 3.4 Theories of migration: Ravenstein, Everette Lee, Zelinsky and Todaro 3.5 Migration trend in Nepal
<ul style="list-style-type: none"> • Highlight the views on population resource relations • Examine the theories in relation to resources • Analyze the demographic transition model in relation to developed and developing countries • Describe the carrying capacity and population-resource ratios • Explain different population resource regions 	<p>Unit IV: Population Resource Relation (6)</p> <ul style="list-style-type: none"> 4.1 Views on population resource relations 4.2 Theories of population (Malthus, Optimum population theory, Marx) in relation to resources 4.3 Demographic transition model 4.4 Carrying capacity and population resource ratio 4.5 Population resource regions
<ul style="list-style-type: none"> • Develop skills of population estimation and forecast • Project population based on various sources of information • Calculate the population growth rate using different indices 	<p>Unit V: Population Growth, Estimation, Forecast and Projection (9)</p> <ul style="list-style-type: none"> 5.1 Population estimation and forecast 5.2 Population projection 5.3 Measures of population growth: <ul style="list-style-type: none"> • Rate of natural increase (RNI), • Arithmetic and Geometric • Growth rate Exponential growth rates
<ul style="list-style-type: none"> • Explain the population policies of developed and developing countries • Examine the population policies and perspective plans of Nepal • Analyze the population management practices in Nepal 	<p>Unit VI: Population Policies (4)</p> <ul style="list-style-type: none"> 6.1 Population policies of developed and developing countries 6.2 Population policies and perspective plans of Nepal 6.3 Population management practices in Nepal

Note: The figures within the parentheses indicate the approximate teaching hours.

4. Instructional Techniques

The instructional techniques will be of two types - general and specific. General techniques will be common to all the units whereas the specific techniques will be applied according to the nature of topics in the units to be taught.

4.1 General instructional techniques

Varieties of techniques/methods can be applied for this course. The general techniques/methods applicable to this course include lecture, question answer, discussion, observation, class assignment and presentation.

4.2 Specific instructional techniques

Unit	Activities and instructional techniques
I	Provide theoretical concepts, nature and scope of population geography using charts.
II	Use graphs to analyze world population trends. Prepare distribution and density maps.
III	Compute the fertility, mortality and migration rates. Use world population data sheets for comparing regional variations of demographic data.
IV	Discuss different views of population resource relation using charts and diagrams to demonstrate population resource relation.
V	Use census and survey data for population projection by region and selected countries.
VI	Provide knowledge about the population policies of developed and developing countries including Nepal.

5. Evaluation Schemes

The achievement of the students will be assessed through internal and final/semester examination. Forty percent marks will be allotted to internal examination and sixty percent to final/semester examination.

5.1 Internal evaluation (40%)

Forty percent marks are allotted to internal evaluation. Internal evaluation will be conducted by course teacher based on the following criteria:

Activities	Marks allotted
Attendance	5
Classroom activities	5
First assignment	10
Second assignment	10
Third assignment	10
Total	40

5.2 External evaluation (60%)

Examination Division of the Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. Sixty percent of the marks are allotted to the final examination. The types and number of questions to be included in the final examination are as follows:

Types of questions	Total questions to be asked	Number of questions to be answered and marks allotted	Total marks

Group A: Multiple choice	10 questions	10 x 1 marks	10
Group B: Short answer	6 with 2 'or' questions	6 x 5 marks	30
Group C: Long answer	2 with 1 'or' question	2 x 10 marks	20
Total			60

6. Recommended Books and References

6.1 Recommended books

- Chandna, R. C. (2010). *A geography of population*. New Delhi: Kalyani Publishers. (Unit I, II, III, IV & VI)
- Jnawali, D. (2001). *Human population: Principles and techniques*. Kathmandu: Manakamana Books. (Unit I, II, III, IV& V)
- PRB (2013). *World population data sheet*. Washington DC: Population Reference Bureau. (Unit II and III)
- PRB (Recent date). *World population data sheet*. Washington DC: Population Reference Bureau. (Unit II & III)

6.2 References

- Bhende, A. & Tara, K. (2010). *Principles of population studies*, Delhi: Himalaya Publishing House.
- CBS. (Recent date). *Population monograph of Nepal Vol. I & II*, Kathmandu: CBS.
- CBS. (Various dates). *Demographic and health sample surveys*, Kathmandu: CBS.
- Clarke, J. I. (1972). *Population geography*, Oxford: Pergamon Press.
- Ghosh, B.N. (1985). *Fundamentals of population geography*, New Delhi: Sterling Publishers.
- CBS, (2012). *National population and housing census 2011*. Kathmandu: CBS.
- MoHP (Recent date). *Nepal Population Report*. Kathmandu: Ministry of Health and Population.
- Srivastava, O. S. (1994). *Demography and population studies*. New Delhi: Vikash Publishing House.
- UNFPA, (Various dates). *State of World population*, New York: UNFPA.

Geo. Ed. 517 Geographical Thought

Course No.: Geo. Ed. 517

Nature of course: Theoretical

Level: M. Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Introduction

This course is designed to orient the students to the knowledge of the historical development of geography in the world. It also deals with various thoughts, recent trends and contemporary themes and traditions in the field of geography including the institutional development of geography in Nepal.

2. General Objectives

The general objectives of this course are to:

- enhance the knowledge and skills of students on geographical ideas and concepts,
- enable students to deal with the major geographical thoughts,
- enable the students to participate in the discourse of major dualism and dichotomies in geography,
- analyze the recent trends in geography,
- familiarize the students with contemporary traditions and major themes of geography, and
- discuss the evolution trends of geography in Nepal.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Analyze the major contribution of different scholars in the historical development of geography• Explain the impact of Christianity in the development of geographical thought• Assess the contribution of Arabian geographers to the development of geography in the dark age• Discuss the importance of exploration, age of discoveries and voyages to the expansion of geographical horizon• Compare the contribution of major geographers during renaissance period	<p>Unit I: Geography before Renaissance (10)</p> <p>1.1 The major contributions of Greek, Roman, Indian and Chinese geography</p> <p>1.2 Geography in the Christian world</p> <p>1.3 The dark age and Arabian world</p> <p>1.4 Impact of exploration, voyages and age of discoveries</p> <p>1.5 The renaissance period</p>
<ul style="list-style-type: none">• Analyze the contributions of Alexander Von Humboldt, Carl Ritter and Bernard Varenius in modern geography	<p>Unit II: Foundation of Modern Geography (3)</p> <p>2.1 Contribution of Humboldt to geography as a</p>

	<p>cosmography/universal science and physical geography</p> <p>2.2 Contribution of Ritter to geography as a regional science and human geography</p> <p>2.3 Contribution of Bernard Varenius from cosmography to scientific geography</p>
<ul style="list-style-type: none"> • Highlight the German schools of geography • Analyze the French schools of geography • Explain the British schools of geography • Analyze the American schools of geography • Discuss Russian schools of geography 	<p>Unit III: Schools of Geographical Thought (10)</p> <p>3.1 German 3.2 French 3.3 British 3.4 American 3.5 Russian</p>
<ul style="list-style-type: none"> • Distinguish between dualism and dichotomies of geographical thoughts • Explain the major dualism and dichotomies in geography 	<p>Unit IV: Dualism and Dichotomies in Geography (6)</p> <p>4.1 Dualism and dichotomies 4.2 Major dualism and dichotomies</p> <ul style="list-style-type: none"> • Vernacular vs academic geography • Systematic vs regional • Physical vs human • Determinism vs possibilism • Local vs global
<ul style="list-style-type: none"> • Compare the views of Schafer and Hartshorne about geography as a spatial science and regional studies • Discuss the impact of quantitative revolution to the study of geography • Discuss the characteristics of behavioral geography • Explain the major traditions and themes of geography • Synthesize the changing paradigm of geography 	<p>Unit V: Contemporary Traditions in Geography (6)</p> <p>5.1 Schafer Hartshorne debate 5.2 Quantitative revolution 5.3 Behavioral geography 5.4 Tradition of geography 5.5 Themes of geography 5.6 Paradigm of geography</p>
<ul style="list-style-type: none"> • Explain the new trends and ideas in the development of geography • Analyze the importance of new tools (GIS & RS) in geographical studies 	<p>Unit VI: New Trends and Ideas (9)</p> <p>6.1 New trends and ideas: Positivism, Idealism, Realism, Humanism, Pragmatism, Functionalism, Marxism, Structuralism and</p>

	Feminism 6.2 New tools in geographic study
<ul style="list-style-type: none"> • Explain the history of the evolution of geography in Nepal • Analyze the institutional development of geography in Nepal • Discuss the contributions of Nepalese geographers in the development of geography • Discourse on the dimensions of geographical research in Nepal 	Unit VII: Development of Geography in Nepal (4) <p>7.1 Historical development of geography in Nepal</p> <p>7.2 Institutional development</p> <p>7.3 Contributions of Nepalese Geographers</p> <p>7.4 Dimensions of geographical research in Nepal</p>

Note: The figures within the parentheses indicate the approximate teaching hours.

4. Instructional Techniques

The instructional techniques will be of two types - general and specific. General techniques will be common to all the units whereas the specific techniques will be applied according to the nature of topics in the units to be taught.

4.1 General instructional techniques

Varieties of techniques/methods can be applied for this course. The general techniques/ methods applicable to this course include lecture, question answer, discussion, observation, class assignment and presentation.

4.2 Specific instructional techniques

Unit	Activities and instructional techniques
I	Provide theoretical concepts of the subject through discussion and demonstration of materials about geography before renaissance.
II	Apply inquiry approach in the beginning of modern geography.
III	Discuss the approaches in different schools of geography based on the views of major contributors of respective schools.
IV	Group discussion in dualism and dichotomies.
V	Discussion of the trends of geography based on literature.
VI	Discussion of the new trends and ideas of geography based on literature. Introduction of new tools in geographical research.
VI	Presentation on the development of geography in Nepal with contributors and

	publications.
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5. Evaluation Schemes

The achievement of the students will be assessed through internal and final/semester examination. Forty percent marks will be allotted to internal examination and sixty percent to final/semester examination.

5.1 Internal evaluation (40%)

Forty percent marks are allotted to internal evaluation. Internal evaluation will be conducted by course teacher based on the following criteria:

Activities	Marks allotted
Attendance	5
Classroom activities	5
First assignment	10
Second assignment	10
Third assignment	10
Total	40

5.2 External evaluation (60%)

Examination Division of the Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. Sixty percent of the marks are allotted to the final examination. The types and number of questions to be included in the final examination are as follows:

Types of questions	Total questions to be asked	Number of questions to be answered and marks allotted	Total marks
Group A: Multiple choice	10 questions	10 x 1 marks	10
Group B: Short answer	6 with 2 'or' questions	6 x 5 marks	30
Group C: Long answer	2 with 1 'or' question	2 x 10 marks	20
Total			60

6. Recommended Books and References

6.1 Recommended books

- Adhikari, S. (1992). *Fundamentals of geographical thought*. Allahabad: Chaitanya Publishing House. (Unit I)
- Harvey, M. E. & Holly, B. P. (Eds.). (1981). *Themes in geographic thought*. London: Croom Helm Ltd. (Unit IV, V & VI)
- Holt-Jensen, A. (2009). *Geography history and concepts: A students' guide*. New Delhi: SAGE Publications. (Unit IV, V & VI)
- Hussian, M. (1990). *Evolution of geographical thought*. Jaipur: Rawat Publication. (Unit II & III)
- James, P. E. & Jeffrey, J. M. (1978). *All possible world: A history of geographical ideas*. New York: John Wiley and Sons. (Unit III)
- Jnawali D., Poudel, K. P., Rijal, S. P., Dhakal, K. R., Awasthi, T. P., & Sigdel, T. P. (2014). *Geography education in Nepal: A study of status and challenges*. A Research Report submitted to University Grants Commission, Nepal. (Unit VII)
- Panday, R. K. (1998). *Pioneers of Nepalese geography: Geography and geographers in Nepal*. Kathmandu: Centre for Nepalese Geographers. (Unit VII)
- Pandey, R. K. (1992). *Geography education: Philosophy and methodology*. Kathmandu: Ratna Pustak Bhandar. (Unit VII)
- Sapkota, K. (2017). *Fundamentals of geographical thought*. Kathmandu: Anupama Khanal. (Unit IV, V & VI)

6.2 References

- Adhikari, J. J. (2003). *Geographical education and studies in Nepal*. (Unpublished Seminar report)
- Bharati, B. (2002). *Development of geographic thought*. Kathmandu: Chandra Bharati.
- Dixit, R. D. (1997). *Geographical thought, contextual history of ideas*. New Delhi: Prentice Hall of India.
- Dixit, R. D. (1994). *The art and science of geography: Integrated readings*. New Delhi: Prentice Hall of India.
- Johnson, R. J. (1991). *Geography and geographers*. London: Pergamon Press.
- Kaushik, S. D. (1984). *Geographical thought and methodology*. Merute: Rastogi Publication.
- Pandey, G. K. (2004). *Origin and evolution of geographical thought*. Kathmandu: Vidyarthi Pustak Bhandar.
- Saxena, J. P. (1974). *History of Geographical Thought*. Gwalior: Kitab Ghar.
- Subedi, B. P. (2014). *The state of geography teaching and research in Nepal*. Kathmandu: Martin Chautari.

Nature of course: Theoretical

Geo. Ed. 518 Mountain Geography

Level: M. Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Introduction

This course is designed to provide the students with the advanced knowledge of teaching mountain geography. It deals with the fundamental concepts of mountains, their aspiration and understanding problems and prospects of mountain terrain with specific references to the Himalayas. In addition, it also helps students to teach mountain landscapes in schools and colleges.

2. General Objectives

The general objectives of this course are to:

- enable the students to understand the definition, origin, types, global distribution of mountains and their characteristics,
- analyze mountain weather, climate, and hydrology,
- enable students to understand mountain morphology, resources and their dynamics (morphometry, climate and resources),
- familiarize students with the relationship between mountains and man (human inhabitation and activities), problems and prospects of building infrastructures and development assets over the mountain.
- enable the students to understand the disasters and risks associated with the mountain landscape and their mitigation,

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Conceptualize the mountain and mountain geography• Explain nature and scope of mountain geography• Discuss the dimensions of mountain geography	Unit I: Mountains and Mountain Geography (3) 1.1 Concept of mountain and mountain geography 1.2 Nature and scope 1.3 Dimensions of mountain geography: physical and human
<ul style="list-style-type: none">• Examine the theories of Isostacy in relation to mountain building• Explain the theories of Geosyncline• Analyze the Plate Tectonic theory in relation to mountain building• Explain the distribution pattern of new folded mountain systems• Discuss and differentiate the geophysical and geological characteristics of the	Unit II: Mountain Building (5) 2.1 Theories of Isostasy 2.2 Theories of Geosyncline 2.3 Plate tectonics 2.4 Distribution patterns of new fold mountain systems 2.5 Geophysical and geological characteristics of the Himalayas

Himalayas	
<ul style="list-style-type: none"> Analyze the spatial variability of mountain weather and climates Discuss the impact of climate change and human adaptations Explain the mountain hydrology – snow, ice, glacial, peri-glacial, glacio-fluvial and river 	Unit III: Mountain Climate and Hydrology (8) <p>3.1 Mountain weather and climate: variation and variability (temperature, precipitation, humidity, sun-shine)</p> <p>3.2 Climate change on human adaptation in the mountains</p> <p>3.3 Hydrology: glacial, peri-glacial, river and drainage pattern</p>
<ul style="list-style-type: none"> Acquire the concept of resource relation Discuss the measurement techniques of mountain morphology Examine the biophysical attributes of the mountains Explain the resource endowment status of the mountains Discuss the natural heritage and wildlife conservation practices in the mountains 	Unit IV: Mountain Morphology and Resources (8) <p>4.1 Concept of resource relation</p> <p>4.2 Measurement of mountain morphology (altitude, slope, aspect, relief, roughness)</p> <p>4.3 Biophysical attributes of the mountain (natural vegetation and soils)</p> <p>4.4 Mountain resource endowments – water, minerals, biological, aesthetics</p> <p>4.5 Natural heritage and wildlife conservation practices</p>
<ul style="list-style-type: none"> Illustrate the distribution patterns of population and settlement in the mountains Analyze the human activities and livelihoods of the mountain communities Examine the present status, problems and prospects of infrastructure development in the mountains 	Unit V: Settlements and Livelihoods (9) <p>5.1 Population distribution and their settlement patterns</p> <p>5.2 Human activities and livelihood – primary (agriculture, pasture), secondary and tertiary activities</p> <p>5.3 Infrastructure development (irrigation, road and industry)</p>
<ul style="list-style-type: none"> Analyze the altitudinal zonation model in the context of mountain development Explain mountain perspective and sustainability concern Examine the sanctuary theory of mountain development Describe high altitude economy in the context of Nepal 	Unit VI: Mountains Development Models (8) <p>6.1 Accessibility and altitudinal zonation Model</p> <p>6.2 Mountain perspective and sustainability</p> <p>6.3 Sanctuary theory</p> <p>6.4 A high-altitude economy</p>
<ul style="list-style-type: none"> Discuss the geophysical and atmospheric hazards and risks over the mountain Explain the glacial and water induced hazards and risks Analyze the man-made hazards and risks Examine the disaster risk reduction strategies and mitigation measures with reference to Nepal 	Unit VII: Disaster and Risk Management (7) <p>7.1 Geophysical and atmospheric hazards and risks (earthquake, volcanic eruptions, storm, hailstone, and lightning)</p> <p>7.2 Glacial and water induced hazards and risks</p> <p>7.3 Man-made hazards and risks– outburst of hydropower dams, collapse of multistory buildings, landslides along the roads</p>

7.4 Risk reduction and mitigation practices

Note: The figures within the parentheses indicate the approximate teaching hours.

4. Instructional Techniques

The instructional techniques will be of two types - general and specific. General techniques will be common to all the units whereas the specific techniques will be applied according to the nature of topics in the units to be taught.

4.1 General instructional techniques

Varieties of techniques/methods can be applied for this course. The general techniques/methods applicable to this course include lecture, question answer, discussion, observation, class assignment and presentation.

4.2 Specific instructional techniques

Unit	Activities and instructional techniques
I	Give ideas of mountains based on visual aids (world physical map), Google Earth Maps and models.
II	Introduce models/theories of mountain building.
III	Provide lectures with the use of world metrological data, charts and maps.
IV	Explain the mountain morphology using physical maps of the world, Google earth scene, and 3-D map and models. Provide hands-on exercises to compute the measurement of morphology. Explain the biophysical and resource endowments of the mountain based on secondary sources of information.
V	Illustrate population data, human activities and practices acquired through the secondary sources and case studies.
VI	Provide theoretical knowledge and models of mountain development.
VII	Discuss risks and hazards based on secondary sources of information.

6. Evaluation Schemes

The achievement of the students will be assessed through internal and final/semester examination. Forty percent marks will be allotted to internal examination and sixty percent to final/semester examination.

6.1 Internal evaluation (40%)

Forty percent marks are allotted to internal evaluation. Internal evaluation will be conducted by course teacher based on the following criteria:

Activities	Marks allotted
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Attendance	5
Classroom activities	5
First assignment	10
Second assignment	10
Third assignment	10
Total	40

6.2 External Evaluation (60%)

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester. Sixty percent of the marks are allotted to the final examination. The number and types of questions in the final examination will be as follows:

Types of questions	Total questions to be asked	Number of questions to be answered and marks allotted	Total marks
Group A: Multiple choice	10 questions	10 x 1 marks	10
Group B: Short answer	6 with 2 'or' questions	6 x 5 marks	30
Group C: Long answer	2 with 1 'or' question	2 x 10 marks	20
Total			60

Recommended Books and References

6.1 Recommended books

Allan, N. J.R. (1995). *Mountains at risk: Current issues in environmental studies*. New Delhi: Manohar. (Unit I & VII)

Allan, N. J. (1986). Accessibility and altitudinal models of mountain. *Mountain Research and Development*, 6(3). (Unit VI)

Bencherifa, A. (1988). Demography and cultural ecology of the Atlas Mountains of Morocco: Some new hypotheses. *Mountain Research and Development*, 8(4):309-313. (Unit VI)

Funnel, D. C. & Price, M. F., (2003). *Mountain geography: A review*. doi: **10.1111/1475-4959.00083**. (Unit I to IV)

International Federation of Red Cross and Red Crescent Societies (2010), *World disaster report (Focus on urban risk)*. Geneva: Author. (Unit VII)

Panday, R. K. (1989). *Altitude geography*. Jawalakhel: Center for Altitude Geography. (Unit I, III & VII)

Peattie, R. (1936), *Mountain Geography: A critique and field Study*. Retrieved from: <https://ia601406.us.archive.org/34/items/mountaingeograph029782mbp/mountaingeograph029782mbp.pdf>. (Unit I, II & III)

Price, M. F., Byers, A. C., Friend, D. A., Kohler, T.&Price, L. W. (Eds.). (2013). *Mountain geography: Physical and human dimensions.* (Unit I, II, III & IV)

Steers, J.A. (1979). *The unstable earth.* New Delhi: Kalyani Publishers. (Unit I)

6.2 References

Allan, N. J. R., (1986). Accessibility and altitudinal zonation model. *Mountain Research and Development*, 16 (4), pp 395-405.

Department of Geography Education (Different dates). *The Third Pole*, (Various Issues).

Jodha, N. S., (1992), *Mountain perspective and sustainability: A framework for development strategies.* Kathmandu: ICIMOD.

Nepal Geographical Society (Different dates). *The Himalayan Review* (Various Issues),.

Poudel, K.P., (2003), *Watershed management in the himalayas: A resource analysis approach* New Delhi: Adroit Publishers.

Stevens, S. F. (1996), *Claiming the high ground: Sherpas' subsistence, and environmental change in the highest himalaya.* New Delhi: Motilal Banarsidas Publishers Pvt. Ltd.

Zurick, D., Pacheco, J., Shrestha, B. & Bajracharya, B. (2005). *Atlas of the himalayas*, Kathmandu: ICIMOD.

Health Education

- i. H. Ed. 515: Advanced Health Education
- ii. H.Ed. 516: Fundamentals of Epidemiology
- iii. H. Ed. 517: Human Sexuality and Reproductive Health Education
- iv. H. Ed. 518: Health Promotion

H. Ed. 515: Advanced Health Education

Level: M.Ed.

Semester: First

Nature of course: Theoretical

Credit hours: 3

Teaching hours: 48

1. Course Introduction

This course is designed to enhance the advanced knowledge and in-depth understanding of health education among students. It provides an opportunity for students to explore, apply, and critique the principles, philosophies, theories, foundations, and professionalization of health education, and to learn more about their applications in varied health education settings.

2. General Objectives

The general objectives of this course are as follows:

- To make the students familiar with different perspectives and theories of health and diseases.
- To develop critical understandings of health education and its approaches and models.
- To develop a deeper understanding in students about foundations of health education.
- To provide the students with in-depth knowledge of behaviour change theories.
- To acquaint the students with professionalization in health education.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Conceptualize and discuss different dimensions of health • Analyse and compare traditional and contemporary perspectives on health • Discuss and compare different models of health. • Critically review and analyse the theories of disease • Compare between health education and health promotion in terms of concepts, goals, and scopes • Describe history of health education • Explain principles of health education • Conceptualize and compare traditional, radical, and critical approaches to health education • Explore different settings for health education 	<p>Unit 1: Conceptualization of Health and Health Education (15)</p> <p>1.1 Concept, dimensions, and determinants of health 1.2 Traditional and contemporary perspective on health 1.3 Models/theories of health 1.4 Review of theories of disease 1.5 Concepts, goals, and scope of health education and health promotion 1.6 Historical development of health education 1.7 Principles of health education 1.8 Traditional, radical and critical/new approaches to health education 1.8 Settings for health education</p>
<ul style="list-style-type: none"> • Explain needs of philosophical foundation of in health education. • Discuss leading philosophical viewpoints of health education 	<p>Unit 2: Foundations of Health Education (13)</p> <p>2.1 Philosophical foundation 2.1.1. Concept and need of philosophy in health education</p>

<ul style="list-style-type: none"> • Describe predominant philosophies of health education • Explore and discuss scientific studies, discovery, and innovation related to health and diseases as a foundation of health education • Discuss the government policy and programme that support health education in schools, colleges, and community • Explain the conceptual approach to curriculum development as foundation of health education • Discuss teaching strategies as key pillar of health education • Discuss psychology and theories of behaviour changes as psycho-behavioural foundation of health education • Explore and analyse learning theories and psychological theories that act as pillar of health education • Discuss relation of the social values, norms, mores, socialization, and cultural practices with health education • Analyse socio-cultural and economic foundations of health education • Identify and discuss folks, mores, customs, and sanctions in healthrelated issues • Explain influence of religious beliefs, ethno-medicine and spiritualism in health and health education • Analyze income, social class, and equity as foundations for health and health education 	<p>2.1.2. Leading philosophical view points (Loren Bensley 1993, Joyce Fetro-1993)</p> <p>2.1.3 Predominant health education philosophies</p> <p>2.2 Scientific foundation</p> <p> 2.2.1 Science, facts and evidences as bases of health education</p> <p> 2.2.2 Biology, environment, medical and other natural sciences as source of contents</p> <p> 2.2.3 Advances in diseases control and prevention, nutrition and fitness</p> <p>2.3 Educational foundation</p> <p> 2.3.1 Government policy in supports of health education</p> <p> 2.3.2 Conceptual approach to health education curriculum development</p> <p> 2.3.3 Innovative teaching strategies</p> <p>2.4 Psycho-behavioural foundation</p> <p> 2.4.1 Behaviour change theories and techniques draw on psychology and behavioural sciences</p> <p> 2.4.2 Application of learning and health behaviour theories in health education</p> <p> 2.4.3 Knowledge, attitude, value and health behavior as foundations</p> <p>2.5 Socio-cultural and economic foundations</p> <p> 2.5.1 Concept of society and culture</p> <p> 2.5.2 Social values, norms, socialization, social network and health behaviour</p> <p> 2.5.3 Folks, mores, customs and sanctions in health related issues</p> <p> 2.5.4 Religion, ethno medicine and spiritualism</p> <p> 2.5.5 Income, social class and equity as foundation for health and health education</p>
<ul style="list-style-type: none"> • Clarify the concept of health behaviour. • Discuss and analyze determinants of health behaviour change • Explain health education a process • Elucidate different theories of health behaviour changes • Explain roles of health education in health behaviour change process. • Discuss key concepts and constructs and variables of health belief model, theory of planned behaviour and 	<p>Unit 3: Health Behaviour Change (15)</p> <p>3.1 Concept and determinants of health behaviour</p> <p>3.2 Health education as a change process of health behaviour</p> <p>3.3 Theories of health behaviour change</p> <p> 3.3.1 Intrapersonal (Individual) theories</p> <ul style="list-style-type: none"> • Health Belief Model (HBM) • Protection motivation theory • Theory of reasoned action and theory of planned behaviour • Trans-theoretical Model <p> 3.3.2 Interpersonal theories</p>

<ul style="list-style-type: none"> • social cognitive theory • Explain how social support and network influence health behaviour change • Explain how process of diffusion of innovation contribute to the health behaviour change • Discuss and analyze roles social marketing approach to health behaviour change • Apply behaviour change theories in health education • Illustrate mass media and its effects on behavioural change 	<ul style="list-style-type: none"> • Social Cognitive Theory (SCT) • Social support and network theory 3.3.3 Community Level Theory: • The Diffusion of innovation theory • Social marketing theory 3.3.4 Mass media and its effects on behavioural change
<ul style="list-style-type: none"> • Discuss the concept of health education profession. • Determine the need of health education profession and professional qualities of health education professionals. • Justify the several approaches of professional preparation in health education. • Identify professional competencies of health educators • Assess the need of ethics and professionalism in health education. 	<p>Unit 4: Health education profession and professional ethics (5)</p> <p>4.1 Concept and needs of health education profession</p> <p>4.2 Professional qualities and competencies of health educators</p> <p>4.3 Approaches of professional preparation in health education</p> <p>4.4 Ethics and professionalism in health education profession</p>

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units or sub units or content.

4.1 General Instructional Techniques

- Lecture
- Discussion
- Brain storming
- Presentation
- Guest speech
- Project work
- Interaction
- Research based learning

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
I	Traditional and Contemporary perspectives on health

	<ul style="list-style-type: none"> The students will be given assignment to collect materials on different perspectives on health' and categorize them into traditional and contemporary perspectives With collaborative efforts of students and feedback of teacher the materials will be improved further. <p>Theories of health</p> <ul style="list-style-type: none"> The students will collect materials on different theories of diseases through electronic sources or reference books. By means of discussion and collaborative works of the students the materials will be arranged into major theories like ancient or less scientific theories, modern theories or scientific theories. They will be encouraged to reinterpret ancient or less scientific theories into modern versions in the classroom. <p>Approaches to Health Education</p> <ul style="list-style-type: none"> Students will be divided into three groups and the first group will review the traditional approach, the second group will review radical approach, and the third group will review empowerment approach. Each group will present the key concepts of the given approach to health education in the class.
II	<p>Foundations of health education</p> <ul style="list-style-type: none"> The students will be provided with task to collect materials from internet and reference books related to foundations of health education. They will organize an interaction programme based on their reading. The views of the students and teachers will be shared and collected ideas to improve the material. With collaborative efforts of students and feedback from the teacher the materials will be improved further.
III	<p>Mass media and its effects on health behavioral change</p> <ul style="list-style-type: none"> The students will be given task to collect materials related to 'Mass media and its effects on health behavioural change'. They will organize an interaction programme on that title. The views of the students and teachers will be shared in interaction programme and the students will utilize the collected ideas to improve the material. A document will be prepared based on discussion, secondary sources, and teachers' feedback. <p>Behavioural change models:</p> <ul style="list-style-type: none"> The students will collect related materials on models of behaviour change. By their collaborative efforts they implement the concept of behaviour change model into health behaviour model and submit to the subject teacher.
IV	<p>Health education profession and professional ethics</p> <ul style="list-style-type: none"> The students will be given task to collect information about health education profession and professional ethics. They will be asked to prepare a paper from collected materials. They will be asked to present the paper in the classroom. After the feedback from the students and teacher, the paper will be finalized.

5. Evaluation Scheme

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

• Attendance	5 marks
• Participation in learning activities	5 marks
• First assignments: Review	10 marks
• Second assignment: Mid-term exam	10 marks
• Third assignment: Term paper	10 marks
Total	40 marks

5.2 External Examination (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

SN	Types of question	Marks
1	Objective type questions (multiple choice 10 x 1)	10
2	Short answer questions (6 questions x 5 marks with 2 or questions)	30
3	Long answer questions (2 questions x 10 marks with 1 or question))	20
Total		60

6. Recommended Books and References

6.1 Recommended Books

Cottrell, R. R., Girvan, J.T. & McKenzie, J.F. (2006). *Principles and foundations of health promotion and education* (3rd ed.). NY: Benjamin Cummings. **(For units I, II, III, VI & VII)**

Galli, N. (1978). *Foundations and principles of health education*. NY: John Wiley & Sons, Inc. **(For units I, II, III and VI)**

Glanz, K., Rimer, B. K. & Lewis, F.M. (2006). *Health behaviour and health education: Theories, research and practice* (3rd ed.). San Francisco: John Wiley & Sons, Inc. **(For unit I & III)**

Green, H.G. & Simons-Morton, B.G. (1984). *Introduction to health education*. New York: McMillan Publishing Company. **(For units I-IV)**

Katz, J., Peberdy, A. & Douglas, J. (2000). *Promoting health: Knowledge and practices*. London: Open University Press. **(For unit I)**

Park, K. (2011). *Park's textbook of preventive and social medicine* (21st ed.). Jabalpur: M/S Banarsidas Bhanot. **(For units I and II)**

Pradhan, H. B. (2008). *Textbook of health education: Philosophy and principles*. Kathmandu: Educational Publishing House. **(For unit I)**

Naidoo, J. & Will, J. (2009). *Health promotion: Foundation for practice*. London: BaillièreTindall. **(For unit I and II)**

Rubinson, L. & Wisley, F. A. (1984). *Health education foundations for the future*. St. Louis: Times Mirror/Mosby College Publishing. **(For units I & IV)**

Tones, K. & Tilford, S. (1996). *Health education: Effectiveness, efficiency and equity*. London: Champan& Hall. **(For unit I)**

Winkelman, M. (2009). *Culture and health: Applying medical anthropology*. San Francisco: John Wiley and Sons. (For unit II)

6.2 References

- Department of Health Service, MoHP. *Annual report*. Kathmandu: Author.
- Ministry of Health and Population. *National health policies and programs*. Kathmandu: Author.
- National Planning Commission. *Five year plans of Nepal*. Kathmandu: NPC/CBS.
- Dixit, H. (2000). *Nepal's quest for health*. Kathmandu: Educational Publishing House.
- Harris, M. (1995). *Cultural anthropology* (4th ed.). New York: HarperCollins College Publishers.
- Tischler, H.L. (2007). *Introduction to sociology* (9th ed.). Belmont, CA: Thomson Wadsworth.
- Wallis, K., & Elmer, S. (2007). *Society, culture and health: An introduction to sociology for nurses*. South Melbourne, Australia: Oxford University Press.
- कार्की, अशोक कुमार (२०७०). स्वास्थ्यशिक्षाको आधार . काठमाडौँ : पैरवीप्रकाशन .
- बैद्य पृथचरण, बुढाथोकी, चित्रबहादुर, वाग्ले विष्णु प्रसाद र भण्डारी, खिमानन्द. (२०६८). स्वास्थ्यशिक्षाकोआधार र सिद्धान्तहरू. काठमाडौँ : पिनाकल पब्लिकेसन.
- महर्जन, श्यामकृष्ण. (२०६७). स्वास्थ्यको आधार. काठमाडौँ. (दोसो संस्करण) भुँडि पुराणप्रकाशन.
- मुडवरी, नवराज. (२०६४). वास्थ्यशिक्षाकोआधार र सिद्धान्तहरू. कीर्तिपुरः स्युपिटर प्रकाशक र वितरक (प्रा.लि.).
- पहाडी, तोया (२०६८). वास्थ्यशिक्षाकोआधार र सिद्धान्तहरू. कीर्तिपुरः क्षितिजप्रकाशन.
- प्रधानाङ्ग, योगेन्द्र प्रसाद (२०३६). नेपालमा स्वास्थ्य र स्वास्थ्य सेवा. काठमाडौँ : जे. के. प्रकाशन .

H. Ed. 516: Fundamentals of Epidemiology

Level: M. Ed.

Semester: First

Nature of course: Theoretical

Credit hours: 3

Teaching hours: 48

7. Course Introduction

This course is designed to provide the students with in-depth knowledge of epidemiologic measures and methods which are applied in health research. Moreover, emphasis is placed on epidemiologic approach, measures, methods/designs, causation, and epidemiology of infectious and non-communicable diseases. Students will gain knowledge and experiences in epidemiologic measures and methods. The aim of this course is to widen the horizon of knowledge and understanding of the students with a view to making them able to design epidemiologic study and apply epidemiologic methods in diseases prevention and health promotion.

8. General Objectives

The general objectives of this course are as follows:

- To familiarize the students with the concept, history, components, and measurement of epidemiology
- To acquaint the students with epidemiologic study designs
- To make the students able to gain a broad understanding of methods of infectious epidemiology
- To familiarize the students with basic knowledge in error, bias, reliability, and validity in epidemiology
- To provide the students with necessary knowledge and skills to be able to critically analyze risk factors and preventive measures of non-communicable diseases

9. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Describe concepts and brief history of epidemiology.• Discuss major fields of epidemiology• Explain components of epidemiology• Calculate incidence and prevalence	<p>Unit 1: Introduction to Epidemiology (10)</p> <p>1.1 Concepts and history of epidemiology</p> <p>1.2 Terminology used in epidemiology</p> <p>1.3 Use and fields of epidemiology</p> <p>1.4 Components of epidemiology</p> <p>1.5 Measurement in epidemiology</p> <p> 1.5.1 Measurement tools</p>

<p>rate of diseases and health problem.</p> <ul style="list-style-type: none"> • Calculate crude and specific mortality rate. • Conceptualize and estimate relative risk and odds ratio. 	<ul style="list-style-type: none"> • Rate • Proportion • Ratio <p>1.5.2 Measurement of diseases frequency</p> <ul style="list-style-type: none"> • Incidence rate • Prevalence rate <p>1.5.3 Mortality measurement</p> <p>1.5.4 Measurement of association</p> <ul style="list-style-type: none"> • Relative risk • Odds ratio
<ul style="list-style-type: none"> • Conceptualize epidemiologic methods and study designs. • Describe descriptive study design. • Explain case-control and cohort study design with illustration. • Analyze data from case-control and cohort study. • Explain randomized control trial, field, and community trial. • Critically review the selected epidemiologic studies published in national and international journals. • Discuss the concept of error, bias, and confounding variables in epidemiologic studies • Explain the types of reliability and validity in epidemiologic studies • Discuss the causation and association in epidemiologic studies. 	<p>Unit 2: Epidemiologic Methods (15)</p> <p>2.1 Concept of Epidemiologic methods and study design</p> <p>2.2 Types of Epidemiologic methods</p> <ul style="list-style-type: none"> 2.2.1 Observational method 2.2.2 Experimental method <p>2.3 Descriptive study</p> <ul style="list-style-type: none"> 2.3.1 Case report and case study 2.3.2 Cross-sectional survey <p>2.4 Analytical study designs</p> <ul style="list-style-type: none"> 2.4.1 Case-control study 2.4.2 Cohort study <p>2.5 Experimental/interventional study designs</p> <ul style="list-style-type: none"> 2.5.1 Randomized control trial 2.5.2 Field trial 2.5.3 Community trial <p>2.6 Concept of error, bias, and confounding variables in epidemiological studies</p> <p>2.7 Reliability and validity in epidemiologic studies</p> <p>2.8 Concept of causation and association</p> <ul style="list-style-type: none"> 2.8.1 Causal relation 2.8.2 Spurious/false association

<ul style="list-style-type: none"> • Describe epidemiologic triad and theory of communicable diseases. • Identify and discuss social determinants of communicable diseases • Classify communicable/infectious diseases-based mode of transmissions. • Identify the ways and techniques for breaking chain of infections of communicable diseases • Discuss natural history of diseases • Explain steps in disease outbreak investigation. • Describe types of disease surveillance. • Discuss epidemiology of malaria, tuberculosis, influenza, and HIV/AIDS in Nepal. • Discuss the principles and methods of communicable diseases control 	<p>Unit 3: Infectious Disease Epidemiology(13)</p> <p>9.1 Epidemiologic triad and theory of communicable diseases</p> <p>9.2 Social determinants of communicable diseases</p> <p>9.3 Classification and breaking chain of infection of communicable diseases: Water washed, water/fecal borne, food borne, vector borne, air bone respiratory diseases, STIs, Diseases of soil contacts, skin infection diseases, ecto-parasite zoonosis, domestic zoonotic diseases</p> <p>9.4 Natural history of communicable disease diseases</p> <p>9.5 Steps in disease outbreak investigation</p> <p>9.6 Epidemiological surveillance of diseases</p> <p>9.7 Epidemiology of malaria, TB, influenza, HIV and AIDS in Nepal according to government's data</p> <p>3.8. Principles and methods of communicable disease controls</p>
<ul style="list-style-type: none"> • Conceptualize and discuss the nature of non-communicable, chronic, and hereditary diseases • Explain social determinants of non-communicable diseases • Conceptualize and classify the cardiovascular diseases • Discuss the risk factors, social determinants, and preventive strategy of coronary heart diseases 	<p>Unit 4: Epidemiology of Non-communicable diseases (10)</p> <p>4.1 Concept of non-communicable, chronic, and hereditary diseases</p> <p>4.2 Social determinants of non-communicable diseases</p> <p>4.3 Epidemiology of cardiovascular diseases <ul style="list-style-type: none"> 4.3.1 Concept of cardiovascular diseases 4.3.2 Types of cardiovascular diseases 4.3.3 Risk factors, social determinants, and prevention of coronary heart diseases, hyper- </p>

<ul style="list-style-type: none"> • Explain risk factors and preventative strategies for hypertension and rheumatic heart diseases • Explain the causes and social determinants of cancer • Discuss the screening procedures and prevention of cancer • Explain types of diabetes and screening procedures • Explain risk factors, social determinants, and prevention of diabetes 	<p>tension, and rheumatic heart diseases</p> <p>4.4 Epidemiology of cancer</p> <p>4.4.1 Concept and types of cancer</p> <p>4.4.2 Causes and social determinants of cancers</p> <p>4.4.3 Cancer screening and prevention of cancer</p> <p>4.5 Epidemiology of diabetes</p> <p>4.5.1 Concept and types of diabetes</p> <p>4.5.2 Screening for diabetes</p> <p>4.5.3 Risk factors, social determinants, and prevention of diabetes</p>
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10. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Techniques

- Lecture
- Discussion
- Demonstration
- Presentation
- Guest speech
- Library visit
- Home assignment

4.2 Specific Instructional Techniques

Unit	Activities and instructional techniques
1	Group work on calculation of prevalence rate, prevalence rate, case fatality rate, infant mortality rate, and relative risk and odds ratio using raw data from district public health office or Annual Report of Department of Health Services of Ministry of Health
2	Cooperative learning techniques: Students will be divided into five groups and each group will be assigned to work on case-control study, cohort study, randomized

	control trial, field trial and community trial. Each group should do online research to find out published research articles on given type of the studies, and study them in group. Then each group should present different aspects of the studies in the class.
3	Review books and articles related to the prevention of communicable diseases in Nepal and organize oral presentation.
4	Student will be divided into four groups and each group will explore data on global burden, problems, and prevention strategies of major communicable diseases. Each group will present these issues in classroom.

11. Evaluation Scheme

11.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

1) Attendance	5 marks
2) Participation in learning activities	5 marks
3) First assignments. Review of epidemiologic studies	10 marks
4) Second assignment: Mid-term exam	10 marks
5) Third assignment: Writing a term paper	10 marks
Total	40 marks

5.2 External Examination (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

SN	Types of question	Marks
1	Objective type questions (multiple choice 10 x 1)	10
2	Short answer questions (6 questions x 5 marks with 2 OR questions)	30
3	Long answer questions (2 questions x 10 marks with 1 OR question))	20
Total		60

12. Recommended Books and References

12.1 Recommended Books

Beaglehole, R., Bonita, R. & Kjellstrom, T. (2001). *Basic epidemiology*. Geneva: World Health Organization. **(For Unit I and II)**

- CDC, *Principle of epidemiology in public health practice*. Available www.cdc.gov/training/products/ss1000. (**Unit 1 and IV**)
- Crrao, G. et al. (1993). Amount and duration of alcohol intake as risk factors of symptomatic liver cirrhosis: A case-control study. *Journal of Clinical epidemiology*, 46(7), 601-607. (**Unit II**)
- Beshai, D. et al., (2005). The impact of vitamin: A supplementation on mortality inequalities among children in Nepal. *Health Policy and Planning*, 20(1), 60-66. (**Unit II**)
- Park, K. (2010). *Park's textbook of preventive and social medicine*. Jabalpur, India: M/S BanarsidasBhanot Publishers. (**Unit I, II, III and IV**)
- Picado, A. et al. (2010). Long lasting insecticidal nets for prevention of leishmaniasis infection in India and Nepal: paired cluster randomized trial. *British Medical Journal*, 341:c6760 .doi:10.1136/bmj.c6760 (**Unit III**)
- Pradhan, E.K. et al. (2002). Risk of death following pregnancy in Nepal. Bulletin of World Health Organization, 80, 887-891. (**Unit IV**)
- Tamparo, C.D., & Lewis, M.A. (2011). *Diseases of human body* (Fifth Edition). Philadelphia, PA: F.A. Davis Company. (**For unit III and IV**)
- Webber, R. (2005). *Communicable diseases epidemiology and control: A global perspective*. Massachusetts Avenue: CABI Publishing. (**Unit III**)

12.2 References

- Bhopal, R. (2002). *Concepts of Epidemiology An integrated introduction to the ideas, theories, principles and methods of epidemiology*. New York: Oxford University Press.
- Budhathoki, C.B. & Wagle, B.P. (2009BS). *Community health and organization* (In Nepali). Pinnacle Publication.
- Gregg, M.B. (2008). *Field epidemiology (3rd edition)*. New York: Oxford University Press.
- Greenberg, S. et al. (1996). *Medical epidemiology*. London: Prentice Hall International Inc.
- Killewo, J. Heggenhougen, H.K., & Quah, S.R. (Eds.) (2008). *Epidemiology and demography in public health*. Amsterdam: Academic Press.

H. Ed. 517: Human Sexuality and Reproductive Health Education

Nature of course: Theoretical

Level: M.Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Introduction

This course is designed to equip students with deeper knowledge and understanding on conceptualization of sexual and reproductive health education, development of human sexuality, sexual behaviour, social aspects of human sexuality, recent reproductive health goals and strategies. This course also builds capacity in students to work as an expert in designing, implementing, and monitoring programme for the formal as well as non-formal educational sectors.

2. General Objectives

The general objectives of this course are as follows:

- To make the students familiar with sex, sex education, adolescent's education, sexual and reproductive health education, comprehensive sexuality education, and values and needs of sexual and reproductive health education.
- To acquaint the students with understanding on theories of human sexuality.
- To develop an in-depth knowledge on development of human sexuality.
- To familiarise the students with the sexual orientation, abnormal sexual behaviour, sexual dysfunction and promoting healthy and responsible sexual behaviour.
- To acquaint the students with the reproductive health policies and socio-political aspects in Nepal.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Discuss the concept of sex, sex education, and the misconception of sex education• Make out the concept and needs of & SRH education.• Explain the recent concepts and needs of CSE.• Delineate the needs and values, of ASRH education.• Elucidate the problem and management of ASRH.	<p>Unit 1: Introduction to Sexual and Reproductive Health Education (8)</p> <p>1.1 Concept of sex, sex education, and the misconceptions of sex education. 1.2 Sexual and reproductive health education 1.3 Comprehensive sexuality education (CSE) 1.4 Concept, value, and needs of adolescence sexual and reproductive health (ASRH). 1.5 Problems of adolescent's sexual and reproductive health and their management.</p>
<ul style="list-style-type: none">• Elucidate the biological and psychological theory of human sexuality.• Explain the psychological characteristics of sexuality in different stages of human life.	<p>Unit 2: Development of Sexuality (15)</p> <p>2.1 Concept and theories of human sexuality 2.2 Development of human sexuality (renatal, infancy, childhood, adolescence,</p>

<ul style="list-style-type: none"> • Describe the human reproductive process. • Delineate the causes and impacts of teenage pregnancy, unsafe abortions, and their management. • Make clear the concept, causes, impacts, and management of sub-fertility 	<p>adulthood, elderly)</p> <p>2.3.Reproductive process</p> <p> 2.3.1 Menstruation</p> <p> 2.3.2 Fertilisation/Conception</p> <p> 2.3.3 Birth</p> <p>2.4.Consequences of teenage pregnancy, unsafe abortion, and their management</p> <p>2.5.Sub-fertility/infertility and its management</p>
<ul style="list-style-type: none"> • Explain the concept of sexual behaviour • Discuss the values and ways of responsible and safer sexual behaviour • Examine the causes and impacts of premarital and extramarital sexual behaviour • Analyse the issues, causes/theories of homosexuality and characteristics of LGBTIQA. • Interpret the causes, impacts and management of abnormal sexual behaviour • Make clear the single life sexuality and uses of sex toys • Discuss the causes, impacts and management of sexual dysfunctions • Elucidate sexual disorder of disabled persons and its management 	<p>Unit 3: Sexual behaviour and Dysfunction/Disorder (15)</p> <p>3.1 Concept of sexual behaviour (Love, affection, intimacy, sexual arousal, and response)</p> <p>3.2 Values and ways of responsible and safer sex behaviours</p> <p>3.3 Premarital and extramarital sexual behaviours and their issues</p> <p>3.4 Sexual Orientation:</p> <p> 3.4.1 Concept of sexual orientation</p> <p> 3.4.2 Homosexuality</p> <p> 3.4.3 Characteristics of LGBTIQA</p> <p>3.5 Abnormal sexual behaviour: Paraphilias, Hyper sexuality and High-risk sexual behaviours.</p> <p>3.6. Alternative ways of sexual satisfaction (Use of sexual toys and its consequences).</p> <p>3.7. Causes and treatment of male and female sexual dysfunction/disorder</p> <p> 3.7.1 Male</p> <ul style="list-style-type: none"> • Sexual desire disorder (Hypoactive) • Impotence (Erectile dysfunction) • Premature ejaculation • Retarded ejaculation <p> 3.7.2 Female</p> <ul style="list-style-type: none"> • Vaginismus • Anorgasmia

	<ul style="list-style-type: none"> • Rapid orgasm • Dyspareunia <p>3.8. Sexual problems of disabled persons and their managements</p>
<ul style="list-style-type: none"> • Explain the socio- cultural perception on sexuality. • Examine the issues of girls trafficking, commercial sex, sexual violence, exploitation, harassment and suggest their control measures • Examine the issues of girls trafficking, commercial sex and sexual harassment and suggest their control measures • Delineate the evolution of RH and reproductive rights • Analyse the goals, policies, and strategies of reproductive health • Prepare a report on youth friendly health services based on survey of health post/PHC/health provider • Discuss SRH in reference to the sustainable development. 	<p>Unit 4: Socio- political Aspects on Sexuality (10)</p> <p>4.1 Socio cultural perception on sexuality 4.2 Religion and sexuality 4.3 Legal aspects on sexuality 4.4 Girls trafficking and commercial sex 4.5 Sexual exploitation, harassment, and violence 4.6 Women sexual and reproductive health rights 4.7 Recent reproductive health plan and strategies of Nepal 4.8 Youth friendly health service in Nepal 4.9 Sustainable development goals (SDGs) in relation to sexual and reproductive health 4.10 Sexual and reproductive health in public health emergencies.</p>

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units or sub-units or content.

4.1 General Instructional Techniques

- Lecture
- Document review
- Discussion
- Brain storming
- Presentation
- Guest lecture
- Collaborative learning
- Independent learning
- Project work
- Critical thinking method

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques

I	Conceptualization on Sexual and Reproductive Health <ul style="list-style-type: none"> • The students will be given reading materials to prepare papers on sex, sex education, sexual and reproductive health. • All the students will be asked to collect myths and misconceptions of sex and sexuality education and have a group discussion. Its copy will be distributed to students after editing. • The students will be given an assignment to prepare the notes on comprehensive sexuality education including ASRH.
II	Development of Sexuality <ul style="list-style-type: none"> • The students will be given assignment to prepare the notes on theories of human sexuality based on library/website visit and have a discussion in the class. The teacher will provide feedback for further improvement of the task. • The students will be given an assignment to prepare materials related to the development of human sexuality. They will also be instructed to present their assignment in the large group. • A guest lecture about sexuality development will be arranged. Very short answer type questions will be prepared to conduct quick review of the lessons and the students will be asked those questions in the class.
III	Sexual Behaviour and Dysfunction/Disorder <ul style="list-style-type: none"> • The students will be asked to develop a survey form to collect information on premarital sex and its consequences. They will be asked to collect information at least from ten people to draw ideas about premarital sex. • The students will be asked to organize an interaction program on LGBTIQA. If possible, a resource person will be invited for the interaction program. • The students will be given reading materials on sexual dysfunctions to review. They will also be asked to draw conclusions from the materials and submit it to the teachers as a home assignment. • The students will be asked to prepare notes on the consequences of unsafe abortion in Nepal based and have a group discussion. • A guest lecture about the use of sexual toys and its consequences will be arranged. • If possible, an expert will be invited to deliver on management of sub fertility. • Question answer session will be conducted after finishing the guest lecture
IV	Socio-political Aspects on Sexuality <ul style="list-style-type: none"> • The students will be asked to visit library or website to collect information on religion and sexuality. • The students will be given assignments to prepare the notes on girls trafficking, commercial sex, sexual harassment, and sexual violence. • They will be asked to prepare a report on the visit and present it in the large group. • The students will be assigned to visit a local health post/PHC to see whether or not they are providing youth friendly RH services and also asked them to share in the information with the group.

5. Evaluation Scheme

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by subject teachers based on following aspects:

SN	Particular	Points
1	Attendance	5
2	Participation in learning activities	5
3	First assessment: Article review/ book review or open book test/ unit test	10
4	Second assessment: Midterm test	10
5	Third assessment: Project work or case study or field study/survey, or seminar/workshop	10
Total		40

5.2 External Examination (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

SN	Types of question	Marks
1	Objective type questions (multiple choice 10 x 1)	10
2	Short answer questions (6 questions x 5 marks with 2 OR questions)	30
3	Long answer questions (2 questions x 10 marks with 1 OR question)	20
Total		60

6. Recommended Books and References

6.1 Recommended Books

Bolin, A & Whelehan, P. (2009). *Human sexuality: Biological, psychological, and cultural perspectives*. New York: Rutledge Taylor and Francis Group. **(For unit II-IV)**

Bruess, C. E. & Greenberg, J. S. (2004). *Sexuality education: Theory and practice* (4th ed.). Sudbury: Jones and Bartlett Publishers. **(For units I, II and III)**

- Carroll, J. L. (2008). *Sexuality now: Embracing diversity* (3rd ed.). Belmont: Wadsworth. (**For units I, II – V**)
- Herdt, G. and Howe, C. (Eds) (2008). *21st centuries sexualities: Contemporary issues in health, education and rights*. USA: Routledge. (**For units I, III and V**)
- Masters, W. H., Johnson, V. E., & Kolodny, R. C. (2007). *Human sexuality*, (5th ed.) New Delhi: Pearson Education. (**For units I- VI**)
- Shrestha, D. R. (2008). *Reproductive health: National and international perspectives*. Dhulikhel: Mrs. Narayan Devi Shrestha. (**For unit VI**)
- WRREC Nepal. <http://www.worecnepal.org/programs/trafficking> (**For unit V**)

6.2 References

- Animaw, W & Bogale B. (2014). *Abortion in university and college female students of Arba Minch town, Ethiopia*, 5 (1),17-22.
- Department of Health Service (2006/2007). *Annual report*. Kathmandu: Ministry of Health and Population.
- Ellsberg, M. & Heise, L. (2005). *Researching violence against women: A practical guide for researchers and activists*. Geneva: WHO and PATH.
- FHD/DOH/GON. (2003). *National medical standard for reproductive health*. Kathmandu: Author.
- FPAN, Youth Section (2001). *Sexual abuse and all about (Youn shoshan ra yas bare thaha paunu parne kuraharu)*. Kathmandu: Author.
- Hamal, P. K. (2010). Sexual and reproductive health of low income adolescence in Nepal: Can education be a catalyst . *Economics Journal of Development Issue*, 11 and 12 No. 1-2
- Joshi, S, Padam Simkhada, P. & Prescott, G. J. (2011). *Health problems of Nepalese migrants working in three Gulf countries*. BioMed Central Ltd. <http://www.biomedcentral.com/1472-698X/11/3>
- Mamta. (2006). *Supplementary reading for facilitators on sexuality, gender and young people* (2nd ed.). New Delhi: SIDA.
- MOH New ERA, ORC (2001 and 2011). *Nepal demographic and health survey*. Kathmandu: Author.
- Regmi, P., Simkhada, P. & Van Teijlingen, E.R. Sexual reproductive health status among young people in Nepal: opportunities and barriers for sexual health education and services utilization. *Kathmandu University Medical journal*, 6(2), 248-256.
- UNFPA. (1994). *International conference on population and development* (Draft programme of Action, 5 - 13 September). Cairo, Egypt: Author.

WHO (1999). *Programme for adolescence and development*. Geneva: WHO

ICPD programme of action para. <http://web.unfpa.org/adolescents/language/p4.htm>

Moving Forward: Dispelling misconceptions about sexuality education in India.

http://www.popcouncil.org/pdfs/frontiers/presentations/2007APCRSHR_Jejeebhoy.pdf

उपाध्याय, गोविन्दशरण (२००८). केवल किशोर किशोरीका लागि. काठमाडौँ : ए के बुक्स एण्ड एकेशनल इन्टरप्राइज.

जनसङ्ख्या शिक्षा एकाइ (२०६१). यैन तथा प्रजनन स्वास्थ्य राष्ट्रिय स्रोत पुस्तक. कीर्तिपुर: शि.शा. सङ्काय, त्रि.वि.

तुइतुइ, रोशनी र तुइतुइ, सावित्री (२०६४). प्रजनन स्वास्थ्य. काठमाडौँ : प्रशान्ती प्रकाशन.

पोखेल, निता (२०६४). यैन, गर्भ र सुत्केरी. काठमाडौँ : एडुकेशनल पब्लिकेशन हाउस.

महर्जन, श्यामकृष्ण (२०७०). मानव यौनिकता र प्रजनन स्वास्थ्य (छैठौ संस्करण). कीर्तिपुर : सनलाइट प्रकाशन.

शिक्षाशास्त्र सङ्काय (२०५९). सामाजिक न्याय शिक्षा. कीर्तिपुर : डीनको कार्यालय, शिक्षाशास्त्र सङ्काय, त्रि.वि.

H. Ed. 518: Health Promotion
Level: M.Ed.
Semester: First

Nature of course: Theoretical
Credit hour: 3
Teaching hours: 48

1. Course Introduction

This course is designed to provide the students with the knowledge and understanding of health promotion in modern context. The emphasis is on the critical understanding of the theory, models, strategies, and methods of health promotion. It aims to develop critical understanding and appraisal of the nature of the relationship between people and their social-ecological contexts in terms of their impact on the health of individuals and community. It provides students an in-depth understanding of methods for planning, implementing, and evaluating health promotion interventions for promoting health at different focus areas and settings for health.

The general objectives of the course are as follows:

- To introduce students to basic concepts, features, evolution and Ottawa Charter of health promotion

2. General Objectives

- To familiarize the students with the social and political contexts of health promotion
- To enable the students to analyze and apply theoretical models in designing health promotion program
- To orient the students about different approaches of health promotion
- To equip the students with the knowledge of different strategies and methods of health promotion
- To develop deeper understanding of primary health care approach to health promotion
- To make the students able to apply behavioural change theories in developing personal skills required for health promotion
- To enable the students to apply approaches of community development and empowerment in strengthening community action for health promotion
- To equip the students with knowledge and methodological skills of planning, implementation and evaluation of health promotion interventions.
- To orient the students to the setting approach of health promotion with an emphasis on understanding of workplace health promotion

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Define and identify key features of health promotion. • Explain scope and importance of health promotion • Discuss relationship between health education and health promotion • Highlight the historical milestones contributing to the emergence of health promotion and its development. • Explain social determinants of health and health promotion • Discuss the role of social model of health and health promotion • Discuss social responsibility of health promotion • Explore and analyze political context of health promotion • Summarize international efforts on health promotion 	<p>Unit 1: Introduction to Health Promotion (9)</p> <p>1.1 Concepts, features, and the importance of health promotion 1.2 Scope of health promotion 1.3 Symbiotic relationship between health education and health promotion 1.4 Historical evolution of health promotion 1.5 Social determinants of health in relation to health promotion 1.6 Social model of health and health promotion 1.7 Social responsibility of health and health promotion 1.8 Equity and social justice in health promotion 1.9 Politics of health promotion 1.10 International efforts on health promotion</p>
<ul style="list-style-type: none"> • Identify major paradigms of health promotion • Explain Tannahil and Green and Tonnes model of health promotion • Illustrate empowerment model of health promotion • Discuss Beattie's model of health promotion • Explain social ecological model of health promotion • Discuss the scope and limitation of medical approach to health promotion • Explain behavioural change and educational approach in health promotion • Describe theories of social changes and its application in health promotion • Discuss the new social movement for health promotion 	<p>Unit 2: Theoretical Models and Approaches of Health Promotion (10)</p> <p>2.1 Paradigms of health promotion 2.2 Major theoretical models of health promotion and its application in planning intervention <ul style="list-style-type: none"> 2.2.1 Tannahill's model of health promotion 2.2.2 Health action model 2.2.3 Empowerment model 2.2.4 Beattie's health promotion model 2.2.5 Social ecological model 2.3 Approaches to health promotion <ul style="list-style-type: none"> 2.3.1 Medical approach 2.3.2 Behavioral change approach 2.3.3 Educational approach 2.3.4 Empowerment approach 2.3.5 Social change approach <ul style="list-style-type: none"> • Concept and theories of social change • New social movement for health promotion </p>

<ul style="list-style-type: none"> • Describe the concept of reorienting health services in health promotion • Discuss the roles of health promotion through health services and health promotion in health sector • Outline health promotion services in Nepal • Explain the role of PHC and equitable distribution of health services in health promotion • Discuss roles of intrapersonal theories in developing and modifying health behaviour • Explore and discuss the dimensions and methods of community empowerment • Discuss needs of the community development approach to health promotion • Describe the history and characteristics of healthy public policy (HPP) • Explore skills and resources required for HPP • Conduct advocacy and agenda setting for policy making • Discuss the adoption and implementation of process of HPP • Discuss the role of mass media campaign such as planned and unpaid coverage in health promotion • Describe the process of developing effective communication strategies • Discuss the media advocacy for health promotion • Write critique of social marketing approach to health promotion • Discuss the contribution of health education to health promotion • Summarize key concepts of contemporary approach to health promotion 	<p>Unit 3: Strategies and Methods of Health promotion (18)</p> <p>3.1 Reorienting health services</p> <ul style="list-style-type: none"> 3.1.1 Promoting health in and through health care sector and the role of health services 3.1.2 Promotional health services in Nepal 3.1.3 Promoting health through primary health care approach and equitable distribution to health services <p>3.2 Developing personal skills</p> <ul style="list-style-type: none"> 3.2.1 Life skill development 3.2.2 Developing and modifying personal skills and behaviour using protection motivation theory, stages of change model and precaution adoption process model <p>3.3 Strengthening community and community action</p> <ul style="list-style-type: none"> 3.3.1 Dimensions and methods of community empowerment 3.3.2 Community development approach to health promotion <p>3.4 Developing healthy public policy (HPP)</p> <ul style="list-style-type: none"> 3.4.1 Concept, history, and the characteristics of HPP 3.4.2 Skill and resources required for HPP 3.4.3 Advocacy and agenda setting for policy making 3.4.4 Adoption and implementation of HPP <p>3.5 Using mass media in health promotion</p> <ul style="list-style-type: none"> 3.5.1 Mass media campaign and its effect on health promotion 3.5.2 Developing effective communication strategies 3.5.3 Media advocacy for health promotion 3.5.4 Social marketing approach to health promotion <p>3.6 Educating people for health</p> <ul style="list-style-type: none"> 3.6.1 Contribution of health education to health promotion 3.6.2 New health education and health literacy for health promotion <p>3.7 Creating supportive environment</p>
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<ul style="list-style-type: none"> • Discuss the facilitating process in health education • Explain the roles of new health education and health literacy for health promotion • Analyze the roles of health public policy, community development and setting approach to creating supportive environment for health promotion 	
<ul style="list-style-type: none"> • Discuss the need and types of setting approach to health promotion. • Explain the meaning and characteristics of workplace health promotion in recent period. 	<p>Unit 4: Setting Approach to Health Promotion (5)</p> <p>4.1 Settings for health</p> <ul style="list-style-type: none"> 4.1.1 Concepts and needs of setting approach to health promotion 4.1.2 Development of setting approach 4.1.3 Types of healthy settings in practice <p>4.2 Workplace Health Promotion (WHP)</p> <ul style="list-style-type: none"> 4.2.1 Concept of WHP 4.2.2 Evolution of WHP 4.2.3 Importance of WHP 4.2.4 Categories of WHP activities 4.2.5 Practicing WHP

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units.

4.1 General Instructional Techniques

- Lecture
- Discussion
- Demonstration
- Presentations and guest speech
- Articles review
- Library visit
- School visits and observation
- Home assignment

4.2 Specific Instructional Techniques

Unit	Activities and instructional techniques
1	<p>Each student will be assigned to read relevant books and articles related to concept and evolution of health promotion and prepare short notes on concept, and the features and historical development of health promotion</p> <p>Students will be divided into four groups: The first group will prepare notes and</p>

	present on relationship between health education and health promotion. The second group will prepare notes and present on link between social determinants and social model health and health promotion. The third groups will present social and state responsibility for health promotion and disease prevention. The fourth group will present on political context of health promotion and international efforts on health promotion.
2	<p>Each student will be asked to read theoretical models of health promotion included in compendium before joining to the class. Teacher will use brain storming and buzz session techniques to explore their understanding about health promotion theories/models.</p> <p>Class will be divided into five groups and each group will read and prepare notes on given approach of health promotion through cooperative learning approach. Debate will be organized on health promotion approaches. One group will speak in favour of the given approach and another group will speak against the given approach. At the end of the debate, the students will note down the strong and weak aspects of each of the health promotion approaches.</p>
3	The class will be divided into six groups and each group will work on given strategies of health promotion. Each group will review relevant books, articles and documents as well interview the experts working in the field of health promotion. Then each group will present key points of given health promotion strategy and method in class.
4	Student will visit different settings such as school, municipality, factory, and hospital and observe the situation and interview the concerned persons about health promotion activities. Then teacher will initiate the discussion based on the field visit.

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

- Attendance

5 marks

• Participation in learning activities	5 marks
• First assignments. Review	10 marks
• Second assignment: Mid-term exam	10 marks
• Third assignment: Writing a term paper	10 marks
Total	40 marks

5.2 External Examination (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

SN	Types of question	Marks
1	Objective type questions (multiple choice 10 x 1)	10
2	Short answer questions (6 questions x 5 marks with 2 OR questions)	30
3	Long answer questions (2 questions x 10 marks with 1 OR question)	20
Total		60

6. Recommended Books and References

6.1 Recommended Books

Green, J. & Tones, K. (2010). *Health promotion: Planning and strategies*. London: Sage Publication. **(For units I, II & III)**

Laverack, G. (2004). *Health promotion practice; power and empowerment*. New Delhi: SAGE Publications India Pvt Ltd. **(For Unit III)**

McKenzie, J. F., & Smeltzer, J. L. (2001). *Planning, implementing, and evaluating health promotion program (3rd Ed.)*. London: Allyn and Bacon. **(For unit IV)**

Naidoo, J. & Wills, J. (2009). *Foundations for health promotion* (3rd ed.). Edinburgh: Elsevier Limited. **(For Unit I, II, III and IV)**

O'Donnell, M. P. & Harris, J. S. (1994). *Health promotion in the workplace* (2nd ed.). Albany, New York: Delmar Publishers Inc. **(For Unit IV)**

World Health Organization. (2009). *Milestones in health promotion: Statements from global conferences*. Geneva: Author. **(For Unit I)**

6.2 References

- Baker, J. L., Coleman, B. L. & Sormin, S. (2002). *Workplace health promotion: Assessing employees' health-related needs*. St. Thomas, Ontario: Elgin-St. Thomas Health. (Unit I).
- Breucker, G. & Sochert, R. (2006). Healthy employees in healthy enterprises - the European Network for Workplace Health Promotion. In E. Korzeniowska & K. Puchalski (Eds.), *Workplace health promotion in enlarging Europe* (p. 9-22). Poland: The Nofer Institute of Occupational Medicine.
- Green, L.W. & Kreuter, M.W. (1999). *Health promotion planning; An educational and environmental approach* (3rd ed.). London: Mayfield Publishing Company.
- Groene, O. & Garcia-Barbero, M. (2005). *Health promotion in hospitals: Evidence and quality management*. Geneva: WHO.
- Katz, J., Peberdy, A., & Douglas, J. (2000). *Promoting health: Knowledge and practice* (2nd ed.). London: The Open University.
- Korzeniowska, E. & Puchalski, K. (Eds.) (2006). *Workplace health promotion in enlarging Europe*. Poland: The Nofer Institute of Occupational Medicine.
- Laverack, G. (2007). *Health promotion practice: Building empowered communities*. Maidenhead: Open University Press.
- Ledwith, M. (2005). *Community development: A critical approach*. Bristol: The Policy Press.
- MacDonald, T.H. (1998). *Rethinking health promotion: A global approach*. London: Routledge
- McLeroy, K.R. et al. (1988). An ecological perspective on health promotion programme. *Health Education Quarterly*, 15(4), 351-377.
- Rootman, I. et al. (Eds.) (2001). *Evaluation in health promotion; principles and perspectives*. Denmark: WHO.
- Seedhouse, D. (1997). *Health promotion: Philosophy, prejudice and practice*. Chichester: John Wiley and Sons.
- Croyle, R. T. (2005). *Theory at a glance: A guide for health promotion practice* (2nd ed.). US: US Department of Health and Human Services, National Institutes of Health.
- Victorian Curriculum and Assessment Authority (2007). Advice for teachers: social model of health. *VCE health and human development, unit 3*. p. 1-8.
- Wendel, S. (Ed.) (1995). *Healthy, wealthy and wise: fundamentals of workplace health promotion* (3rd ed.). Omaha, NE: WELCOA.

World Health Organization Expert Committee on Comprehensive School Health Education and Promotion. (1997). *Promoting health through schools* (WHO technical report series; 870). Geneva, Switzerland: Author.

World Health Organization. (1986). *Ottawa charter for health promotion*. Geneva: Author.

World Health Organization. (1998). *Health promotion glossary*. Geneva: Author.

Young, I. (2005). Health promotion in schools-a historical perspective. *Promotion and Education*, 12(3-4), 112-117.

History Education

- i. Hist. Ed. 515: Major Political Changes in Modern Nepali History (1769-2008)
- ii. Hist.Ed.516: History of Modern India
- iii. Hist. Ed. 517: Diplomatic and Internal History of Europe (1871-1975)
- iv. Hist. Ed. 518: History and Historiography

Hist. Ed. 515: Major Political Changes in Modern Nepali History (1769-2008)

Course No.: Hist. Ed. 515

Nature of course: Theory + Practical

Level: M. Ed

Credit hours: 3 = (2 Th + 1 Pr.)

Semester: First

Teaching hours: 32+32=64

1. Course Introduction

This course is designed to expose the students to a vivid picture of internal and the diplomatic history of modern Nepal from 1769-2008. The course includes the unification process of Prithvinarayan Shah, court politics from 1795 to 1846, rise of the Ranas, Nepal's foreign relation with British India, Tibet and China, democratic movements from 1950 to 2008, and the declaration of republic of Nepal. The course intends to provide students with the knowledge through both regular classroom teaching and practical activities.

2. General Objectives

The general objectives of this course are as follows:

- To make the students familiar with the political history of Nepal before the Gorkha conquest and the unification process of Prithvinarayan Shah.
- To assess the court politics from 1775 to 1846.
- To provide the students with the knowledge of the causes of the rise of Rana regime and their strategies to consolidate power and the causes of the fall of Rana regime and Democratic Movement of 1950.
- To acquaint the students with the major political events of Nepal from 2007 to 2017 B.S.
- To analyze and interpret the foreign relations of Nepal with British - India, Tibet and China
- To critically analyze the re-establishment and status of Democracy in Nepal from 2017-2046 B.S.
- To acquaint the students with the causes of Jana Andolan 2062-63 B.S. and its results and the declaration of Republic in Nepal.
- To enhance students' skills in practical activities such as report writing, book review.

3. Specific Objectives and Contents

Part One: Theoretical (32 credit hours)

Specific objectives	Contents
<ul style="list-style-type: none"> • Describe the political condition of Nepal before the Gorkha conquest. • Explain the strategies for unification of Nepal. • State the relation of Prithvinarayan Shah with East India Company and Tibet. • Describe the role of Rajendra Laxmi and Bahadur Shah in the Unification of Nepal. • Elaborate the political activities of Rana Bahadur Shah. • Explain Political condition of Nepal before the death of Rana Bahadur Shah 	<p>Unit I: Unification of Nepal (4)</p> <p>1.1 Political condition of Nepal before the Gorkha Conquest</p> <p>1.2 Strategies for Unification of Nepal</p> <p>1.3 Relation with East India Company and Tibet (1799-1825)</p> <p>1.4 Role of Rajendra Laxmi and Bahadur Shah in the Unification of Nepal</p> <p>1.5 Rana Bahadur Shah and his political activities.</p> <p>1.6 Political condition of Nepal before the death of Rana Bahadur Shah</p>
<ul style="list-style-type: none"> • Describe the rise and fall of Bhimshen Thapa • Analyse the Role of Pandeys in contemporary politics of Nepal • Differentiate the role Samrajya Laxmi Devi and Rajya Laxmi Devi in the political history of Nepal • Critically evaluate the rise and fall of Mathbar Singh Thapa. 	<p>Unit II: Court politics and Political Instability in Nepal (1837-46) (4)</p> <p>2.1 Rise and fall of Bhimshen Thapa</p> <p>2.2 Role of Pandeys in contemporary politics of Nepal</p> <p>2.3 Role of Samrajya Laxmi Devi and Rajya Laxmi Devi in the political history of Nepal</p> <p>2.4 Rise and fall of Mathbar Singh Thapa.</p>
<ul style="list-style-type: none"> • Explain the causes of Nepal-Tibet War of 1788-89 and the Treaty of 1789. • Present the causes of Nepal-Tibet-China War and the Treaty of 1792. • State the leading factors for the signing of Anglo-Nepalese Treaty of 1801. • Show the causes of Anglo-Nepal War of 1814-16 and treaty of Sugauli • Analyze the causes of the 	<p>Unit III: Foreign Relation of Nepal (8)</p> <p>3.1 Nepal-Tibet War – 1788-89 and Treaty of 1789</p> <p>3.2 Nepal-Tibet-China War and Treaty of 1792.</p> <p>3.3 Anglo-Nepalese Treaty of 1801.</p> <p>3.4 Anglo-Nepal War of 1814-16 and Treaty of Sugauli</p> <p>3.5 Third Nepal-Tibet War and Treaty of Thapathali (1856).</p> <p>3.6 Crisis in Nepal-Tibet (1883-84) relations.</p> <p>3.7 Young husband's mission and its impact on Nepal-Tibet relations.</p> <p>3.8 Anglo-Nepal Commercial Treaty- 1792.</p> <p>3.9 Nepal's co-operation in the Indian revolt of 1857 and the question of Gorkha recruitment.</p>

<ul style="list-style-type: none"> third Nepal-Tibet war and mention the provisions of Thapathali treaty • State the causes behind the crisis of Nepal-Tibet relation in 1883-84 • Evaluate Nepal's role in Yonghusband mission and its impact on Nepal -Tibet relation • Analyse the aims and objectives of Kirkpatrick Mission and Anlo-Nepal commercial treaty of 1792 • Explain Nepal's cooperation in the India revolt of 1857 and the question of Gorkha recruitment • State the role of Nepal in the World war I • Identify the Anglo -Nepalese relation established on the basis of equity • Analyze Nepal's cooperation to the British in the world war II • Analyze the treaty of 1950 and its impact on Nepal 	<ul style="list-style-type: none"> 3.10 Role of Nepal in the World War I. 3.11 Anglo-Nepal friendship Treaty of 1923. 3.12 Nepal's co-operation to British India in the World War II. 3.13 Treaty of 1950 and its impact
<ul style="list-style-type: none"> • Explain the rise of Jung Bahadur Rana and consolidation of power • State the various steps taken by Rana rulers for the consolidation of power. • Explain the Movement 2007 B.S. 	<p>Unit IV: Rise and fall of Rana Regime (5)</p> <ul style="list-style-type: none"> 4.1 Rise of Jung Bahadur and consolidation of power. 4.2 Political changes during the Rana Period 4.3 The movement of 2007 B.S.
<ul style="list-style-type: none"> • Explain the attempts of people for the establishment of democracy in 2007 B.S. • State the steps taken by King Mahendra against Democracy. • Explain the establishment of Panchayat System. • Describe the Movement of 2036 B.S. and Referendum. • Explore the causes of People's Movement of 2046 B.S. and establishment of multi-party system. 	<p>Unit V: Political Events 2007 to Jana Andolan 2046 B.S. (5)</p> <ul style="list-style-type: none"> 5.1 Democratic exercise (2007-2017) 5.2 Conspiracy against Democracy- 2017. 5.3 Establishment of Panchayat System. 5.4 Movement of 2036 B.S. and Referendum. 5.5 Movement of 2046 B.S. and establishment of multi-party system.
<ul style="list-style-type: none"> • Examine the Maoist Insurgency • Discuss the Royal massacre 2058 	<p>Unit VI: Political Changes from 2046 to 2063 B.S. (6)</p> <ul style="list-style-type: none"> 6.1 Maoist Insurgency and its effects

<p>B.S.</p> <ul style="list-style-type: none"> • Evaluate the role of King Gyanendra in Nepalese politics • Summarize the leading factors of the Jana Andolan 2062-63 B.S. • Explain the role of the major political parties in the movement. • Critically evaluate the provisions of twelve point agreement. • Explain the success of movement and re-establishment of parliament. • Describe the constitutional assembly election and declaration of Republic in Nepal. 	<p>6.2 Royal massacre 2058 B.S. 6.3 Role of King Gyanendra in Nepalese politics 6.4 Jana Andolan 2062-63 B.S. 6.5 Role of major political parties in the movement of 2062-63 B.S. 6.6 Twelve points agreement of 2062 B.S. 6.7 Success of movement and re-establishment of parliament 6.8 Constitutional Assembly election 2064 B.S. and declaration of Republic.</p>
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Part Two: Practical (32 Periods)

Objectives	Contents
<ul style="list-style-type: none"> • Make a report after visiting one of the historical places and present in the class 	<p>Unit VII: Field Study & report Writing (14) 7.1 Make groups, select at least one of the historical places, visit, make a report and present</p>
<ul style="list-style-type: none"> • Make a report after visiting one of the historical places where any movement had happened and present the report in the class • Make interview guideline, conduct interview with any person known about the development of democracy and make note on development of democracy in Nepal • Select one of the books that reflects historical movement, make review report and present it individually in the class. 	<p>Unit VIII: Excursion tour & report writing (18) 8.1 Make groups, select historical places where movement was happened, visit, make a report & present 8.2 Make a note on development of democracy in Nepal 8.3 Book review & present</p>

Not: The figures within the parenthesis indicate the approximate teaching hours for respective unit.

4. Instructional Techniques

Two groups of instructional techniques have been recommended. The first group comprises common techniques applicable to most of the units. The second group includes such instructional techniques which should be applied to teach specific unit.

4.1 General Instructional Techniques

Due to the theoretical nature of the course, teacher directed, guided and instructed techniques will be mostly adopted. To impart the required knowledge of the concerned units the teacher will adopt the following methods and techniques.

- Lecture
- Discussion
- Paper presentation of the project
- Brain storming and buzz session

- Report writing assignment

4.2 Specific Instructional Techniques

Units	Activities and Instructional Techniques
Unit I : Unification of Nepal	Field visit and group discussion
Unit II: Court politics and Political Instability in Nepal (1837-46)	Seminar, individual report writing, group discussion and presentation
Unit III: Foreign Relation of Nepal	Group report, seminar
Unit IV: Rise and fall of Rana Regime	Case study, book review
Unit V: Political events 2007 to Jana Andolan 2046 B.S.	Project work, term paper
Unit VI: Political development from 2046 to 2063 B.S.	Case study, book review

5. Evaluation

5.1 Internal Evaluation 25 (40% off 65)

Theory

Internal evaluation will be conducted by course teacher based on following activities

- | | |
|--|----------|
| 1) Attendance | 3 Marks |
| 2) Participation in Learning activities | 2 Marks |
| 3) First assignment | 5 Marks |
| 4) Second assignment (Midterm exam) assessment | 10 Marks |
| 5) Third assignment/ assessment | 5 Marks |

Total 25 Marks

5.2 Internal Evaluation 15 (40% of 35) Practical

Internal Practical evaluation will be conducted in the campus/Department by the evaluation committee in the chair of head of the department, subject teacher and expert nominated by campus/department chief.

- | | |
|---|---------|
| 1) Historical places visit and Report writing | 5 Marks |
| 2) Book Review | 5 Marks |
| 3) Participation and presentation | 5 Marks |

Total 15 Marks

Unit wise activities and work for internal evaluation

Units	Activities and work for internal evaluation
Unit I: Unification of Nepal	Group discussion and presentation (class work for overall activities, 2)
Unit II: Court politics and Political Instability in Nepal (1837-46)	Make list of Court politics and causes of political instability (Participation in Learning activities, 2)
Unit III: Foreign Relation of Nepal	Prepare comparative table of Nepal for foreign relations (1st

	assignment 5)
Unit IV: Rise and fall of Rana Regime	One Case study of Rana ruler's Achievements (2 nd assignment, 5)
Unit V: Political Events 2007 to Jana Andolan 2046 B.S.	Make time line based on Political Events 2007 to Jana Andolan 2046 B.S. (3 rd assignment, 3)
Unit VI: Political Development from 2046 to 2063 B.S.	Points out political development from 2046 to 2063 B.S. and presents in class (3 rd assignment, 2)

5.3 External Evaluation 40 (60% of 65)

5.4 Final examination) 40 Theory

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The types and number of questions to be included in the final paper are as follows.

- | | |
|--|----------|
| 1) Objective type question (multiple choice 10 x 1 point) | 10 Marks |
| 2) Short answer question (4 questions x 5 points with 1 or) | 20 Marks |
| 3) Long answer questions (1 questions x 10 points with 1 or) | 10 Marks |
| Total | 40 Marks |

5.5 External Evaluation 20 (60% of 35) Practical

External Practical evaluation will be conducted in the campus/Department by the evaluation committee in the chair of head of the department, Subject teacher and expert nominated by campus/department chief.

- | | |
|--------------------------------------|----------|
| 1) Excursion tour and Report writing | 10 Marks |
| 2) Book review | 5 Marks |
| 3) Participation & presentation | 5 Marks |

Total 20 Marks

6. Recommended Books and References

6.1 Recommended Books

- Acharya, B. (2002 B.S.). *Nepal ko Samchhipta Britanta*. Kathmandu: Promod Shamsher and Neer Bikram Pyasi. **(For unit I-VI)**
- Karmacharya, G. (2005). *Queens in Nepalese politics*. Kahtmandu: Educational Publishing House. **(For unit II)**
- Kirkpatrick, C. (1986). *An account of the kingdom of Nepal*. New Delhi: Asian Educational Services. **(For unit I)**
- Manandhar, T.R. (20 V.S.). *Nepalko itihasma Junga Bahadur*. Kathmandu: The DNT Prakasan. **(For unit IV)**
- Nepal, G. (2050 B.S.). *Nepalko mahabharat*. Kathmandu: SajhaPrakashan. **(For unit IV)**
- Nepali, C. (2035 B.S.). *General BhimsenThapa ra tatkalin Nepal*. 3rd edition, Kathmandu: RatnaPustakBhandar. **(For unit II)**
- Nepali, C. (2044 V.S.). *Shree Panch Rana Bahadur Shah*. 2nd edition. Kathmandu: RatnaPustakBhandar. **(For unit II)**
- Pandey, B.B. (2034 B.S.). *Rashtra bhaktiko jhalak*. Kathmandu: RatnaPustakBhandar. **(For unit II)**
- Regmi, D.R. (1975). *Modern Nepal*. Vol I-II. Calcutta: Firma L.L. Mukhopadhyaya, **(For unit II)**
- Sangraula, N.P. (2064 B.S.). *Aadhunik Nepalko itihas*. Kahtmandu: Bidharthi PustakBhandar. **(For units I to vi)**
- Sharma, B.C. (2008 B.S.). *Nepal ko aitihasik ruprekha*. (New edition). Baranashi: Krishna K. Devi. **(For unit I to IV)**

- Shrestha, S. (2064 B.S.). *Mathber Singh Thapa*. Kathmandu: Neer Kumari. (**For unit II**)
- Udas, G. (2053 B.S.). *Nepalma prajatantra ra shree panchTribhuvan*. Kathmandu: Pratap Singh. (**For unit IV**)
- Upadhyaya, S.P. (2055 B.S.). *Nepal ko samichayatmak itihas*. Lalitpur: Sajha Prakashan, (**For unit I - IV**)
- Upadhyaya, S.P. (2075), Naya Nepal Ko Adhunik Itihas. Pulchok Lalitpur: Sajha Prakashan (**Unit IV-VI**)
- Vajracharya, D. & Shrestha, T.B. (2037B.S.). *Shaha Kalka Abhilekh*. Kathmandu: CNAS, TU. (**For unit I to IV**)
- Aryal, K. & Paudel, (2006). Jana Andolan- II: A witness account. Kathmandu: Informal Sector Service Centre (INSEC), A.D. (**Unit VI**)
- Nisthuri, B (2063 B.S.). Unnais Din Jana Aandolan Diary. Kathmandu: Modern, Books, 2063 B.S. (**Unit VI**)

6.2 References

- Acharya, B. (2024 B.S.). *Shree panch badamaharajdhiraj Prithvinarayan Shah ko Samshipta Jiwani*, 4 vols. Kathmandu: His Majesty's Press Secretariat, Royal Palace.
- Husain, A. (1970). British India's relations with the kingdom of Nepal. London: George Allen and Abrabeen Ltd.
- K.C. G. (2064 B.S. (2064 B.S.). Jana Andolan ra Jana Ghoshna Haru. Kathmandu: PairaviPrakashan.
- K.C. K (2064 B.S.). Jana Andolan III. Kathmandu: Shreemati Rekha K.C.
- Khanal, M (2063 B.S.). *Itihasmaint Kahalilagdo Versa: 2062 Ko Dainik Diary*. Kathmandu: Nepal Byabasaik patrkarita tatha, Sanchar Adhyan Pratisthan.
- Lekhak, R (2063 B.S.). *Shahi Sashan Ko Ek Versa*. Kathmandu: Ganeshman Singh Adhyan Pratisthan.
- Narahari, N. (2055 B.S.). *Itihas parkasha ma shandhipatra sangraha*, (Second edition). Rolpa-Nepal: Balaram Gharti Magar.
- Ojha, M. (2009). People's history - recent Nepalese history 1950- 2008. New Delhi: Nirala Publication.
- Ojha, M. (2009). Students' politics and democracy 1940-2008. New Delhi: Nirala Publication.
- Pandey, M (2064). *Tee Abhutpurb Unnais din*. Kathmandu: PairaviPrakashan.
- Ramakant, A. (1987). *Indo-Nepalese relations 1816-187*. New Delhi: S. Chandra and Company.
- Regmi, J (2065). *Gantantra Nepal*. Kathmandu: Ganatantra Nepal Itihas Nirman Aayojan Office of Nepal Antiquary.
- Rimal, A (2063). *2062-2063: Jana Andolan II*. Kathmandu: Tank Prasad Acharya Smirti Pratishthan.
- Rose, L.E. (1973). *Nepal: Strategy for survival*. Delhi: Oxford University Press.
- Samsher, P. (2059 B.S.). *Shree tinharuko tathya brinta*, 2 vols. Kathmandu: BidhyarthiPustakBhandar.
- Sever, A. (1993). *Nepal under the Ranas*. New Delhi: Oxford and BH Publishing Co. Pvt. Ltd.
- Shah, J. (2064 BS). *Janata Uthepachhi*. Nepalganj: Antaryl.
- Stiller, L.F. (1975). *The rise of the house of Gorkha*. Rachi: Patna Jesuit Society.
- Uprety, P.R. (1980). *Nepal Tibet relations, 1850-1930*. Kathmandu: Puga Nara.
- Vajracharya, B. (1992). *Bahadur Shah: The regent of Nepal*. New Delhi: Anmol Publications

Hist.Ed.516: History of Modern India

Course No.: Hist.Ed.516
Level: M. Ed
Semester: First

Nature of course: Theoretical
Credit hours: 3
Teaching hours: 48

1. Course Introduction

This course aims to expose the students to the major events of British India and rise of political parties and its impact on Indian politics. This course also intends to focus on the history from 1935 to 1990 as the Constitutional Assembly, the new constitution of India 1950, Indo Nepalese relations till 1960, Educational policies and the role of prominent Indian leaders to modernize India.

2. General Objectives

The general objectives of this course are as follows:

- To familiarize the students with the Indian Act of 1935, Indian Independence Act 1947, Constitutional Assembly and new constitution of India 1950.
- To make the students elaborate the rise of major political parties of India and their impact.
- To provide the students with an in-depth knowledge about the relation between India and Nepal according to the Treaty of Peace and Friendship 1950, Treaty of Extradition 1953 and the Treaty of Trade and Transit 1960.
- To make the students familiar with the development of press and education in India during and after the British rule.
- To acquaint the students with the major peasant and labour uprisings and unrest during British rule.
- To make the students analyze the role of prominent Indian leaders such as JawaharLal Nehru, Indira Gandhi, and Rajiv Gandhi in Modernizing India.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Explain the Government of India Act 1935• Evaluate the Indian Independence Act of 1947• Analyze the work of constitutional assembly• Describe the main features of the constitution of India 1950	<p>Unit I Background of Indian Independency (8)</p> <p>1.1 The Government of India Act 1935</p> <p>1.2 Indian Independence Act – 1947</p> <p>1.3 Work of Constitutional Assembly.</p> <p>1.4 The Constitution of India 1950</p>
<ul style="list-style-type: none">• Explain the role of Indian National Congress and the causes of the rise of political parties in India.• Analyze the rise of Muslim League and its Impact on Indian politics• Appraise the role of communist party during freedom movement of India.	<p>Unit II: Major Political Parties: Rise and Contribution (11)</p> <p>2.1 Indian National Congress.</p> <p>2.2 Muslim League</p> <p>2.3 Communist Party of India</p>
	<p>Unit III: Indo Nepalese Relations (9)</p>

<ul style="list-style-type: none"> • Explain the Peace and Friendship Treaty of 1950. • Describe the Treaty of Extradition 1953 • Analyze the causes and effect of the Treaty of Trade and Transit 1960 	3.1 The Treaty of Peace and Friendship 1950 3.2 The Treaty of Extradition 1953 3.3 The Treaty of Trade and Transit 1950 ⁵⁰
<ul style="list-style-type: none"> • Explain the Press Trust of India 1948. • Find out and describe the role of Press Commission 1952 • Explain the purpose of sergeant scheme of education. • Discuss the Kothari Education Commission and its role in the Educational Development in India 	Unit IV: Development of Press and Education in Modern India (8) 4.1 The Press Trust of India 1948 4.2 The Press Commission 1952 4.3 Sergeant Scheme of Education 4.4 Kothari Education Commission 1964-66
<ul style="list-style-type: none"> • Evaluate the peasant uprising, it's causes and effects • State the causes of major labour unrest during British rule • Analyze the conditions of trade and industry during British rule 	Unit V. Features of Indian Economy (7) 5.1 Peasant uprising 5.2 Labour unrest 5.3 Trade and Industry
<ul style="list-style-type: none"> • Describe the role of Jawahar Lal Nehru, Indira Gandhi in the modernization of India • Justify Rajiv Gandhi as the father of new technology in India 	Unit VI: Prominent Indian Leaders to Modernize India (5) 1.1 Jawahar Lal Nehru 1.2 Indira Gandhi 1.3 Rajiv Gandhi

***Not:** The figures within parenthesis indicate the approximate teaching hours for respective unit.*

4. Instructional Techniques

Two groups of instructional techniques have been recommended. The first group comprises common techniques applicable to most of the units. The second group includes such instructional techniques which should be applied to teach specific unit.

4.1 General Instructional Techniques

Due to the theoretical nature of the course, teacher directed, guided and instructed techniques will be mostly adopted. To impart the required knowledge of the concerned units the teacher will adopt the following methods and techniques.

- Lecture
- Discussion
- Paper presentation of the project
- Brain storming and buzz session
- Report writing assignment

4.2 Specific Instructional Techniques

Units	Activities and Instructional Techniques
Unit I: Background	Presentation, group discussion
Unit II: Major political parties: Rise and contribution	Seminar, Group discussion and presentation
Unit III: Indo Nepali Relations	Presentation, Book review, case study
Unit IV: Development of Press and Education in Modern India	Individual report writing and presentation
Unit V: Features of Indian Economy	Term paper and presentation, Group Report writing, Group discussion
Unit VI: Prominent Indian Leaders to Modernize India	Group Discussion

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities

- | | |
|--|----------|
| 1) Attendance | 5 Marks |
| 2) Participation in Learning activities | 5 Marks |
| 3) First assignment | 10 Marks |
| 4) Second assignment (Midterm exam) assessment | 10 Marks |
| 5) Third assignment/ assessment | 10 Marks |

Total	40 Marks
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Unit wise activities and work for internal evaluation

Unit	Activities and work for internal evaluation
Unit I: Background	group discussion and presentation (class work for overall activities)
Unit II: Major political parties: Rise and contribution	Comparative list of major political parties rises and contribution (Participation in Learning activities,5)
Unit III: Indo Nepali Relations	Book review (One book for 1st assignment,10)
Unit IV: Development of Press and Education in Modern India	Individual report writing and presentation related to press of Nepal or India (2 nd assignment, 10)

Unit V: Features of Indian Economy	List out the Feature of Indian economy and prepare conclusions (3 rd assignment,5)
Unit VI: Prominent Indian Leaders to Modernize India	Prepare case study of one prominent Leader (3 rd assignment,5)

External Evaluation (final examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The types and number of questions to be included in the final paper are as follows.

- | | |
|--|----------|
| 1) Objective type question (multiple choice 10x1 point) | 10 Marks |
| 2) Short answer question (6 questions with 2 or x5 points) | 30 Marks |
| 3) Long answer questions (2 questions with 1 or x 10 points) | 20 Marks |

Total	60 Marks
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6. Recommended Books and References

6.1 Recommended Books

Bhasin, A.C. (1970). *Documents on Nepal's relation with India and China (1949-66)*. Bombay: Academic Books Ltd. **(For unit III)**

Brigh, J. (1958). *The life of JawaharLal Nehru*. Delhi: Indian Printing Works. **(For unit VII)**

Dodwell, H.H. (1958). *The Cambridge history of India the Cast phase (1947-1972)*. Delhi: S. Chand and Co. **(For unit III)**

Dube.S.C. (1977). *India since independence, report on India (1947-1972)*. Delhi: Vikash Pub. House.**(For unit IV)**

Grover, V.L. & Arora, R. (1980). *Indira Gandhi, her contribution to the political and social development*. Delhi: Deep and Deep Pub. **(For unit VII)**

Grower.V.L. (1981). *History of modern India (1707 till today)*. Delhi: S. Chand and Co. **(For units I, IV & VI)**

Gupta.S.B. (1995). *Rajiv Gandhi: A political study*. Delhi: Konark Pub. **(For unit VII)**

Mahajan V.D.(1970). *Fifty years of modern India (1919-1969)*. Delhi: S. Chand and Co. **(For unit I)**

Mankekar, D.L. (1995). *Lal Bahadur apolitical biography*. Bombay: PapularPrakashan. **(For unit VII)**

Mukharji, S.N. (1950). *History of education in India*. Baroda: Baroda Acharya Book Depot. **(For unit V)**

Nanda, B.R. (1995). *Mahatma Gandhi -a biography*. Bombay: Oxford University Press. (**For unit VII**)

Sarkar, S. (1995). *Modern India (1885-1947)*. Delhi: S. Chand and Co. (**For unit II**)

Vajpayi, J.N. (1974). *The extermist movement in India*. Allahabad: Ctagh Pub. (**For unit II**)

Zakira, R.(1980). *Rise of Muslims in Indian politics*. Delhi: Sumariya Pub. (**For unit II**)

6.2 References

Bose, S.C. (1934). *The Indian struggle (1920-42)*. Calcutta: Asian publishing house.

Dutta, R.C. (1982). *Advance history of India*. Delhi: Macmillan India Ltd.

Mahajan, V.D. (2000). *Modern Indian history from 1707 to present day*. Delhi: S.Chand and Co.

Pal, B.C. (2002).*India after independence*. Bombay: Penguin Books Ltd.

Report on Kothari Commission University Education Press 1966

Report on Radha Krishan Commission, University Education Press 1949

Touslinson B.R. (1993). *The new Cambridge history of India Vol III*.Delhi: Cambridg, Univ.

Hist. Ed. 517: Diplomatic and Internal History of Europe (1871-1975)

Course No.: 517
Level: M. Ed
Semester: First

Nature of course: Theoretical
Credit hours: 3
Teaching Hours: 48

1. Course Introduction

This course is designed to acquaint the students with the diplomatic relation of European powers between the critical years 1871-1975. The course also emphasizes the domestic problems faced by major European powers during these years. Besides, the major events of Europe which affected the socio-economic and political life of the people have also been included. Along with this, origin of cold war and role of USA and USSR as world power have also been included here.

2. General Objectives

The general objectives of this course are as follows:

- To familiarize the students with the political condition of Europe in 1871.
- To provide the students with in-depth knowledge of the internal affairs of major European powers.
- To acquaint the students with European Diplomacy up to World War I
- To provide the events of Eastern Question (1877-1913).
- To impart the knowledge of different aspects of the First World War.
- To provide the knowledge of European Diplomacy between the Two World Wars.
- To acquaint the students with the Rise of Dictators in Europe.
- To analyze different dimensions of the World War II and establishment of World Institutions.
- To orient the students with the USA and USSR conflict and Cold War (1949-90).

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• Evaluate the political condition of Europe in 1871	Unit I: Background (2) 1.1 Political Condition of Europe in 1871
<ul style="list-style-type: none">• Describe the policies adopted by Bismarck with Catholic and socialists• State the impact of new economic policy of Bismarck in Germany• Assess the Home Policy of William II• Analyze the challenges to the Third Republic of France• Evaluate the causes and results of commune revolt• Analyze the Royalists attempt to weaken the republic• Describe the relation of Church with Republic• Elaborate the causes of the failure of	Unit II: Internal Affairs (12) Germany 2.1 Bismarck's relation with Church and socialists 2.1 His new economic policy 2.3 William II and Home Policy France 2.4 Challenges to Third Republic 2.5 Commune Revolt of Paris 2.6 Royalists Attempt to Capture Power; Boulanger Crisis Dreyfus Case 2.7 Relation between Church and Republic Russia

<ul style="list-style-type: none"> • liberal experiment in Russia • Evaluate the impact of rise of Nihilism in Russia • Explain the cause and result of Russo Japanese War 1904-5. • Analyze the causes and outcomes of Russian Revolution of 1905. • State the causes of Bolshevik Revolution of 1917 and analyze its impact and significance. 	<p>2.8 Liberal Experiment</p> <p>2.9 Rise of Nihilists</p> <p>2.10 Russo-Japanese war 1904-5</p> <p>2.11 Russian Revolution of 1905</p> <p>2.12 Lenin and Bolshevik Revolution of 1917, Causes and Significance</p>
<ul style="list-style-type: none"> • Analyze the internal and external political circumstances for the formation of alliances and counter alliances system in Europe and its impact in international relation. • Elaborate the importance of Anglo Japanese alliance 1902 • Describe the Moroccan crisis, its phases and result in European politics. • Explain the causes and impact of Anglo-German Hostilities 	<p>Unit III: European Diplomacy up to World War I (5)</p> <p>3.1 Dreikaiserbund, Three Emperors' League 1873, Dual Alliance 1879, Triple Alliance 1882, Reinsurance Treaty 1887, Franco-Russian alliance 1894, Anglo - French Entente – 1904 and Anglo - Russian Entente – 1907</p> <p>3.2 Anglo-Japanese Alliance – 1902</p> <p>3.3 Moroccan Crisis (1905-11)</p> <p>3.4 Anglo-German Hostilities</p>
<ul style="list-style-type: none"> • State the meaning and nature of eastern question • Analyze the causes and results of Russo-Turkish War 1877 • List the major decisions of Berlin Congress 1878 	<p>Unit IV: Eastern Question (1877-1913) (5)</p> <p>4.1 Meaning and Nature of Eastern Questions</p> <p>4.2 Russo-Turkish War and Treaty</p> <p>4.3 Congress of Berlin 1878 and Decisions</p>
<ul style="list-style-type: none"> • Analyze the causes of World War I. • Critically assess the provisions of the treaty of Versailles. • Discuss the questions of war guilt. 	<p>Unit V: First World War (4)</p> <p>5.1 Diplomatic background and causes</p> <p>5.2 Treaty of Versailles, its appraisal</p> <p>5.2 Question of War Guilt</p>
<ul style="list-style-type: none"> • Elaborate the situation for the formation of League of Nations and its success and failure. • State the problems of restoration and policy adopted to solve it. • Describe the British policy of appeasement and its impact on European countries. • Evaluate the role of Locarno pact Kellogg-Briand pact and Rome - Berlin Tokyo Axis in maintaining 	<p>Unit VI: European Diplomacy between the Two World Wars (6)</p> <p>6.1 League of Nations, its success and failure</p> <p>6.2 Problem of reparation and adopted Policies</p> <p>6.3 British policy of Appeasement</p> <p>6.4 Locarno Pact, Kellogg - Briand Pact and Rome, Berlin Tokyo Axis</p> <p>6.5 Axis Power Forward Policy, Annexation of Austria, Ethiopia, Czechoslovakia and Manchuria</p>

<ul style="list-style-type: none"> • peace and enhancing war. • Discuss the role of Axis power in annexing Austria, Ethiopia, Czechoslovakia and Manchuria 	
<ul style="list-style-type: none"> • Explain the causes of the rise of Mussolini in Italy, mention his role in European politics. • Present the causes of the rise of Hitler in Germany and state the result of his forwarding policy. • Analyze the role of Stalin in USSR during 2nd World War and aftermath. 	<p>Unit VII: Rise of Dictators in Europe (3)</p> <p>7.1 Mussolini 7.2 Hitler 7.3 Stalin</p>
<ul style="list-style-type: none"> • Analyze the causes and effects of 2nd world war. • State the objectives, organs and agencies of UNO and assess its role in world peace. 	<p>Unit VIII: World War II and World Institutions (5)</p> <p>8.1 Causes and effects of the 2nd World War 8.2 United Nations Organization's objectives, organs and agencies and its role in maintaining world peace</p>
<ul style="list-style-type: none"> • Evaluate the causes of the division of world in two power camps. • Analyze the role of USA and USSR in NATO and Warsaw pact in maintaining their power supremacy and pear. • Present the meaning, origin and stages of cold war. 	<p>Unit IX: World Power Camps, U.S.A. - .S.S.R. Conflict and Cold War (1949-90) (6)</p> <p>9.1 NATO and Warsaw Pact -Formation and Purpose 9.2 Role of USA in NATO and USSR in Warsaw- Pact 9.3 Origin, meaning, causes and stages of Cold War</p>

Note: The figures within parenthesis include approximately teaching hours allocated to respective units

4. Instructional Techniques

Two groups of instructional techniques have been recommended. The first group comprises common techniques applicable to most of the units. The second group includes such instructional techniques which should be applied to teach specific unit.

4.1 General Instructional Techniques

Due to the theoretical nature of the course, teacher directed, guided and instructed techniques will be mostly adopted. To impart the required knowledge of the concerned units the teacher will adopt the following methods and techniques.

- Lecture
- Discussion
- Paper presentation of the project
- Brain storming and buzz session
- Report writing assignment

4.2 Specific Instructional Techniques

Units	Instructional Techniques
Unit I: Background	Discussion

Unit II: Internal Affairs	Case study presentation, seminar
Unit III: European Diplomacy up to world war I	Seminar, presentation
Unit IV: Eastern Question (1877-1913)	Individual report writing, group discussion
Unit V: First World war	Project work, term paper and presentation
Unit VI: European Diplomacy Between the Two World Wars	Group discussions
Unit VII: Rise of Dictators and Their Role in the World War	Case study
Unit VIII: World War II and World Institutions	Group report writing, group discussion
Unit IX: World Power Camps. U.S.A. – U.S.S.R. Conflict and Cold War (1949-75)	Group discussion

Not: The figures within parenthesis indicate the approximate teaching hours affected respective unit.

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities

Attendance	5 Marks
Participation in Learning activities	5 Marks
First assignment	10 Marks
Second assignment (Midterm exam) assessment	10 Marks
Third assignment/ assessment	10 Marks

Total 40 Marks

Unit wise activities and work for internal evaluation

Units	Activities and Instructional Techniques
Unit I: Background	group discussion and presentation (class work for overall activities)
Unit II: Internal Affairs	Comparative list of major political parties rises and contribution (Participation in Learning activities, 5)
Unit III : European Diplomacy up to world war I	Seminar paper presentation in class (1 st assignment 5)
Unit IV: Eastern Question (1877-1913)	Report writing, and presentation based on secondary data /contents regarding the Eastern Question (1877-1913) (1 st assignment, 5)
Unit V: First World war	Display 1 st world war related videos and note down 15 points Aid (2 nd assignment, 2)
Unit VI: European Diplomacy Between the Two World Wars	Make table to compare two world wars European Diplomacy Aid (2 nd assignment)
Unit VII: Rise of Dictators and Their Role in the World War	Prepare case study of one Dictator (3 rd assignment, 5)
Unit VIII: World War II and World Institutions	One Book review related to 2 nd world war (3 rd assignment, 5)
Unit IX: World Power Camps. U.S.A. – U.S.S.R. Conflict and Cold War (1949-75)	List out the conflicts points between USA and USSR in relation to cold war. (3 rd assignment)

Not: The figures within parenthesis indicate the approximate teaching hours affected respective unit.

5.2 External Evaluation (final examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The types and number of questions to be included in the final paper are as follows.

Objective type question (multiple choice 10x1 point)	10 Marks
Short answer question (6 questions with 2 or x5 points)	30 Marks
Long answer questions (2 questions with 1 or x 10 points)	20 Marks

Total	60 Marks
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6. Recommended Books and References

6.1 Recommended Books

- Fay, S.B (1975). *Origins of the world war*. Delhi: Urasia Publishing House. (**Unit III, IV, V**)
Hozen, C.D. (1976). *Europe after 1815*. Delhi: Schand and Company Ltd. (**Unit V**)
Lipson, E. (197 ?). *Europe in 19th and 20th Century*. London: ELBS. (**Unit I, V, VII**)
Mahajan, V.D. (1974). *Modern Europe since 1789*. Delhi: S. Chand and Company. (**Unit III, VI, VII, IX**)
Majumdar, P.K. (1973). *History of Modern Europe*, Vol. I and II. Illahabad: KitabMahal. (**Unit I to VIV**)
Ketelby, C.D.M. (1982). *History of Modern Times*. Calcutta: Oxford University Press. (**Unit I, II, IV, V, VI**)

6.2 References

- Brezinski, Z. & Hunting, S. P. (1966), *Political Power USA and USSR*. London: Penguin Press. (**Unit IX**)

Hist. Ed. 518: History and Historiography

Course No: Hist. Ed. 518
Level: M. Ed.
Semester: First

Nature of course: Theoretical
Credit hours: 3
Teaching hours: 48 Hours

1. Course Introduction

This course is designed to expose students to meaning, nature and scope of history and major trends and ideas that developed in history writing during different phases of time from its origin to 19th century in Europe. Similarly, it deals with the development of historiography in India and Nepal.

2. General Objectives

The general objectives of this course are as follow.

- To acquaint students with the meaning, nature, scope and importance of history and historiography.
- To critically analyze the major trends of thinking that developed during different historical era in European historiography from its origin to 18th century.
- To assess the role of German historians in the development of scientific history.
- To critically interpret the origin and development of historiography in India.
- To survey the trends that appeared in the development of Nepalese historiography and its shortcomings
- To familiarize the students with the major ideas associated with historiography.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none">• State the meaning of history and historiography• Explain the nature of history and historiography• Present the scope of history and historiography• Describe the importance of history and historiography	Unit I: Introduction to History and Historiography (4) 1.1 Meaning 1.2 Nature 1.3 Scope 1.4 Importance
<ul style="list-style-type: none">• Analyze the features of Greco-Roman historiography• Evaluate the Hellenistic period and features• Describe the characteristics of Christian historiography• Elaborate the features of Renaissance historiography and its main achievements• Discuss the enlightenment period and list its features• Asses the role of German historians in the development of scientific history	Unit II: A Brief Survey of (past and present) European Historiography (15) 2.1. Greco-Roman historiography-its main characters 2.2. Hellenistic period and its features 2.3 Christian era and its features 2.4 Renaissance historiography and its main achievements 2.5 Enlightenment period and its features 2.6 German and the idea of scientific history
<ul style="list-style-type: none">• Clearly present the concept of philosophy of history• Describe Vicco's theory of	Unit III: Philosophy of History (10) 3.1 Philosophy of history. 3.2 Vicco's theory of historical change.

<ul style="list-style-type: none"> historical change • State the idea of Voltaire's in history • Present the gist of Hegel's theory of history • Describe Karl Marx and the concept of historical materialism • Analyze the Subaltern history writing 	<ul style="list-style-type: none"> 3.3 Voltaire's idea on history 3.4 Hegel's speculative theory of history 3.5 Karl Marx and historical materialism 3.6 Subaltern history writing
<ul style="list-style-type: none"> • State the origin and development of Indian historiography • Describe the role of historians in the development of Indian historiography • Analyze the trends of development of Nepali historiography • Point out the weaknesses of Nepali Historiography 	<p>Unit IV: South Asian Historiography (9)</p> <ul style="list-style-type: none"> 4.1 Origin and development of Indian historiography 4.2 Role of historians in the development of Indian historiography 4.3 A brief survey on the origin, development and recent trends on Nepali historiography 4.4 Shortcomings in Nepali historiography
<ul style="list-style-type: none"> • Discuss the role of proverbs, folklores, fiction in the formation of history • Differentiate among subjectivity, objectivity and knowledge • Explain the importance of public opinion • Analyze the contemporary records 	<p>Unit V: Principle Ideas Associated with Historiography (10)</p> <ul style="list-style-type: none"> 5.1 Proverbs, folklores, fiction in the formation of history 5.2 Subjectivity and objectivity and knowledge 5.3 Public opinion 5.4Contemporary records

Not: The figures within parenthesis indicate the approximate teaching hour affected respective unit.

4. Instructional Techniques

Two groups of instructional techniques have been recommended. The first group comprises common techniques applicable to most of the units. The second group includes such instructional techniques which should be applied to teach specific unit.

4.1 General Instructional Techniques

Due to the theoretical nature of the course, teacher directed, guided and instructed techniques will be mostly adopted. To impart the required knowledge of the concerned units the teacher will adopt the following methods and techniques.

- Lecture
- Discussion
- Paper presentation of the project
- Brain storming and buzz session
- Report writing assignment

4.2 Specific Instructional Techniques

Units	Activities and Instructional Techniques
Unit I : Introduction to History and Historiography	Group discussion, report writing

Unit II: A Brief Survey on (past and Present) European Historiography	Project work, Seminar, individual report writing, group discussion and presentation
Unit III: Philosophy of History	Group report, seminar
Unit IV: South Asian Historiography	Book review
Unit V: Principal Ideas Associated with historiography	Report writing, project work

5 Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities

- | | |
|--|----------|
| 6) Attendance | 5 Marks |
| 7) Participation in Learning activities | 5 Marks |
| 8) First assignment | 10 Marks |
| 9) Second assignment (Midterm exam) assessment | 10 Marks |
| 10) Third assignment/ assessment | 10 Marks |

Total	40 Marks
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Unit wise activities and work for internal evaluation

Units	Activities and work for internal evaluation
Unit I: Introduction to History and Historiography	Make a table to compare for History and Historiography meaning; scope and nature (Participation in Learning activities, 5)
Unit II: A Brief introduction on (past and Present) European Historiography	List out the similarities and differences of (past and Present) European Historiography (1 st assignment 5)
Unit III: Philosophy of History	Write main 15 points based on Philosophy of History and present in class (1 st assignment 5)
Unit IV: South Asian Historiography	Book Review in relation to South Asian Historiography (2 nd assignment, 10)
Unit V: Principal Ideas Associated with historiography	Prepare different card papers writing with Principal Ideas Associated with historiography and present in class. (3 rd assignment, 10)

5.2 External Evaluation (final examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The types and number of questions to be included in the final paper are as follows.

- | | |
|--|----------|
| 4) Objective type question (multiple choice 10x1 point) | 10 Marks |
| 5) Short answer question (6 questions with 2 or x5 points) | 30 Marks |
| 6) Long answer questions (2 questions with 1 or x 10 points) | 20 Marks |

Total	60 Marks
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6 Recommended Books and References

6.1 Recommended Books

Adhikari, K.K. (1980). *A Brief survey of nepalese historiography*. Kathmandu: Sahayogi Press.

Unit I, IV, V

Ali, B. Sheik (1978). *History: The Theory and Method*.....: Macmillan.

Unit V

Carr, E.H. (1987). *What is history*. England: Penguin. **Unit I-V**

Collingwood, R.G. (). *The idea of history* (Latest Edition). London: Oxford University Press.

Unit I-V

Gautam, R. (2005). *History of history writing*. New Delhi: Adrout Publisher. **Unit I-III**

Kshetry, D.B. (). *A Brief survey analysis of history writing in Nepal*. Pokhara: Parbati Kshetry.

Unit IV

Majumdar, R.C. (1970). *Historiography in modern India*. New Delhi: Asia Publishing House.

Unit IV

6.2 References

www.wikipedia.com **Subaltern History**

ICT Education

- i. ICT. Ed. 515: Computer Architecture
- ii. ICT. Ed. 516: Java Programming
- iii. ICT. Ed. 517: Educational Technology
- iv. ICT. Ed. 518: Advanced Operating System

ICT. Ed 515: Computer Architecture

Course no.: ICT. Ed 515

Nature of course: Theoretical + practical

Level: M.Ed.

Credit hours: 3 (2T+1P)

Semester: First

Teaching hours: 64 (32+32)

1. Course Introduction

This course is an advanced level course of computer architecture and organization. It covers topics on both physical design (organization) and logical design (architecture) of the computer. The course comprises recent processor technology, memory technology, pipelining, vector processing, SIMD architecture, multithreaded architecture and instruction level parallelism.

2. General Objectives

The general objectives of this course are as follows.

- To introduce recent processor technology;
- To discuss memory technology;
- To identify pipelining principles;
- To describe vector processing;
- To discuss SIMD Processor;
- To explain multithreaded architecture; and
- To discuss instruction level parallelism.

3. Course Outlines

Specific Objectives	Contents	Teaching Hours
<ul style="list-style-type: none">• Differentiate between computer organization and computer architecture• Define principle of parallel computing.• List up the constraints of conventional computer architecture.• Elaborate the state of computing.• Explain parallelism in the uniprocessor system.• Classify parallel computing architecture;• Identify and analyze the performance metrics and measures of parallel processors• Explain the structure of the parallel	<p>Unit I: Introduction</p> <p>1.1 Computer organization vs computer architecture 1.2 Parallel computing 1.3 Constraints of conventional computer architecture 1.4 The state of computing 1.5 Evolution of parallel processors 1.6 Parallelism in uniprocessor System 1.7 Multiprocessors and multicompiler 1.8 Parallel architecture classification schemes</p>	4

computer system.	1.9 Performance of parallel processors – metrics and measures 1.10 Structure of parallel computers	
<ul style="list-style-type: none"> • Explain the advanced processor technology • Identify and explain the components of processor organization. • Explain register organization. • Describe instruction set architecture. • List and explain addressing modes with their applications. • Compare and Contrast between RISC and CISC Scaler processors. • Describe and differentiate between super scalar and VLIW architecture. • Explain vector, array and symbolic processors. 	Unit II: Processors <ul style="list-style-type: none"> 2.1 Introduction 2.2 Advanced processor technology 2.3 Processor organization 2.4 Register organization 2.5 Instruction set architecture 2.6 Instruction formats and addressing modes 2.7 RISC scalar and CISC scalar processors 2.8 Super scalar and VLIW architecture 2.9 Vector, array and symbolic processors 	6
<ul style="list-style-type: none"> • Explain inclusion, coherence and locality of reference • Explain and implement page replacement algorithms • Explain the cache design and performance issues • Describe shared memory organization • Describe multicore architecture • Identify the cache coherence problem 	Unit III: Memory Technology <ul style="list-style-type: none"> 3.1 Hierarchical memory technology 3.2 Inclusion, coherence and locality of reference 3.3 Virtual memory technology 3.4 Page replacement algorithms 3.5 Cache memory 3.6 Elements of cache design 3.7 Cache performance issues 3.8 Shared Memory organization 3.9 Multicore architecture and cache coherence problem 	4
<ul style="list-style-type: none"> • Explain the principles of pipelining with their implementation • Identify linear and nonlinear pipeline processors • Classify the pipeline processor • Compare and contrast between design of arithmetic and instruction pipelines • Identify pipeline hazards • Explain dynamic instruction scheduling • Identify the advanced pipelining techniques 	Unit IV: Pipelining <ul style="list-style-type: none"> 4.1 Introduction 4.2 Pipelining principles and implementations 4.3 Linear and non-linear pipeline processor 4.4 Classification of pipeline processor 4.5 Arithmetic pipeline design 4.6 Instruction pipeline design 4.7 Pipelining hazards 4.8 Dynamic instruction scheduling 4.9 Advance pipelining 	6
<ul style="list-style-type: none"> • Explain the vector processing principles • Discuss multivector multiprocessor. • Identify compound vector processing • Explain the SIMD architecture • Explain the SIMD interconnection 	Unit V: Multivector and SIMD Computers <ul style="list-style-type: none"> 5.2 Vector processing principles 5.3 Multivector multiprocessor 5.4 Compound vector processing 	4

<ul style="list-style-type: none"> • Discuss the SIMD parallel algorithms. 	5.5 SIMD architecture 5.6 SIMD interconnection network 5.7 SIMD parallel algorithms	
<ul style="list-style-type: none"> • Define the multithreaded computer architecture • Explain the latency hiding techniques • Demonstrate the scalable multithreaded architecture • Describe cluster computing • Describe neural computing. 	Unit VI: Multithreaded Architecture 6.1 Latency hiding techniques 6.2 Scalable multithreaded architecture 6.3 Cluster computing 6.4 Neural computing	4
<ul style="list-style-type: none"> • Describe instruction level parallelism • Identify the basic ILP design issues • Describe the model of the typical processor • Analyze Tomasulo's algorithm • Elaborate the branch prediction technique • Describe thread level parallelism • Find out the recent trends in the parallel system 	Unit VII: Instruction Level Parallelism 7.1 Introduction 7.2 Basic design issues 7.3 Problem definition 7.4 Model of typical processor 7.5 Tomasulo's algorithm 7.6 Branch prediction 7.7 Thread level parallelism 7.8 Trends in the parallel system	4

Part II: Practical [32 Hours]

Case Study and Laboratory Work:

Case Study:

1. Pentium processor(CISC)
2. SPARC(RISC)
3. Cray family and cray-1

Practical Work

1. Measure the performance of the processor.
2. Write a program describing the basic instruction addressing modes.
3. Write a program to implement page replacement algorithms and analyze the performance of the algorithms.
4. Simulate an arithmetic and an instruction pipelining.
5. Implement the SIMD parallel algorithms.
6. Perform a matrix multiplication.
7. Simulate an instruction level parallelism.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of the specific instructional techniques applicable to specific units.

4.1 General Techniques

- Providing the reading materials to the students to familiarize the units.

- Lecture, question-answer, discussion, brainstorming, practical, and buzz sessions.

4.2 Specific Instructional Techniques

Unit	Activity and instructional techniques	Teaching Hours (80)
I to VI	Lecture, discussion, practical	

Note: Specific instructional techniques may or may not be required for each of the units mentioned in the course outline.

5. Evaluation

Evaluation (Internal Assessment and External Assessment)

Nature of course	Internal Assessment	External Practical Exam/Viva	Semester Examination	Total Marks
Theory	40%	20%	40%	100%

Note: Students must pass separately in internal assessment, external practical exam / viva voce and the semester examination.

17.1 Evaluation for Part I (Theory)

a. Internal Evaluation (40%)

The internal evaluation will be conducted by the course teacher based on the following activities.

6) Attendance	5 points
7) Participation in learning activities	5 points
8) First assessment (written assignment)	10 points
9) Second assessment (Term examination)	10 points
10) Third assessment (Internal practical exam/case study)	10 points
<hr/> Total	40 points

Note: The first assignment/assessment might be book review /article review, quiz, home assignment etc. according to the nature of the course. The second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc., and the third assignment will be a term exam.

b. External Evaluation (Final Examination) (40%)

The Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester.

- | | |
|--|----------|
| 1) Objective type question (Multiple choice questions 10x1 mark) | 10 marks |
| 2) Short answer questions (6 questions x 5 marks) | 30 marks |

Total	40 marks
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17.2 Evaluation for part II (practical) (20%)

Nature of the course	Semester final examination by External Examiner	Total percent
Practical	100%	100 %

5.2.1. Practical Examination Evaluation Scheme

- | | |
|------------------------------------|------|
| a) External assessment | 100% |
| i) Record book | 20% |
| ii) Laboratory work exam/case..... | 40% |
| iii) Viva voce..... | 40% |

6. Recommended books and reading materials (including relevant published articles in national and international journals)

- i. Hwang, K. & Jotwani, N. - *Advanced Computer Architecture (Parallelism, Scalability, Programmability)*, 2nd Edition, McGraw-Hill Education.
- ii. Chopra, R. *Advanced computer architecture (A Practical Approach)* 1st Edition, S. CHAND, New Delhi
- iii. Stallings, W. *Computer organization and architecture* 10th edition, Prentice-Hall India Limited, New Delhi.
- iv. Tanenbaum, A.S. *Structured computer organization*, Prentice Hall India Limited, New Delhi.
- v. Mano, M. M.: *Computer system architecture*, Latest Edition.
- vi. Hayes, J. P.: *Computer Architecture and Organization*, Latest Edition.

ICT. Ed 516: Java Programming

Course no. : ICT. Ed 516

Nature of the course: Theoretical + Practical

Level: M.Ed.

Credit hours: 3 (2T+1P)

Semester: First

Teaching hours: 64 (32+32)

1. Course Introduction

This course is a study on Java language techniques beyond the introductory course which basically focuses GUI and event-driven programming, database connectivity, socket programming, distributed programming and servlets and JSP technology.

2. Course Objectives

After the completion of this course, the students should be able to:

- Introduce Basic Java Programming
- Exemplify the concept of GUI programming and JDBC
- Demonstrate socket programming, remote objects, and JSP technology

3. Course Outlines:

Specific Objectives	Contents	Teaching Hours
<ul style="list-style-type: none">• Review of the object-oriented concept using JAVA language.• Demonstrate object-oriented concepts in including array, class, object, overloading, inheritance, interface package and files.	<p>Unit 1: Review of Programming Concepts in Java</p> <p>1.1. Java architecture, Java buzzwords, path and classpath variables, Sample Java program, compiling and running Java programs.</p> <p>1.2. Arrays, for each loop, class and object, overloading, access privileges, interface, inner class, final and static modifiers, packages, inheritance, overriding.</p> <p>1.3. Handling exceptions: Try, catch, finally, throws, and throw keywords, creating exception class</p> <p>1.4. Concurrency: Introduction, thread states, writing multithreaded programs, thread properties, thread synchronization, thread priorities</p> <p>1.5. Working with files: Byte Stream Classes, Character Stream Classes, Random Access File, Reading and Writing Objects.</p> <p>Practical Work</p> <ul style="list-style-type: none">• Array, class, object, overloading, inheritance, interface, package, files	12
<ul style="list-style-type: none">• Describe the user interface in Java.• Handle the GUI control• Create a menu, toolbar	<p>Unit 2: User Interface Components with Swing</p> <p>2.1. Introduction: Concept of AWT, AWT vs swing, Java applets, applet life cycle, swing class</p>	12

<ul style="list-style-type: none"> and taskbar Demonstrate GUI components 	<p>hierarchy, component and containers</p> <p>2.2. Layout management: No layout, flow layout, border layout, grid layout, gridbag layout</p> <p>2.3. GUI Controls: Text fields, password fields, text areas, scroll pane, labels, check boxes, radio buttons, borders, combo boxes, sliders</p> <p>2.4. Menu, menu item, icons in menu items, check box and radio buttons in menu items, pop-up menus, keyboard mnemonics and accelerators, enabling and disabling menu items, toolbars, tooltips</p> <p>2.5. Option dialogs, creating dialogs, file choosers, color choosers, internal frames, frames.</p> <p>Practical Work</p> <ul style="list-style-type: none"> Components, containers, layout managers, menus, dialog boxes, 	
<ul style="list-style-type: none"> Demonstrate an event handling concepts in JAVA. Demonstrate GUI components 	<p>Unit 3: Event Handling</p> <p>3.1. Event handling concept, listener interfaces, using action commands, adapter classes</p> <p>3.2. Handling action events, key events, focus events, mouse event, window event, item events</p> <p>Practical Work</p> <ul style="list-style-type: none"> Listener interfaces, adapter classes 	4
<ul style="list-style-type: none"> Describe a database connection concept using JAVA and JDBC. Demonstrate JDBC and DDL, DML statements. 	<p>Unit 4: Database Connectivity</p> <p>4.1. JDBC architecture, JDBC driver types, JDBC configuration, managing connections, statements, result set, SQL exceptions</p> <p>4.2. DDL and DML operations using Java, prepared statements, multiple results transactions, SQL escapes.</p> <p>Practical Work</p> <ul style="list-style-type: none"> JDBC steps, using DDL and DML statements 	6
<ul style="list-style-type: none"> Explain the network programming using JAVA and network protocols. Demonstrate socket programming with 	<p>Unit 5: Network Programming</p> <p>5.1. Transmission control protocol (TCP), User datagram protocol (UDP), ports, IP address network classes in JDK</p>	6

connection class.	<p>5.2. Socket programming using TCP, socket programming using UDP, working with URL's, working with URL connection class.</p> <p>Practical Work</p> <ul style="list-style-type: none"> • Socket programming with TCP and UDP, URL and URL connection class 	
<ul style="list-style-type: none"> • Explain the GUI and JavaFX concept. • Demonstrate a layouts, control, menu, dialog box using JavaFX. 	<p>Unit 6: GUI with JavaFX</p> <p>6.1. Introduction, JavaFX vs swing, JavaFX layouts: FlowPane, BorderPane, Hbox, VBox, GridPane</p> <p>6.2. JavaFX UI Controls: Label, TextField, Button, RadioButton, CheckBox, hyperlink, menu, tooltip, FileChooser.</p> <p>Practical Work</p> <ul style="list-style-type: none"> • Layouts, controls, menus, dialog box 	4
<ul style="list-style-type: none"> • Explain the servlet and server pages • Demonstrate a servlet programing • Demonstrate a JDBC and ervlets. • Demonstrate a JDBC and JSP. 	<p>Unit 7: Servlets and Java Server pages</p> <p>7.1. Web container, introduction to servlets, life cycle of servlets, the servlet APIs, writing servlet programs, readingform parameters, processing forms, handling HTTP request and response (GET / POST request), database access with servlets, handling cookies</p> <p>7.2. Servlet vs JSP, JSP access model, JSP syntax (directions, declarations, expression, scriptures, comments), JSP implicit objects, object scope, processing forms, database access with JSP.</p> <p>Practical Work</p> <ul style="list-style-type: none"> • Creating forms, processing forms, JDBC and servlets, JDBC and JSP 	14
<ul style="list-style-type: none"> • Describe the RMI and architecture. • Describe the CORBA and architecture. • Demonstrate the RMI program. 	<p>Unit 8: RMI and CORBA</p> <p>8.1 Introduction to RMI, architecture of RMI, creating and executing RMI applications</p> <p>8.2 Introduction to CORBA, RMI vs CORBA, architecture of CORBA, concept of IDL.</p>	6

	<p>Practical Work</p> <ul style="list-style-type: none"> • RMI programs 	
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9 Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to particular units.

4.1 General Techniques

Reading materials will be provided to students in each unit. Lecture, discussion, use of multi-media projector, brain storming will be used in all units.

4.2 Specific Instructional Techniques

Demonstration is an essential instructional technique for all units in this course during teaching learning process. Specifically, demonstration with practical work will be a specific instructional technique in this course. The details of suggested instructional techniques are presented below

Laboratory Work: The students need to write programs related to basic java programming concepts, designing GUI, event handling, JDBC, network programming, web programming, and distributed programming.

5. Evaluation

Internal Assessment	External Practical Exam/Viva	Semester Examination	Total Marks
40 Points	20 Points	40 Points	100 Points

Note: Students must pass separately in the internal assessment, the external practical exam and the semester examination.

5.1 Internal Evaluation (40 Points)

The internal evaluation will be conducted by the subject teacher based on the following criteria.

- | | |
|--|-----------|
| 11) Class attendance | 5 points |
| 12) Learning activities and class performance | 5 points |
| 13) First assignment (written assignment) | 10 points |
| 14) Second assignment (Case study/project work with presentation) | 10 points |
| 15) Terminal examination | 10 Points |

Total	40 points
5.2 Semester Examination (40 Points)	
3) Objective questions (multiple choice 10 questions x 1mark)	10 Points
4) Subjective answer questions (6 questions x 5 marks)	30 Points
Total points	40

5.3 External Practical Exam/Viva (20 Points)

The Examination Division, Dean's Office, Faculty of Education will conduct the final examination at the end of the semester.

10 Recommended books and Reference materials (including relevant published articles in national and international journals)

Recommended books

1. . Horstmann, C.S. (2018). *Core java volume I—Fundamentals (11th Edition)* Pearson,
2. Horstmann, C. S. (2019). *Core java volume II-Advance features*, Pearson.
3. Schildt, H. (2018). *Java: The complete reference (11th Edition)*. McGraw-Hill Education.
1. D.T. Editorial Services (2015), Java 8 programming Black Book. Dreamtech Press.

ICT. Ed 517: Educational Technology

Course code: ICT. Ed 517
Level: M.Ed.
Semester: First

Nature of the course: Theoretical
Credit hour: 3
Teaching hours: 48

1. Course Introduction

This course aims at giving the students exposure to educational technology and influencing the 21st century teaching learning environment. It also helps to investigate the process of analyzing, designing, developing, implementing, and evaluating the instructional environment and learning materials to improve teaching and learning. The course includes fundamentals of educational technology, disruptive educational technology, educational philosophy and technological framework, technology-based instructional design and national policy and plan. The students are expected to learn the contents working on the problem-based inquiry approach.

2. General Objectives

The general objectives of the course are as follows.

- To explain educational technology and its impacts on learners, classrooms and schools,
- To describe the disruptive educational technology used in the education system,
- To explore the application of educational technology in curriculum development, e-pedagogy, assessment and evaluation,
- To explain technology integration in instructional design, and
- To define the government policy and plan about educational technology in the local context.

3. Specific objectives and contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Define educational technology for teaching learning• Describe 21st century learning environment• Explore the students' engagement in web 2.0, e-learning 3.0 and social media,• Compare online vs. blended learning modes.• Define the re-structuring of school system	<p>Unit 1: Educational Technology and Changing shape of Education (10)</p> <p>1.1 Introduction to educational technology 1.2 Types of educational technology 1.3 21st century learning technology and learners 1.4 Elements of 21st century learning environments 1.5 Engaging learners in ICT and connecting them using Web 2.0 and e-learning 3.0 Tools 1.6 Engaging learners in social media, multimedia and its impacts. 1.7 Issues of online and blended learning 1.8 Reforming the school system: re-schooling, de-schooling</p>

<ul style="list-style-type: none"> • To become familiar with different disruptive technologies • Explore the application of AI, AR, VR to education • Discuss the educational cloud services in education. • Explore the use of IoT and mobile technology, gamification and simulation in learning. 	<p>Unit 2: Disruptive Educational Technologies (10)</p> <p>2.1 Application of Artificial Intelligence in teaching learning 2.2 Virtual Reality (AR) and Augmented Reality in teaching learning 2.3 Cloud services in education 2.4 Internet of things (IoT) in the classroom 2.5 Application of mobile technology to teaching and learning. 2.6 Gamification and simulation in teaching and learning</p>
<ul style="list-style-type: none"> • Explain the theories of ICT education in relation to general education theories • Discuss the PBS model • Explore the TPACK, TIM, triple E framework. • Apply the SAMAR model in the teaching and learning process 	<p>Unit 3: Educational Philosophy and Technological Framework (10)</p> <p>3.1 Philosophy of ICT education: epistemology, ontology and methodology in learning 3.2 ICT education theories from the perspective of different schools of psychology: Behaviourism, Cognitivism, Constructivism, Connectivism 3.3 Problem-based vs project-based learning 3.4 TPACK Framework and practices 3.5 TIM (Technology integration matrix) framework 3.6 SAMR (substitution, augmentation, modification, redefinition) model 3.7 Triple E (engagement, enhancement and extension) framework</p>
<ul style="list-style-type: none"> • Explore the ICT instruction design model • Demonstrate material development and educational technology • Explore the reflection of ICT integration into the curriculum development model. • Explore the application of the assessment in the classroom • Discuss the evaluation and monitoring model integration 	<p>Unit 4: Instructional Design and Educational Technology (10)</p> <p>4.1 Integrating Technology and eedia into instructional design: The ASSURE model 4.2 Instructional materials development and integration of educational technology practices 4.3 Reflection of educational technology in curriculum development 4.4 Reflection of educational Technology in assessment and evaluation. 4.5 Evaluation and monitoring system and integration of educational technology</p>
<ul style="list-style-type: none"> • Review ICT based curriculum in school education • Explore national and international reports of ICT education and ICT in education • Discuss the role of ICT in pandemic situations 	<p>Unit 5: ICT in Education practices (8)</p> <p>5.1 Review of the ICT Education Curriculum at school level 5.2 National Education Policy and Plan on ICT in Education 5.3 SDG 2030 and educational echnology 5.4 UNESCO reports on teacher competency</p>

	5.5 The role of educational technology in pandemic situations
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4. Instructional Techniques

4.1 General Techniques

As the nature of the course, the instructor will adopt child-centered learning, particularly the following techniques.

- Lecture and illustration
- Discussion

4.2 Specific Instructional Techniques

Unit	Activity and Instructional Techniques
I	Guest lecture, demonstration
II	Overview, lecture
III	Lecture and discussion
IV	Critical analysis of different books
V	Prepare book reviews, conduct seminar and write a long essay

4.3 Evaluation Instruction

5. Evaluation

5.1 Evaluation (Internal Assessment and External Assessment)

Nature of the course	Internal Assessment	Semester Examination	Total Marks
Theory	40%	60%	100%

Note: The students must pass separately in the internal assessment, the external practical exam / viva and /or the semester examination.

5.2 Evaluation

Internal Evaluation (40%)

The internal evaluation will be conducted by the course teacher based on the following activities

16) Attendance	5 points
17) Participation in learning activities	5 points
18) First assessment(written)	10 points
19) Second assessment(book reviews)	10 points
20) Third assessment (seminar)	10 points
<hr/> Total	40 points

External Evaluation (60%)

The Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester.

5) Objective type questions (Multiple choice 10 questionsx1mark)	10 marks
6) Short answer questions (6 questions x 5 marks)	30 marks
7) Long answer questions (2 question x 10 mark)	20
Total	60 marks

Recommended books

Kolb, L. (2017). *Learning first, technology second: The educator's guide to designing authentic lessons* (First edition). International Society for Technology in Education.

Roblyer, M. D. (2016). *Integrating educational technology into teaching* (Seventh edition). Pearson.

Smaldino, S. E., Lowther, D. L., & Russell, J. D. (2012). *Instructional technology and media for learning* (10th ed). Boston: Pearson.

Heinich, R. ; Molenda, M.; Rusell, J. D. & Smalodino, S. E.(1993). *Instructional media and technologies for learning*. Ohio: Merrill Prentice Hall.

References

Instructional Technology and Media for Learning With Video-enhanced Pearson Etext Access Card. (2014). Pearson College Div.

Cotterell, A.; Ennals, R. (1988). *Advanced information technology in education and training*. London: Edward Arnold.

Forcier, R. C. & Descy, D. E. (2002). *The computer as an educational tool: productivity and problem solving*. Ohio: Merrill Prentice Hall.

Giardina, M. (1991). *Interactive multimedia learning environments*. Hongkong: Springer Verlag.

Malik, U. (2000). *National seminar on information technology and the school process. Proceedings 16-17 Feb. 2000*. New Delhi: NCRT.

Mckay, E. (ed). (2007). *Enhancing learning through human computer interaction*. London: Idea group reference.

Scanlon, E. & O'shea, T. (1987). *Educational computing*. NY: John Wiley and Sons.

Sharp, V. (4th ed). *Computer education for teachers*. New York: McGraw Hill.

Trend, R.; Davis, N.; & Loveless, A. (1999). *Information and communication technology*. London: Letts.

ICT. Ed 518: Advanced Operating System

Course no. : ICT. Ed 518
Practical
Level: M.Ed.
Semester: First

Nature of the course: Theoretical +
Credit hours: 3 (2+1)
Teaching hours: 64(32Th.+32Pr.)

1. Course Description

This course is designed to acquaint the students with the knowledge of the fundamentals of computer operating systems, their role, and their design and implementation aspects.

2. General Objectives

The general objectives of this course are as follows.

- To provide the basics of operating systems,
- To study and apply concepts relating to an Operating System such as Process, Thread management, Memory Management, File Systems, I/O management, distributed systems, and
- To familiarize the students with the foundations and design principles of modern operating system.

3. Course Outlines

Specific Objectives	Contents	Teaching Hours
<ul style="list-style-type: none">• Review the historical development of Operating Systems and• Discuss the role and functionality of Operating System• Discuss different types Operating Systems and their structure	1. Principles of Operation System 1.1. Introduction and history of OS 1.2. Operating system: Concepts and functionalities 1.3. Operating system: Structure, system calls, system programs and system structure 1.4. Types and functions of operating systems	2hr TH+ 2hr PR
<ul style="list-style-type: none">• Clarify the concept of process and thread , their differences and their structure and working mechanism• Discuss the serialization and access control	2. Processes and Threads 2.1 Process and thread concepts 2.2 Concurrent processes: Introduction, parallel processing, pseudo parallelism 2.3 Communication in client server systems 2.4 Critical regions and conditions, mutual exclusion, mutual exclusion primitives and	8hr TH +6 Hr PR

<ul style="list-style-type: none"> mechanism of shared resources Discuss the problems and solutions to problems related to deadlocks 	<p>implementation, locks, producer and consumer problem, monitors, use of semaphors to implement mutex, process synchronization and classical IPC problems,</p> <p>2.5 Deadlock and Indefinite Postponement: Introduction, Preemptable and Nonpreemptable Resources, Conditions for deadlock, deadlock modelling, prevention, avoidance, detection and recovery, Starvation,</p> <p>2.6 Threads: Introduction, threading issues, user and kernel threads, thread model, thread usage, advantages of threads, multithreading model.</p>	
<ul style="list-style-type: none"> Analyse the role of a kernel as being an important part of an operating system Elucidate the role, responsibilities and structure of a kernel and its types 	<p>3. Kernel</p> <p>3.1 Introduction and architecture</p> <p>3.2 Context switching (kernel mode and user mode)</p> <p>3.3 Types of kernel (monolithic/macro kernel and micro/exo-kernel)</p> <p>3.4 Re-entrant kernels, interrupts, timer interrupts</p> <p>3.5 Kernel implementation of processes</p>	2 Hr TH +2 Hr PR
<ul style="list-style-type: none"> Discuss the approaches used for the scheduling of jobs and processes Review different types of scheduling algorithms used for scheduling jobs and processes 	<p>4. Scheduling</p> <p>4.1 Introduction: Job and processor scheduling, scheduling levels, scheduling objectives and criteria, quantum size,</p> <p>4.2 Process hierarchies, pre-emptive versus non pre-emptive scheduling</p> <p>4.3 Scheduling techniques: Priority scheduling, deadline scheduling, first-n-oirst-out scheduling, Round Robin scheduling, shortest-job-first(SJF)scheduling, shortest-remaining-time(SRT) scheduling</p>	3Hr TH + 4 Hr PR
<ul style="list-style-type: none"> Discuss and analyse the way and the operating system manages memory efficiently for its operation Discuss the concept of virtual memory management concept for the effective allocation 	<p>5. Memory Management</p> <p>5.1 Memory organization and management, storage allocation, contiguous and non-contiguous memory allocation</p> <p>5.2 Swapping, segmentation, fragmentation</p> <p>5.3 Fixed partition multiprogramming, variable partition multiprogramming, relocation and protection</p> <p>5.4 Virtual memory</p> <p>5.4.1 Address mapping, background demand paging</p>	4 HR TH +2 Hr PR

of memory for different tasks and applications	<p>5.4.2 Paging and page replacement algorithms: FIFO, LRU OPR etc</p> <p>5.4.3 Virtual storage management, allocation of frames</p> <p>5.4.4 Thrashing</p>	
<ul style="list-style-type: none"> Discuss the ways that an Operating System handles I/O hardware, the role of device drivers for interfacing purpose 	<p>6. Input/output</p> <p>6.1. Introduction</p> <p>6.2. I/O devices, device drivers, memory-mapped I/O, DMA (Direct memory access), principles of I/O software: Polled I/O versus interrupt driven I/O,</p> <p>6.3. Block and character devices,</p> <p>6.4. Disk scheduling: Seek time, transfer time, disk scheduling algorithms</p>	4 Hr TH + 4 Hr PR
<ul style="list-style-type: none"> Discuss the concept of file systems and directory structures used by an operating system for efficient data storage and retrieval purpose 	<p>7. File Systems</p> <p>7.1 File organization: Blocking and buffering, file descriptors, file naming, file structure, file types, file access, file attributes, file operations</p> <p>7.2 Access methods: Sequential, direct, ACL (access control list)</p> <p>7.3 Directories, directory structure, blocks and fragments, directory tree</p> <p>7.4 File descriptors, file system implementation, contiguous allocation, linked list allocation, I-nodes, security and multi-media files.</p>	3 Hr TH + 4Hr PR
<ul style="list-style-type: none"> Analyse the (????) 	<p>8. Distributed Operating System</p> <p>8.1 Introduction, advantages and disadvantages of distributed operating system, goals, network architecture, hardware and software concepts,</p> <p>8.2 Communication in distributed systems, ATM (asynchronous transfer mode),</p> <p>8.3 Layered protocols, client-server model, RPC (remote procedure call), group communication, processes and processors in distributed system,</p> <p>8.4 Clock synchronization, scheduling in distributed system.</p>	6 Hr TH + 2 Hr PR
	<p>9. Case Studies</p> <p>Case study of IPC, process scheduling and synchronization, file system, I/O, memory management etc in various platforms like Unix, Linux, DOS, Window NT</p>	8 Hr PR

The practical aspect will focus on the implementation of the concepts covered in the lecture class using a programming language (e.g. C or Java) and a particular platform/OS (e.g. Linux)

4.1.2 List of Laboratory Work

- Introduction to process, threads, system calls, shell, kernel, user interface of an operating system
- Implementation of process scheduling algorithms
- Implementation of IPC using buffers
- Implementation of mutex, semaphors, monitors
- Implementation of memory and resource management schemes and algorithms
- Implementation of deadlock prevention algorithms

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Techniques

- Providing the reading materials to the students to familiarize the units.
- Lecture, question-answer, discussion, brainstorming, practical, and buzz session.

4.2 Specific Instructional Techniques

Unit	Activity and instructional techniques	Teaching Hours (30)
I to XII	Lecture, discussion, practical	

Note: The *specific instructional techniques may or may not be required for each of the units mentioned in the course outlines.*

18. Evaluation (Internal Assessment and External Assessment)

Nature of course	Internal Assessment	External Practical Exam/Viva	Semester Examination	Total Marks
Theory	40%	20%	40%	100%

Note: The students must pass separately in the internal assessment, the external practical exam / viva and/or the semester examination.

5. Evaluation for Part I (Theory)

b. Internal Evaluation 40%

The internal evaluation will be conducted by the course teacher based on the following activities.

21) Attendance	5 points
22) Participation in learning activities	5 points
23) First assessment (written assignment)	10 points
24) Second assessment (term examination)	10 points
25) Third assessment (internal practical exam/case study)	10 points
Total	40 points

Note: *The first assignment/assessment might be book review /article review, quiz, home assignment etc. according to the nature of the course. The second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on the secondary data or review of literature and documents etc and the third assignment will be the term exam.*

b. External Evaluation (Final Examination) (40%)

The Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester.

- 8) Objective type question (multiple choice, 10 questionsx1mark) 10 marks
9) Short answer questions (6 questions x 5 marks) 30 marks

Total	40 marks
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18.1 Evaluation for part II (practical) (20%)

Nature of the course	Semester/ final examination by external examiner	Total percent
Practical	100%	100 %

5.2.2. Practical Examination Evaluation Scheme

- b) External assessment100%
iv) Record book 20%
v) Laboratory work exam/case.....40%
vi) Viva voce.....40%

6. Recommended books and reading materials (including relevant articles published in national and international journals)

Tanenbaum, A. S. (2006). *Operating systems: design and implementation* (3rd ed.). Upper Saddle River, N.J: Pearson/Prentice Hall.

7. Reference materials

- Bhatt, P. C. P. (2010). *Introduction to operating systems: concepts and practice.* [S.l.]: Phi Learning.
- Silberschatz, A. (2010). *Operating system concepts with Java* (8th ed.). Hoboken, NJ: John Wiley & Sons.
- Stallings, W. (2009). *Operating systems: internals and design principles.* Upper Saddle River, N.J.: Pearson/Prentice Hall.
- Tanenbaum, A. S. (2008). *Modern operating systems* (3rd ed.). Upper Saddle River, N.J: Pearson/Prentice Hall.

Math Education

- i. Math. Ed 515: Foundation of Mathematics Education
- ii. Math Ed. 516: Abstract Algebra
- iii. Math. Ed. 517: Mathematical Statistics
- iv. Math. Ed. 518: History of Mathematics

Math Ed. 515: Foundation of Mathematics Education

Semester: First

Nature of the course: Theoretical

Course no.: 515

Credit hours: 3

Level M.Ed.

Teaching hours: 48

1. Course Introduction

This course is designed to provide a broader and deeper understanding of the state of the art of mathematics education which draws upon four main foundations: mathematical foundation, psychological foundation, cultural foundation and technological foundation. This course has been updated and modified to meet the changing needs of mathematics education.

2. General Objectives

The general objectives of this course are as follows.

- To provide the students with broader and deeper understanding of the nature of mathematics and mathematical education in the changing philosophical contexts,
- To develop a deeper understanding of the theories of learning mathematics with their implications,
- To acquaint the students with the main features of instructional models/strategies in the context of specific topics,
- To make the students familiar with different resources and their use in teaching mathematics,
- To develop an understanding of cultural and social issues in mathematics education and their implication on curriculum and classroom teaching,
- To acquaint the students with the components and principles of professional development of mathematics teachers,
- To develop the ability and skills of report writing and presentation on different aspects of mathematics education, and
- To acquaint the knowledge and skills possess for the professional development of mathematics teachers

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Explain the meaning of mathematics from different points of view• Explain the nature of mathematical knowledge on the basis of its assertion• Discuss how mathematics can be considered as consisting of different branches/areas/structures	<p>Unit-I Nature of Mathematics (8)</p> <p>1.1 Meaning and definitions of mathematics</p> <p>1.2 Nature of mathematical knowledge (a priori and a posteriori)</p>

<ul style="list-style-type: none"> • Explain the structure of various branches of mathematics with its unifying concepts • Identify issues/questions in relation to philosophy of mathematics • Explain the major views on philosophy of mathematics (absolutist and fallibilist views) • Explain the causes of emergence of logicism, formalism and constructivism in the absolutist philosophy of mathematics • List and explain the major features characterizing each of the three schools of absolutists' views • Explain why the three schools under absolutists' views could not establish mathematical knowledge as absolute knowledge • Examine the importance of the fallibilist views in spite of the absolutist views • List the basic assumptions underpinning mathematical knowledge as social construction and discuss how social constructivism connects subjective and objective knowledge in cycle 	<p>1.3 Structure of mathematical knowledge</p> <p>1.3.1 Structure of mathematical knowledge</p> <p>1.3.2 Structure of various branches of mathematics</p> <p>1.4 Philosophy of mathematics</p> <p>1.4.1 <i>Introduction</i></p> <p>1.4.2 <i>Major views (Absolutist and Fallibilist)</i></p> <p>1.4.3 <i>Development and main features of absolutism of the three schools of thought (logicism, formalism and constructivism)</i></p> <p>1.4.4 <i>Reasons for the failure of the absolutist view</i></p> <p>1.4.5 <i>Importance of the fallibilist view</i></p> <p>1.4.6 <i>The social constructivist philosophy of mathematics</i></p>
<ul style="list-style-type: none"> • Examine the difference between mathematics education and mathematics • Explain the bases of mathematics education in terms of its major foundations: mathematical, psychological, cultural and technological • Differentiate between different ideologies of mathematics education based on Perry theory 	<p>Unit-II Nature of Mathematics Education (8)</p> <p>2.1 A comparative view of mathematics and mathematics education</p> <p>2.2 Foundation of mathematics education</p> <p> 2.2.1 Mathematical foundation</p> <p> 2.2.2 Psychological foundation</p> <p> 2.2.3 Cultural foundation</p> <p> 2.2.4 Technological foundation</p> <p>2.3 Ideologies in mathematics education</p> <p> 2.3.1 Dualistic absolutism</p> <p> 2.3.2 Multiplistic absolutism</p> <p> 2.3. (Separated/ connected),</p> <p> 2.4.4 Relativistic fallibilism</p>

<ul style="list-style-type: none"> • Explain the theoretical paradigm shift in the theories of learning mathematics • Discuss with illustrations the features of Ausubel's theory in terms of preconditions for reception learning, strategies for reception learning and advance organizer • Define and illustrate three types of mathematical concepts as mentioned by Dienes • Explain with examples how mathematical concepts are learned through Diene's six progressive stages • Analyze the relationship between Diene's six stages and his four general principles for teaching concepts • Develop a teaching/ learning strategy as an application of the stages to classroom teaching • Compare Gagne's product-oriented approach and Bruner's process-oriented approach to the teaching and learning of mathematics • Examine the thought processes involved in Skemp's learning of mathematics • Explain the meaning of constructivism from different perspectives • Identify the premises of constructivism and discuss their importance • Examine the role of the constructivist views on the teaching and learning of mathematics • Examine socio-cultural theories as the extension of the constructivist approach • Summarise briefly the position of different learning theories on typical problems of learning • Examine with illustrations the implications of learning theories for the teaching and learning of mathematics. 	<p>Unit -III Theories of Learning Mathematics (10)</p> <p>3.1 Shift in the theoretical paradigm of learning mathematics</p> <p>3.2 Ausubel's theory of learning</p> <p> 3.2.1 Preconditions for reception learning</p> <p> 3.2.2 Strategies for reception learning</p> <p> 3.2.3 Advance organizer</p> <p>3.3 Diene's theory</p> <p> 3.3.1 Mathematical concepts</p> <p> 3.3.2 Stages in learning mathematics</p> <p> 3.3.3 Relationship between stages and principles</p> <p> 3.3.4 Application of Diene's stages in teaching/learning mathematics</p> <p>3.4 Comparison between Gagne and Bruner approaches to the teaching and learning of mathematics</p> <p>3.5 Skemp's psychological processes in learning mathematics</p> <p>3.6 Constructivism in the learning of mathematics</p> <p> 3.6.1 Meaning and premises of constructivism</p> <p> 3.6.2 Constructivist views on the teaching /learning of mathematics</p> <p>3.7 Socio-cultural theories as the extension of the constructivist approach</p> <p>3.8 Implication of learning theories for teaching and learning mathematics</p>
<ul style="list-style-type: none"> • Explain the prescriptive and normative nature of instructional strategies 	<p>Unit-IV Instructional Strategies</p>

<ul style="list-style-type: none"> • Explain seven to nine expository activities and use them in developing teaching/learning activities for teaching skill, concept or a principle • Define problem solving and examine different situations for a problem • List and describe five steps of problem solving teaching/learning strategies and use them in developing for teaching problem solving • Define discovery learning and discuss its purposes • Explain the role of inductive and deductive approaches to developing teaching/learning strategies for discovery learning • Develop discovery lessons to teach specific topics in mathematics • Examine teacher's and student's roles in the constructivist classroom and use them for developing teaching activities • Examine and analyze teacher's roles in handling mathematics classes for socially, culturally and linguistically diverse students and use them in developing teaching/learning activities 	<p>(8)</p> <p>4.1 Introduction 4.2 Expository model 4.3 Problem solving model (five steps) 4.3.1 Definition of problem 4.3.2 Five steps of the problem solving model and its use in teaching.</p> <p>4.4 Discovery strategy 4.4.1 Definition and purpose 4.4.2 Inductive and deductive approaches in discovery learning 4.4.3 Development of a discovery lesson in mathematics</p> <p>4.5 Teaching approaches in constructivism 4.6 Teaching approaches in socially/culturally diverse situations</p>
<ul style="list-style-type: none"> • Identify different types of materials required for equipping the mathematics classroom and explain how to manage them • Discuss the use of software packages in math teaching • Differentiate between manipulative and virtual manipulative materials and discuss their use in mathematics teaching • Discuss the various ways of using computers in teaching and learning mathematics • Discuss the importance of multimedia packages in teaching and learning math • Explain the educational objectives of games and paradoxes. • Develop or select different games for 	<p>Unit-V Instructional Media and Technology for Mathematics Teaching (5)</p> <p>5.1 Use of ICT in mathematics teaching</p> <p> 5.1.1 Materials for equipping the math classroom</p> <p> 5.1.2 Multimedia package</p> <p> 5.1.3 Software package</p> <p> 5.1.4 Manipulative and virtual</p>

<p>teaching different objects of mathematics and explain their uses in teaching</p>	<p>manipulative materials 5.2 Games and puzzles</p>
<ul style="list-style-type: none"> • Examine the historical development of math with respect to social development • Discuss the cultural foundation of math education • Examine the role of math in preserving and developing different cultures • Identify and explain the factors involved in social diversity in math classes • Explain the cognitive model of difference and its implication to teaching • Explain how social and cultural models seek to understand students' learning problems due to diverse backgrounds • Analyze the role of social diversity in framing the curriculum and teaching practices 	<p>Unit - VI: Society and Social Diversity in Math Education (5)</p> <p>6.1 Cultural foundation of mathematics education</p> <p>6.2 A socio-cultural approach to studying the teaching and learning of mathematics</p> <p>6.2.1 Dimension of multicultural mathematics education</p> <p>6.3 Diversity in mathematics</p> <p> 6.3.1 Social diversity in mathematics classes</p> <p> 6.3.2 Cultural diversity in mathematics education</p> <p> 6.3.3 Cognitive model of difference</p> <p> 6.3.4 Social model of difference</p> <p> 6.3.5 Implication of social diversity for curriculum framing and teaching practice</p>
<ul style="list-style-type: none"> • Explain the meaning and importance of teacher education • Explain the models of the development of teaching staffs and explain them. • State different components of a staff development program and explain them • List the principles of professional development of mathematics teacher and discuss their significance as principles • Identify the different areas needed for teacher education and examine their interrelationships • Explain the need for the job induction training for novice teachers 	<p>Unit-VII Mathematics Teacher Education (4)</p> <p>7.1 Introduction</p> <p>7.2 Models of development of teaching staffs</p> <p>7.3 Components of staff development</p> <p>7.4 Contents for a math education program</p> <p>7.5 Knowledge and skills possess for the professional development of</p>

	mathematics teachers 7.6 Need for job induction training for novice teachers
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Note: The figures in the parentheses indicate the approximate periods for the respective units.

4. Instructional Techniques

The instructor will select the method or methods of instruction most suitable for a particular topic. It is quite acceptable to select more than one methods and combine them into a single period of instruction whenever it is needed. The general and specific instructional techniques are described below.

4.1 General Instructional Techniques

- Group work
- Demonstration
- Multimedia presentation
- Project work
- Discussion
- Lecture

4.2 Specific Instructional Techniques (Theoretical Part)

Unit	Activities and Instructional Techniques
I	<ul style="list-style-type: none"> • Debate/discussion on the ideologies of mathematics education • Project work • Multimedia presentation • Debate • Discussion • Less lecture
II	<ul style="list-style-type: none"> • Expository technique • Problem solving • Discussion and project work • Group and individual multimedia presentation
III	<ul style="list-style-type: none"> • Expository model • Problem solving model • Discovery model • Constructivist, socio-cultural and socially critical theories based techniques and methods of teaching the respective model
IV	<ul style="list-style-type: none"> • Less expository presentations and more focus on study tasks and then discussion and question answer sessions • Problem solving

	<ul style="list-style-type: none"> • Discovery • Project work • Power point presentation
V	<ul style="list-style-type: none"> • Debate on equality and equity in mathematics classes • Multimedia presentation • Project work • Group discussion
VI	<ul style="list-style-type: none"> • Dialogical • Dialectical • Debate • Multimedia presentation • Discussion class on different models of staff development
VII	<ul style="list-style-type: none"> • Multimedia presentation • Project work • Discussion • Group presentation

5 Evaluation

5.1 Internal Evaluation (40%)

The internal evaluation will be conducted by the course teacher based on the following activities.

- | | |
|---|--|
| <ul style="list-style-type: none"> • Attendance • Participation in learning activities • First assignment (assignment) • Second assessment(written test) • <u>Third assessment(written test) a</u> | 5 marks
5 marks
10 marks
10 marks
10 marks |
| Total | 40 marks |

5.2 External Examination (60%)

The Examination Division of the Dean office, Faculty of Education will conduct the final examination at the end of the semester. The number of questions and their types with marks allocated to each type of question will be as follows.

- | | |
|--|----------------------------------|
| <ul style="list-style-type: none"> • Objective questions (multiple choice questions) (10×1) • Short answer questions (6 with 2 OR- questions) (6×5) • <u>Long answer questions (2 with 1 OR- question)</u> (2×10) | 10 marks
30 marks
20 marks |
| Total | 60 marks |

6 Recommended Books and References

6.1 Recommended Books

Aichel, D. B. & Reys, R. E. (1997). *Readings in secondary school mathematics*. Prindle, Weber and Schmidt Inc

Ambrosio, U. (1985). *Socio-cultural bases for mathematics education*. Campinas Brazil: UNICAMP

Bell, H. F. (1978). *Teaching and learning mathematics*. WMC. Brown Company Publisher

D'Ambrosio, U. (2006). *Ethnomathematics: Link between traditions and modernity*, Rotterdam.Taipei:Sense Publisher

- David, K. *Games in teaching mathematics*. Cambridge University Press.
- NCTM (1994). *Professional development of teachers of mathematics*. Yearbook, Reston VA: National Council of Teacher of Mathematics.
- Pandit, R. P. (2007). *Foundation of mathematics education*. Kathmandu: Mrs Indira Pandit.

6.2 References

- Acharya , B. R. (2017). *Foundation of mathematics education*. Kathmandu: Dikshant Prakashan.
(Units 1-VII)
- Ernest, P. (1993). *The philosophy of mathematics education*. Basing Stoke, Britain: Taylor and Francis Inc.
(Units- I,VI).
- Gates, P. (2003). *Issues in mathematics teaching*. London: Routledge Flader. (Unit III).
- Shresha, M. B. (2014). *Philosophy of mathematics*. Kathmandu: Nepal Pragya Pratisthan. (Unit-I).
- Skemp, R. (1982). *The psychology of learning mathematics*. Hormonds Worth, Enland: Penguin Books.(Unit-III)
- Upadhyay, H.P. (2070). *Exploratory teaching mathematics*, Kathmandu : Sakunda Pustak Bhawan. (Unit –III).
- Vygotsky, L. S. (1986). *Thought and language* (13th edition). England: The MIIT Press.(Unit-III).
- Zeven berger, R. Dole, S. and Robert, J.W. (2005). *Teaching mathematics in primary school*. Australia : Allen and Unwin.(Unit-VI).

Math Ed. 516: Abstract Algebra
Course no. : Math Ed. 516
Level: M. Ed
Semester: First

Nature of the course: Theoretical
Credit hours: 3
Teaching hours: 48

1. Course Introduction

This course deals with axiomatic algebraic structures such as group theory, ring theory and field theory including Galois Theory of fields and solvability of polynomials. The concept of nilpotent and solvable groups are also included in group theory. Ring theory includes more fundamental concepts together with the ring of formal power series and the factorization of polynomial ring over unique factorization domains whereas field theory discusses fundamental theorem of Galois Theory, fundamental theorem of algebra, Galois groups of polynomials and solvability of polynomial equations.

2. General objectives

The general objectives of this course are as follows.

- To explore the knowledge on groups, normal and subnormal series of groups and nilpotent group.
- To enhance the basic concepts of ring, the ring of formal power series and the factorization in polynomial rings.
- To familiarize the students with the fundamental concepts of field extension, Galois group and Galois extension of field.
- To acquaint them with the Galois group of polynomials and the solvability of polynomial equations.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Review the concepts of permutation groups, symmetric groups and the properties of internal and external direct product (sums) of groups• State Sylow's theorems with illustrations• Define subnormal, normal, ascending central and derived series of the groups with suitable examples• State and prove Zassenhau's lemma, Jordan Holder theorem and Scheier's theorem• Prove the properties of solvable and nilpotent groups	<p>Unit I: Nilpotent and Solvable Groups (10)</p> <p>1.1 Review of permutation groups, symmetric group, internal and external Direct products, Sylow's theorems and its application (no need to prove theorems).</p> <p>1.2 Normal and subnormal series of groups</p> <p>1.3 Ascending central series and derived series of groups</p> <p>1.4 Nilpotent and solvable groups</p>

<ul style="list-style-type: none"> • Review the fundamental concepts of rings including ideals, quotient ring of different integral domains, quotient field of integral domain and ring of polynomials • Define the ring of formal power series and prove the basic properties of that ring. • State and prove the division algorithm of polynomials over UFD. • Define primitive, monic and cyclotomic polynomials with examples and prove the Gauss lemma for the polynomial over UFD • State and prove Eisenstein's criterion of testing irreducibility of polynomial over UFD and apply this criterion to test the irreducibility of polynomials 	<p>Unit II: Ring Theory (10)</p> <p>2.1 Review of the fundamental concepts of ideals, quotient ring, ring homomorphisms, integral domain, principal ideal domain, Euclidean domain, unique factorization domain (UFD), the field of fraction, and the ring of polynomials</p> <p>2.2 Ring of formal power series</p> <p>2.3 Factorization in polynomial ring</p> <p>2.4 Eisenstein's criterion of testing irreducibility of polynomial</p>
<ul style="list-style-type: none"> • Define field extensions with examples and prove the various properties of field extensions • Define splitting field with examples and find the splitting field of polynomials • State and prove the existence and uniqueness theorems of the splitting field of polynomials • Explain the algebraic closure and normality of field extension • Define minimal polynomial and explain the simple and multiple roots of polynomials over the field • Analyze the structure of field and field extensions • Discuss Galois group and Galois extensions of field • State and prove the fundamental theorem of Galois Theory • State and prove the fundamental theorem of algebra 	<p>Unit III: Field Extensions and Fundamental Theorems (14)</p> <p>3.1 Review of field extensions (algebraic, transcendental, normal, separable and inseparable extensions), splitting fields, algebraic closure of fields and normality</p> <p>3.2 Roots of polynomials, adjunction of roots and minimal polynomial</p> <p>3.3 Galois group of fields and Galois extensions of fields</p> <p>3.4 Fundamental theorem of Galois theory</p> <p>3.5 Fundamental theorem of algebra</p>
<ul style="list-style-type: none"> • Define and determine the Galois group of polynomials over the field • Determine the fixed field of Galois Group of polynomial 	<p>Unit IV: Galois Group of Polynomial and Solvability of Polynomial Equations (14)</p>

<ul style="list-style-type: none"> • Find the discriminant of quadratic, cubic and quartic polynomial equations • Define and find the resolvent cubic of the quartic polynomial equation • Define cyclic and cyclotomic extensions of field and prove the properties of those extensions • Define the radical extension of field and prove the properties of radical extensions • State and prove the Galois criterion of solvability of the polynomial equation by the radical method 	4.1 Galois group of polynomials 4.2 Cyclic extension 4.3 Cyclotomic extension 4.4 Radical extensions 4.5 Solvability of the general polynomial equation of degree n
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Note: The figures in the parentheses indicate the approximate teaching hours allocated to the respective units.

4. Instructional Techniques

This course is theoretical in nature and thus the teacher-centered instructional techniques will be dominant in the teaching learning process. However, the instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the contents. The second group consists of the specific instructional techniques applicable to the specific contents of each unit. The general and specific techniques are described below.

4.1 General Techniques

The following instructional techniques will be adopted according to the need and nature of the lesson.

- Lecture with illustrations
- Discussion
- Question-answer
- Group work and individual work

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
I	<ul style="list-style-type: none"> • Individual work and group work presentation to explain and find the relation between Sylow's theorems, Sylows p-subgroups and p-subgroups • Group work discussion and then presentation on classifying finite groups of small order • Individual work and group work to explore some solvable and nilpotent groups • Individual assignment to find the series stated in this unit and presentation • Group tasks to solve the problems of exercise and discussion of the related theorem to solve these problems

II	<ul style="list-style-type: none"> • Inquiry and question answer • Individual work and group work presentation • Paper presentation • Problem solving exercise
III	<ul style="list-style-type: none"> • Individual work and group work presentation • Discussion for the solution of the related problems • Connecting examples with theorems and finding related examples • Group presentation to focus on the fundamental theorems and their importance
IV	<ul style="list-style-type: none"> • Individual work and group work presentation • Individual work to demonstrate the radical extension and solvability of polynomial equations • Discussion for the solution of related problems • Discussion to connect examples with theorems

5. Evaluation

5.1 Internal Evaluation (40%)

The internal evaluation will be conducted by the course teacher based on the following activities.

<ul style="list-style-type: none"> • Attendance • Participation in learning activities • First assessment (assignment) • Second assessment (written test) • <u>Third assessment (written test)</u> 	5 marks 5 marks 10 marks 10 marks 10 marks
Total	40 marks

5.2 External Examination (60%)

The Examination Division of the Dean's Office, Faculty of Education will conduct the final examination at the end of the semester.

<ul style="list-style-type: none"> • Objective questions (multiple choice) (10×1) • Short answer questions 6, with 2 OR-questions (6×5) • <u>Long answer questions 2 ,with 1 OR- question (2×10)</u> 	10 marks 30 marks 20 marks
Total	60 marks

6. Recommended Books and References

6.1. Recommended Books

Bhattacharya, P. B, Jain, S.K and Nagpaul, S.R (2007). *Basic abstract algebra*. India : Cambridge University Press.(Units I-IV)

Dummit, D. S and Foote, R. M (2008). *Abstract algebra*. India: Wiley East House.(Units I-IV)
Hungerford, T.W (1974). *Algebra*. New York: New York Inc. Springer Verlag. Units I-IV)

6.2. References

Bhattarai, B. N (2011). *Introduction of group theory*. Kathmandu: Subhakamana Prakashan.

Bhattarai, B. N. (2011). *Introduction of rings and modules*. Kathmandu: Subhakamana Prakashan.

Cohn, P. M (1977). *Algebra Vol I and II*. New York: John Wiley.

Fraleigh, J. B (1984). *A first course in abstract algebra*. New Delhi: Narosa Publishing House.

Gopal, K.N.S (1986). *University algebra*. India: Wiley Eastern Limited.

Herstein, I.N (2006). *Topic in tgebra*. India: John Wiley and Sons.

Maharjan ,H. B (2007). *Group theory*. Kathmandu: Bhunipuran Prakasan.

Maharjan, H. B (2008). *Rings and modules*. Kathmandu: Bhunipuran Prakasan.

Math Ed. 517: Mathematical Statistics

Nature of the course: Theoretical

Course number: Math Ed. 517**Credit hours:3****Level: M. Ed.****Teaching hours:48****Semester: First****1. Course Introduction**

This course is about how statistics most accurately communicates/describes the nature of attitude, achievements and events and also explains how it condenses opinions, performances and comparisons through summary numbers that can be understood at a glance through charts and graphs. Through tests of significance using the theory of probability, it also explains how statistics draws inferences, makes decisions and forms opinions about the events in day-to-day life. It covers the major contents like sampling techniques, hypothesis testing and correlation and regression .

2.General Objectives

The general objectives of this course are as follows.

- To enable the students to explain multinomial, power series, and logistic distribution and find the mixture of distributions,
- To familiarize the students with multivariate, discrete and continuous probability distributions, their mean variances and moment generating functions,
- To deal with the moments of linear combination of random variables and the Central-Limit theorem,
- To familiarize the students with various methods of sampling,
- To familiarize with the meaning and types of sampling distributions with and without replacement from normal population, and apply them,
- To acquaint the students with the importance of point estimation and interval estimation,
- To deal with different types of parametric and non-parametric tests of hypothesis and carry out tests of hypotheses;
- To acquaint the students with the importance of ANOVA and its application, and
- To enable them to explain the concepts of partial and multiple correlation and regression.

3. Specific Objectives and Contents

Objectives	Contents
<ul style="list-style-type: none">• Identify the basic concepts and principles of probability• Define multinomial, logistic and power series distributions• Calculate the mean and variance of the above distributions	Unit I: Probability Distributions (3) 1.1 Review of probability distribution 1.1.1 Multinomial distribution

	<p>1.1.2 Power series distribution</p> <p>1.1.3 Logistic distribution</p>
<ul style="list-style-type: none"> • Describe multivariate probability • Define and calculate the mean and variance of joint probability distributions, conditional distributions and independent random variables • Calculate the mean and variance of above distributions using the moment generating function and product moments 	<p>Unit II: Joint Probability Distributions (6)</p> <p>2.1. Multivariate probability</p> <p>2.1.1 Joint probability distribution</p> <p>2.1.2 Marginal probability distributions</p> <p>2.1.3 Conditional probability distributions</p> <p>2.1.4 Independent random variables</p> <p>2.2. Mean and variance of joint probability function</p> <p>2.2.1 Covariance</p> <p>2.2.2. Mean and variance of the linear combinations of random variables,</p> <p>2.3. Conditional expectation and variance</p> <p>2.3.1 Moments and Mgf and its properties</p> <p>2.3.2 Product moment</p>
<ul style="list-style-type: none"> • Define, explain and apply binomial, hypergeometric and Poisson distributions • Prove the binomial distribution approaches of the Poisson distribution • Derive the recursion formula of binomial, hypergeometric and Poisson distribution • Define, explain and apply uniform density, gamma, beta and exponential and normal distribution • Find the moment generating function of each of the above distributions • Find the mean and variance of each distribution using the moment-generating function 	<p>Unit III: Discrete and Continuous Probability Distributions (8)</p> <p>3.1 Discrete probability distribution</p> <p>3.1.1 Uniform distribution</p> <p>3.1.2 Binomial mean and variance, recursion</p> <p>3.1.3 Hyper-geometric distribution: mean, variance, recursion</p> <p>3.1.4 Poisson distribution: mean, variance, recursion</p> <p>3.2 Continuous distribution through Mgf</p> <p>3.2.1 Uniform density</p> <p>3.2.2 Gamma, beta, exponential and chi-square distributions: Mean and variance</p> <p>3.2.3 Normal distribution: mean and variance</p> <p>3.2.4 Normal approximation of binomial and its derivation</p>
<ul style="list-style-type: none"> • Describe the steps in a sample survey, and design of questionnaires • Explain the methods of probability and non-probability sampling and determine sample size 	<p>Unit IV: Sampling and Sampling Distributions(7)</p> <p>4.1 Principles of the sampling theory</p> <p>4.2 Census, sample survey and questionnaires</p> <p>4.3 Errors in data collection</p>

<ul style="list-style-type: none"> • Derive the sampling distribution of mean • Derive the central limit theorem and its variance • Derive the chi-square, t-distribution, and F-distribution and their properties 	<p>4.4 Basic methods of sampling</p> <p>4.4.1 Probability sample</p> <p>4.4.2 Non-probability sample</p> <p>4.5 Estimation of sample size</p> <p>4.6 Meaning of sampling distribution</p> <p>4.7 Sampling distribution of mean</p> <p>4.8 Central limit theorem and its derivation</p> <p>4.9 Sampling distribution of the difference of means</p> <p>4.10 Sampling distribution of proportion, difference of proportion, variance, ratio of variance</p> <p>4.11 Student t- distribution and derivation</p> <p>4.12 F – distributions and derivation</p> <p>4.13 Chi-square distribution and derivation.</p>
<ul style="list-style-type: none"> • Differentiate between point estimation and interval estimation • State the properties of point estimation • Formulate and test a statistical hypothesis • Perform the appropriate test and make decision • Explain and use the one-way and two- way analyses of variance to test relevant hypotheses • Perform ANCOVA and make decision • Use the SPSS Software for testing hypothesis 	<p>Unit V: Estimation of Parameters and Hypothesis Testing (14)</p> <p>5.1 Definition of estimation</p> <p>5.1.1 Types and properties of estimators</p> <p>5.1.2 Confidence interval</p> <p>5.2 Estimation and hypothesis testing</p> <p>5.2.1 Means, difference between means (and ?)</p> <p>5.2.2 Proportion, difference between proportion (and?)</p> <p>5.2.3 Variance, ratio of two variances</p> <p>5.2.4 Correlation coefficient and regression coefficients</p> <p>5.2.5 Chi-square test for the goodness of fit, test for independence</p> <p>5.2.6 One-way and two way analyses of variance</p> <p>5.3 Analysis of covariance</p> <p>5.4 SPSS application for hypothesis testing.</p>
<ul style="list-style-type: none"> • Differentiate between parametric and non-parametric test • Explain and use various types of non-parametric tests to test the relevant hypothesis 	<p>Unit VI: Non- Parametric Tests (5)</p> <p>6.1 Introduction to non-parametric test</p> <p>6.1.1 Difference between parametric and non-parametric tests</p> <p>6.1.2 Types of non-parametric test: Sign test, U-Test, H-test, Friedman test, and Run test.</p>

<ul style="list-style-type: none"> • Explain the meaning of multiple linear regression and derive the equation to regression plane • Determine multiple correlation and partial correlation • Find the test of the significance of regression coefficients and apply it to multiple regressions 	<p>Unit VII: Partial and Multiple Correlation and Regression (5)</p> <p>7.1 Regression</p> <ul style="list-style-type: none"> 7.1.1 Multiple linear regression 7.1.2 Equation to regression plane <p>7.2 Correlation</p> <ul style="list-style-type: none"> 7.2.1 Multiple correlation and partial correlation 7.2.2 Test of the significance of regression coefficients, model appraisal, and applications to multiple regressions 7.2.3 Interpretation of multiple Regression and correlation.
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1. Note: The figures in the parentheses indicate the approximate teaching hours allocated to the respective units.

2. 4. Instructional Techniques

The instructor will select the method/ methods of instruction most suitable for a particular topic. It is quite acceptable to select more than one method and combine them into a single period of instruction whenever needed. The general and specific instructional techniques are described below.

3.

4. 4.1 General Techniques

5. The following general instructional techniques will be adopted according to the need and nature of the lesson:

- Lecture with illustrations
- Discussion
- Question-answer
- Collaborative learning

6. 4.2 Specific Instructional Techniques

Units	Activities and Instructional Techniques
I	<ul style="list-style-type: none"> • Discussion about the situation where multinomial, power series and logistic distribution are applicable. • Exercise on the use probability techniques to solve related problems
II	<ul style="list-style-type: none"> • Discussion and students' participation • Exercise by using probability techniques to find multivariate distributions.

III	<ul style="list-style-type: none"> • Group discussion • Individual presentation to engage themselves in internet browsing for searching mean, variance and moment generating functions of different types of probability distributions
IV	<ul style="list-style-type: none"> • Student engagement in internet browsing for different types of sampling and techniques of sampling distributions
V	<ul style="list-style-type: none"> • Group and individual presentation applying SPSS • Student participation in discussion
VI	<ul style="list-style-type: none"> • Exercise on the fitting of data into the computer and determining the appropriate tests using the non-parametric approach
VII	<ul style="list-style-type: none"> • Generate regression and correlation coefficients from the previous data and use them to estimate and establish the test of significance of regression and correlation coefficients

7.

8. 5 Evaluation

9. 5.1 Internal Evaluation (40%)

10. The internal evaluation will be conducted by the course teacher based on the following activities.

- | | |
|--|--|
| <ul style="list-style-type: none"> • Attendance • Participation in learning activities • First assessment (assignment) • Second assessment(written test) • <u>Third assessment (written test)</u> | 5marks
5 marks
10marks
10 marks
10 marks |
|--|--|

11. Total

40

marks

12.

13. 5.2 External Examination (60%)

14. The Examination Division of the Dean's Office, Faculty of Education will conduct the final examination at the end of the semester. The number of questions and marks allocated to different types of questions will be as follows.

- | | |
|--|-------------------------------|
| <ul style="list-style-type: none"> • Objective questions (multiple choice) (10× 1) • Short answer questions, 6 with 2 OR-questions (6× 5) • <u>Long answer questions, 2 with 1 OR-question (2 × 10)</u> | 10marks
30marks
20marks |
|--|-------------------------------|

15. Total

60 points

16.

17. 6. Recommended Books and References

18. 6.1 Recommended Books

19. Freund, J. E. (2012).*Mathematical statistics*, New Delhi: Prentice Hall of India (Units II-VI).
20. Pandit, R. P.& Bhattacharai, L. N. (2016). *Mathematical statistics*: Kathmandu: Indira Pandit (Units II-VII).
21. Upadhyay, H. P. & Dhakal, B. P.(2019).*Mathematical statistics*. Kathmandu: Sunlight Publication(Units II-VII).

22. Bhat, B. R. (1999): *Modern probability theory: An introductory textbook*, (3rd ed.), New Delhi: New Age International (P) Limited, Publishers (Unit I)

23. 6.2. References

24. Garret, H. E. and Woodworth, R. S. (2000). *Statistics in Psychology and Education*. New York: Longman, Green and Co. Inc.
25. Gupta, S. C. & Kapoor, V. K. (2015). *Fundamentals of Mathematical statistics*. New Delhi: Sultan Chand & Sons.
26. Haslett, H. T (1983). *Statistics made simple*, Heinemann: London
27. Mendenhall, W, Schaeffer, R. L. and Wackerly, D. D. (1987). *Mathematical Statistics with Applications*. Boston: PWS Publishers.
28. Wallpole, R. (1979): *Introduction to statistics*, Delhi: Macmillan India
Johnson, R. A. and Wichen, D. W. (2006): *Applied multivariate statistical analysis*, Prentice Hall of India Design of Experiment.

Math Ed. 518: History of Mathematics
Course no. : Math Ed. 518
Level: M.Ed.
Semester: First

Nature of the course: Theoretical
Credit hours: 3
Teaching hours: 48

1. Course Introduction

This course is designed for the comprehensive study of the development of mathematics which helps the students to understand and demonstrate their knowledge of the historical facts of the development of mathematics and mathematical thoughts. This course also focuses on the teaching-learning activities related to the developmental perspectives of mathematics and mathematical culture and explores the history of different papyrus, in different archives and in different monuments/artifacts found in the Hindu, Egyptian, Babylonian, Greek, Mayan, Roman, Chinese and other civilizations.

2. General Objectives

The general objectives of this course are as follows.

- To acquaint the students with the problems of mathematics of antiquity,
- To familiarize them with the early systems of development of numerals and number systems,
- To investigate how mathematics has developed over the centuries,
- To explain early mathematics as practiced by people in different civilizations,
- To address the contemporary issues in mathematics and the history of the philosophy of mathematics,
- To empower the students for addressing the development of modern mathematics from the middle ages to the calculus and other discoveries to recent numbers theory,
- To enable them to establish the relationship between modern mathematics and science
- To examine the contributions of mathematicians to the development of mathematics. and
- To familiarize the students with the practices and developments of South Asian mathematics (Nepal and India).

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• List and describe the problems of mathematics of antiquity• List the characteristic components of number sense and illustrate the skills needed to count• Illustrate the symbolization of numbers and numerals with examples• Explain the systems of numbers and numerals (Kharosty, Brahmi, Lichhavi, Hindu-Arabic, Chinese and Greek).	<p>Unit-I: The Origin and Pre-history of Mathematics (7)</p> <p>1.1 Mathematics of antiquity (pre-historic): Classical problems of mathematics of antiquity</p> <p>1.2 Primitive counting: Sense of number</p> <p>1.3 Numbers, numerals and their symbols</p> <p>1.4 Characteristic components of number sense (meaning, relationship, magnitude operations and referents) and skills need to count (rank, association, succession).</p> <p>1.5 System of numbers and numerals (Kharosty, Brahmi, Lichhavi, Hindu Arabic, Chinese and Greek)</p>

<ul style="list-style-type: none"> • Explain ancient Egyptian mathematics: Arithmetic, geometry, pure and practical • Describe Babylonian mathematics: Arithmetic, geometry, astronomy • Point out the situations of development of mathematics in the Dark age in Europe • Elucidate the development of Greek mathematics • Explain the Zeno's paradox and concept of infinitesimal • Explain the contribution of Greek mathematics philosophers: Thales and Pythagoras. • Describe the geometry developed by Hippocrates, Euclid and Tartaglia • Describe the contributions of Archimedes, Apollonius' Diophantus and Hypatia in to the development of mathematics 	<p>Unit-II: Early Western Mathematics (8)</p> <p>2.1 Ancient Egyptian mathematics (arithmetic, geometry, pure and practical) 2.2 Babylonian mathematics (arithmetic, geometry, astronomy) 2.3 Mathematics in the Dark age (work of Boethius, Bede, Alcuin and Gerbert) 2.4 Greek mathematic philosophers: Zeno of Elea, Thales, Pythagoras, Hippocrates, Euclid, and Tartaglia 2.5 Mathematics developed by Archimedes, Apollonius, Diophantus and Hypatia</p>
<ul style="list-style-type: none"> • Describe the history of mathematics developed by Aryabhata, Brahmagupta, Varahmihira, Śripati. • Explain briefly Sulbasutra (Baudhayana Sulba Sutra), Siddhanta, Samhita, Lagadha and Vedanga Jyoutisha • Delineate the concept of review and excavation of mathematics manuscript-Bakshali manuscripts. • Explain the early Chinese documents on arithmetical classic, nine chapters and Liu Hui • Describe the development of magic square and its uses 	<p>Unit-III: Early Eastern Mathematics (8)</p> <p>3.1 Brief introduction to Hindu mathematicians and their contributions to Indian mathematics developments: Aryabhata I and Aryabhata II, Brahmagupta, Varahmihira and Śripati. 3.2 Development of Sulba sutra (Baudhayana Sulba sutras), Siddhanta, Samhita, Lagadha and Vedanga Jyoutisha 3.3 Concept of review of mathematics manuscript-Bakshali manuscripts 3.4 Chinese early documents (arithmetical classic, nine chapters and Liu Hui) and magic squares</p>
<ul style="list-style-type: none"> • Describe early, high and later mediaeval age's mathematics in Europe. <ul style="list-style-type: none"> • Describe the development of mathematics due to Arabian mathematicians- Alberuni, Al-Khwarizmi, Abu Kamil, and Omar Khayyam • Examine the mathematics developed by Bhaskaracharya II. • Explain the mathematics developments in Renaissance: Algebra (second degree and cubic 	<p>Unit-IV: Medieval Mathematics (Early, High and Later mediaeval)(6)</p> <p>4.1 Introduction to the three phases of medieval period's European mathematics 4.2 Mathematics developed by Alberuni, Al-Khwarizmi, Abu Kamil and Omar Khayyam 4.3 Mathematics developed by Bhaskaracharya II 4.4 Mathematics in renaissance: Algebra,</p>

<p>equation, indices), trigonometric identities, logarithm and Projective geometry</p> <ul style="list-style-type: none"> State and discuss the development and importance of Fibonacci sequence $F_n = F_{n-2} + F_{n-1}$ for $n \geq 3$ with stating $F_1 = F_2 = 1$ 	<p>trigonometry, logarithm (Napier) and projective geometry</p> <p>4.5 Development of Fibonacci sequence and its importance</p>
<ul style="list-style-type: none"> Identify the concept of the development of groups, rings, fields, and vector space, algebraic geometry, differential geometry, non-Euclidean geometry and topology Discuss the dawn of modern mathematics Explain the historical development of calculus, mean value theorems of differential calculus and fundamental theorems of integral calculus Discuss the development of differential equations Describe the geometry developed by Format, Desargues and Pascal Give introduction to modern mathematical sciences developed by Galileo, Kepler, and Rene Descartes Explain the contemporary mathematics: Analysis, Algebra, Geometry and Probability Argue the history of philosophy of mathematics (formalism, intuitionism, logicism) Evaluate the latest mathematical developments of Karl Weierstrass, Maria Agnesi, George Cantor, Ramanujan 	<ul style="list-style-type: none"> Unit-V: Modern Mathematics (12) Review of the concept of the development of groups, rings, fields, and vector space, algebraic geometry, differential geometry, Euclidean and non-Euclidean geometry and topology Concept of the dawn of modern mathematics Historical development of calculus: Concept of derivative (Newton/Leibnitz), concept of Mean Value Theorem for differential calculus, concept of the fundamental theorems of integral calculus and differential equation Development of analytic geometry (developed by Fermat) Geometry developed by Desargues and Pascal Modern mathematical Sciences: Galileo, Kepler, René Descartes Contemporary mathematics: analysis, algebra, geometry, probability History of the philosophy of mathematics.(formalism, intuitionism, logicism) Latest mathematicians' mathematics developments: Karl Weierstrass, Maria Agnesi, George Cantor, Ramanujan
<ul style="list-style-type: none"> Acquire the knowledge of practices of mathematics in Nepal and India Explore the ethno-mathematical and indigenous mathematical practices in Nepal Explore the historical timeline of the practices of mathematics in Nepal Evaluate the contribution of Nepali mathematicians to the development of mathematics (Halayudha Bhatt, Laxmipati Pande, Gopal Pande, Nay 	<p>Unit-VI: Review of South Asian Mathematics (7)</p> <p>6.1 Brief review of south Asian sub continental mathematics (mathematics practices in Nepal and India)</p> <p>6.2 Introduction and review of ethno mathematics based on Nepali culture</p> <p>6.3 Review of historical timeline of mathematics practices in Nepal</p> <p>6.4 Mathematics developed by Nepali</p>

<p>Raj Pant and Chandrakala Devi Dhananjaya.)</p> <ul style="list-style-type: none"> • Discuss the development of mathematical institutions (NMS, MEC, NMC, WoNiMS, MST and their academic activities for the development of mathematics 	<p>mathematicians: Halayudha Bhatt, Laxmipati Pande, Gopal Pande, Naya Raj Pant, Chandrakala Devi Dhananjaya</p> <p>6.5 Mathematical institutions of Nepal (NMS, MEC, NMC, WoNiMS and MST)</p>
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Note: The figures in the parentheses indicate the approximate teaching hours allocated for the respective units.

4. Instructional Techniques: The instructional techniques can vary as according to the nature of the contents. A few general techniques and specific instructional techniques are given below.

4.1 General Techniques

- Lecture with illustration
- Discussion/interaction
- Demonstration/presentation
- Field trip (If possible).
- Project work and home assignments.

4.2 Specific Instructional Techniques

Units	Activities and Instructional Techniques
I	<ul style="list-style-type: none"> • Individual and group discussion on the early development of numbers and numerals in different civilizations • Report writing on antiquity of mathematics • Consultation of library to prepare a report on classical mathematics developments in Nepal • Group and individual assignments • Presentation of the symbolization of numbers and numerals: Brahmi, Lichchhavi and Hindu Arabic.
II	<ul style="list-style-type: none"> • Group discussion on the development of Western mathematics around the Mediterranean sea and Roman empire • Report writing and presentation on Egyptian, Babylonian, Greek and Hindu mathematics and presentation • Group discussion on the development of mathematics by Zeno of Elea, Diophantus, Pappus, Hypatia, Archimedes, Apollonius, Thales, Pythagoras, Hippocrates, Euclid, etc.
III	<ul style="list-style-type: none"> • Group discussion for the information of the earliest concept of Baudhayana Sulba Sutra, mathematics manuscript like Bakshali manuscripts, Siddhanta and Samhita • Individual and group assignment for the collection of manuscripts and the documents of classical mathematics.
IV	<ul style="list-style-type: none"> • Group discussion on the development of mathematics at the early medieval ages, high mediaeval ages, and later medieval ages • Discussion on the meaning of renaissance with algebra, trigonometry,

	logarithm and projective geometry
V	<ul style="list-style-type: none"> • Group discussion on the development of mathematics from the 16th to the 20th • Preparation of a report on the development of mathematics from the 16th-20th centuries. • Discussion on the mean value theorems of differential calculus, differential equations, groups, rings, fields, algebra, analytic and differential geometry, Euclidean and non- Euclidean geometry, topology, etc. • Brows net to search recent development of mathematics
VI	<ul style="list-style-type: none"> • Individual and group reports of sources of historical development of mathematics in the south Asian sub-continent • Individual and group task for searching and investigating the Nepali mathematicians and indigenous mathematics, their mathematical creations, books, articles, reviews, etc. • Individual and group discussion on the activities of Nepali mathematicians/organizations from antiquity to the 21st century's first decades.

5. Evaluation

5.1 Internal Evaluation (40%)

The internal evaluation will be conducted by the course teacher based on the following activities.

- | | |
|--|----------|
| • Attendance | 5 marks |
| • Participation in learning activities | 5 marks |
| • First assessment (assignment) | 10 marks |
| • Second assessment(written test) | 10 marks |
| • Third assessment(written test) | 10 marks |

Total	40 marks
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5.2. External Evaluation (60%)

The Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The number of questions and the marks allocated to each type of question will be as follows.

- | | |
|---|----------|
| • Objective questions (multiple choice) (10×1) | 10 marks |
| • Short answer questions 6 ,with 2-OR questions (6×5) | 30 marks |
| • Long answer questions, 2 with 1-OR question (2×10) | 20marks |
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Total	60 marks
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6. Recommended Books and References

6.1 Recommended books

Boyer, C.B. (1968). *A history of mathematics*. New York: John Willy and Sons Inc. (Units II and III)

Burton (2007). *The history of mathematics: An introduction*, (6th Edition), McGraw-Hill Company. (Units I and V)

Cooke, R. (1997). *The history of mathematics: A brief course*. New York: John Wiley and Sons, Inc. (Units IV and VI)

6.2References

- Acharya. E. R. (2018). *Naya raj pantkaganitiyakriti*, Kathmandu: Khilasharma-Rajeevalochan Joshi Smarak Pratisthan.
- Acharya. E. R. (2018). *Historical information of mathematics in Nepal*, Butwal.
- Acharya. E. R. (2018). *Numeral systems in Nepal*, Butwal.
- Acharya. E. R., Chhetri, D.B. (2018, 2nd Ed.). *Historical development of mathematics*, Sunlight Publication, Kirtipur.
- Bhattarai, L.N., Adhikari, K. P., Neupane, A. (2013). *The history of mathematics*, Quest publication Pvt. Ltd.
- Bhushan, B. D., Singh, A. N. (2011). *History of hindu mathematics* (part I and II), Cosmo Publications.
- Burton, D. M., (2006). *History of mathematics*, The McGraw-Hill Companies, Inc., 1221 Avenue of the Americas, New York, NY 10020.
- Butt, N. H., Jones, P. S., Bedient, J.D. (1988). *The historical roots of elementary mathematics*. Dover Publications.
- Cajori, F. (1909/E-copy 2010). *A history of mathematics*, the Macmillan Company London: Macmillan and co., ltd.
- Cooke, R. (Third Ed., 2013). *The history of mathematics: A brief course*. New York: John Wiley and Sons, Inc.
- Courant, R., Robbins, H. (2nd Ed.1996). *What is mathematics?* New York: Oxford University Press.
- Eves, H. (1984). *An introduction to the history of mathematics*, Saunder College Publishing.
- Ifrah, G. (2000). *Universal history of numbers*, John Wiley and Sons, Inc.
- Pant, N.R. (1983). *Trigonometry*, Kathmandu: Nepal Academy.
- Pant, N.R. (1980). *Gopal Pande and his rule of cube root*, Kathmandu: Nepal Academy.
- Pant, N.R. (1982). *Comparison of ancient and new mathematics*, Kathmandu; Nepal Academy
- Plofker, K. (2009). *Mathematics in India*, Princeton University Press, Princeton and Oxford.
- Shrestha, M. B. (2013). *Philosophy of mathematics*, Kathmandu: Nepal Pragya-Pratishthan,
- Upadhyay, H.P., Bhattarai, L. N. Adhikari, K. P., Neupane, A. (2017). *Historical development of mathematics*, Kirtipur: Dikshanta Pustak Publication.
- Upadhyay, M.P. (2011). *Ancient principal mathematicians*, Kathmandu: Vidhyarthi, Pub.
- Upadhyay, M.P. (2012). *Seven Nepali narrative of mathematics*, Kathmandu: Viplav Paudel.
- Yadav, L.N., Acharya, E.R., Sharma, O., Chhetri D.B. (2015). *History of mathematics*, Kirtipur, Sunlight publication.

Physical Education

- i. P. Ed. 515: Advance Physical Education
- ii. P.Ed. 516: Sports Psychology
- iii. P.Ed. 517: Advanced Skills Development in Athletics and Volleyball
- iv. P.Ed. 518: Ball Games

P. Ed. 515: Advance Physical Education

Nature of course: Theoretical

Level: M. Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Introduction

This course is designed to provide students with a sound foundation of the history, current developments, and future challenges of physical education and its related field. The underlying principles, philosophy, careers, and procedures in the field of physical education and sports will also be dealt with in this course.

2. General Objectives

The general objectives of this course are as follows:

- To make the students familiar with the nature and scope of physical education and sports.
- To enable the students in explaining the foundations of physical education and sports.
- To acquaint the students with the teaching and coaching career in the field of physical education and sports.
- To develop a wider understanding of issues, challenges, and the future of physical education and sport.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">● Explain the meaning and philosophy of physical education and sports.● Describe different philosophies and their application in sports.● Explain the aims and objectives of physical education.● Discuss the role and scope of physical education and sports in society.	<p>Unit I: The Nature and Scope of Physical Education and Sports (10)</p> <p>1.1 Meaning and philosophy of physical education and sports</p> <p> 1.1.1 Meaning and definition of physical education</p> <p> 1.1.2 Concept and importance of philosophy</p> <p> 1.1.3 Modern educational philosophy as employed in physical education: Realism, Pragmatism, Naturalism, Existentialism,</p> <p>1.2 Aims and objectives of physical education and sports</p> <p>1.3 Role and scope of physical education and sport in society</p>
<ul style="list-style-type: none">● Highlight the historical foundations of physical education in ancient times to recent developments.● Describe the biomechanical	<p>Unit II: Foundations of Physical Education and Sports (17)</p> <p>2.1 Historical foundations of physical education and sport</p> <p> 2.1.1 Physical education and sports in Ancient Greece,</p>

<p>foundations of physical education and sports.</p> <ul style="list-style-type: none"> • Explain the sociological foundations of physical education and sports. • Explain the sociological and psychological foundations of physical education and sports. 	<p>Rome, China, and India (Review)</p> <p>2.1.2 Early modern period of physical education and sports in Sweden, Germany, Great Britain, Japan, Philippines, S. Korea, China, and India (Review)</p> <p>2.1.3 Significant recent developments (Since 1970 to Present)</p> <p>2.2 Biomechanical foundations of physical education and sports</p> <p>2.2.1 Kinesiology and biomechanics</p> <p>2.2.2 Reasons for studying biomechanics / Kinesiology</p> <p>2.2.3 Selected biomechanical terms related to human motion</p> <p>2.2.4 Exercise, physiology, and fitness</p> <p>2.2.5 Physical activity, physical fitness for good health</p> <p>2.2.6 Health fitness components, cardio-respiratory endurance, body composition, muscular strength and endurance and flexibility</p> <p>2.3 Sociological foundations of physical education and sports</p> <p>2.3.1 Sociology of sports</p> <p>2.3.2 Participation motives</p> <p>2.3.3 Sport in educational institutions/ corporate organization</p> <p>2.3.4 Inter-school and inter-collegiate sports</p> <p>2.3.5 Girls and women in sports</p> <p>2.3.6 Minorities in sports</p> <p>2.4 Psychological foundations of physical education and sports</p> <p>2.4.1 Psychological benefits of physical activity</p> <p>2.4.2 Exercise adherence</p> <p>2.4.3 Personality</p> <p>2.4.4 Anxiety and arousal minimization</p> <p>2.4.5 Better attention</p>
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<ul style="list-style-type: none"> • Explain different careers in physical education and sports. • Describe the role of leadership in professional development. • Discuss the different aspects of the teaching and coaching profession in physical education and sports. • Explain fitness and health-related careers in physical education and sports. • Identify sport careers in different fields. 	<p>Unit III: Careers and Professional Considerations in Physical Education and Sports (13)</p> <p>3.1 Careers, leadership, and professional development</p> <p> 3.1.1 Organizations in physical education and sport</p> <p> 3.1.2 Careers in physical education and sports</p> <p> 3.1.4 Professionalism and professional preparation</p> <p> 3.1.5 Leadership and professional</p> <p> 3.1.6 Leadership qualities, traits, and skills</p> <p> 3.1.7 Professionalism in sports</p> <p> 3.1.8 Professional organizations in physical education and sports</p> <p>3.2 Teaching and coaching careers in physical education and sports</p> <p> 3.2.1 Choosing a teaching career</p> <p> 3.2.1 Benefits and drawbacks associated with effective teaching</p> <p> 3.2.2 Competencies for beginning teachers</p> <p> 3.2.3 Coaching /Teaching responsibilities</p> <p> 3.2.4 Choosing a coaching career</p> <p> 3.2.6 Benefits and drawbacks of coaching</p> <p> 3.2.7 Teaching and coaching</p> <p> 3.2.9 Career development with certification</p> <p>3.3 Fitness and health-related careers in physical education and sports</p> <p>3.4 Sports careers in media, management, performance fitness center, and other related areas</p>
<ul style="list-style-type: none"> • Discuss the issues and challenges in physical education and sports. 	<p>Unit IV: Issues, Challenges and the Future of Physical Education and Sports (8)</p>

<ul style="list-style-type: none"> Sketch the future of physical education and sports. 	<ul style="list-style-type: none"> 4.1 Issues and challenges in physical education and sports <ul style="list-style-type: none"> 4.1.1 Daily physical education for the better quality of life 4.1.2 Advocacy for physical education program 4.1.3 Achievement of national health goals 4.2 The future of physical education and sports <ul style="list-style-type: none"> 4.2.1 Societal trends and current developments 4.2.2 Health promotion and disease prevention movement (Fitness for all)
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Note: The figures within parentheses indicate the approximate teaching hours allotted to the respective unit.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units or sub-units or content.

4.1 General Instructional Techniques

- Lectures
- Discussions
- Brainstorming
- Presentations
- Guest lectures

4.2 Specific Instructional Techniques

Unit	Activity and Instructional Techniques
I	<ul style="list-style-type: none"> The students will be given reading materials for paper preparation, presentation, and discussion on different philosophies applied in physical education to present in the group. The students will be asked to find the major terms related to physical education and sports and let them discuss them in the group. The students will be given the assignment to prepare the notes on the aims and objectives of physical education. The teacher will provide feedback for further improvement of the task.
II	<ul style="list-style-type: none"> The students will be divided into four groups for group work and each group will be asked to prepare one foundation of physical education. They will also be instructed to present their assignment in a large group. The teacher will facilitate their activities. Very short answer type questions will be prepared to conduct the quiz in the class.
III	<ul style="list-style-type: none"> The students will be asked to develop a survey form to conduct brief fieldwork in the field of physical education and sports. They will be asked to prepare a profile of the organization to show the contribution made by the organization. They will also be asked to develop intervention programs in the respective field. The students will be asked to find different possibilities of jobs in the market in

	<p>the field of physical education and sports and let them analyze a comparative chart of different jobs.</p> <ul style="list-style-type: none"> The students will be asked to organize an interaction program/workshop on teaching and coaching careers in the field of physical education and sports.
IV	<ul style="list-style-type: none"> The students will be asked to organize a workshop on the role of physical education and sports in health promotion and disease prevention. They will also be informed to invite a resource person for the program.

Note: The figures in parentheses indicate the approximate teaching hours allotted to the respective unit.

5. Evaluation Scheme

5.2 Internal evaluation 40%

Internal evaluation will be conducted by subject teachers based on the following activities:

S.N	Activities	Marks
1	Attendance	5
2	Participation in learning activities	5
3	First assignment/ assessment	10
4	Second assignment/assessment	10
5	Third assessment	10
Total		40

5.2 External Examination (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The types and number of questions to be included in the final paper are as follows:

S.N	Types of question	Marks
1	Objective type questions (multiple choice 10x1marks)	10
2	Short answer questions (6 with two OR questions x	30

	5 marks)	
3	Long answer questions (2 with one OR questions x 10 marks)	20
	Total	60

6. Recommended Books and References

6.1 Recommended Books

Davis, B., Bull, R., Roscoe, J. & Roscoe, D. (2000). *Physical education and the study of sport*. Spain: Mosby Harcourt Publishers Limited. **(Unit I and II)**

Hackensmith, C. W. (1976). *History of physical education*. New York: Harper & Row Pub. **(Unit II)**

Howell, R., Howell, M. & Uppal, A. K. (1994). *Foundations of physical education*. Delhi: Friends Publications. **(Unit I-IV)**

Wuest, D. A. & Bucher, C. A. (1992). *Foundations of physical education and sport*. New Delhi: B.I. Publications Pvt Ltd. **(Unit I-IV)**

6.2 References

Baruwal, H. B. (2065). *Historical development of physical education*. Kathmandu: Pinnacle Publication.

Baruwal, H. B., Shrestha, S. B., Bhatta Datta, T. D., Shrestha, M. K. & Poudel, T. R. (2075). *Foundation of physical education*. Kathmandu: Pinnacle Publication.

Maharjan, R. K. (2008). *Foundations of physical education*. Kirtipur: Sunlight Publication.

Sherchan, L. (2012). *Foundations of physical education and sports*. Kathmandu: Quest Publication.

P.Ed. 516: Sports Psychology

Level: M. Ed.

Semester: First

Nature of Course: Theoretical

Credit hours: 3

Teaching hours: 48

1. Course Introduction

This course is designed to give basic concepts and knowledge of sports psychology to the students. It intends to give knowledge, skills, and strategies of sports psychology and its principles, theories, and laws applied to practice physical activities and sports fields. This course aims to motivate and encourage the students to apply psychological and behavioral theories and laws for effective learning of different sports skills. This course also intends to equip the students with the skills and approaches to handle the psychological problems of the disabled especially in physical education and sports areas.

2. General Objectives

The general objectives of this course are as follows:

- To enhance the knowledge of the students on the meaning and importance of sports psychology and explain the psychological factors influencing sports
- To enable the students to comprehend different theories and laws of learning applied to motor learning.
- To make the students able to explain and analyze the psychological treatment of athletes with competition, individual differences, frustration, disabilities, etc.
- To provide the students with knowledge and perception on perceptual-motor learning.
- To familiarize the students with the types and role of emotion in sports performance and importance and types of personality in terms of sports activities.
- To impart the knowledge of sports psychology for the disabled from different perspectives.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Explain the meaning and definitions of sports psychology.• Describe the needs and importance of sports psychology.• Discuss the psychological factors affecting physical performance	Unit I: Introduction to Sports Psychology (8) 1.1 Meaning and definition of sports Psychology.

	<p>1.2 Need and importance of sports psychology</p> <p>1.3 Psychological factors affecting physical performance:</p> <ul style="list-style-type: none"> 1.3.1 Personality 1.3.2 Individual differences 1.3.3 Intelligence 1.3.4 Attitude 1.3.5 Motivation 1.3.6 Aggression 1.3.7 Attention and concentration 1.3.8 Arousal and activation
<ul style="list-style-type: none"> • Discuss various learning theories and apply them in motor activities. • Explain the laws of learning applied to motor learning. • Explore the concept of observation and explain its role in skill learning. • Discuss the meaning, types of the learning curve, and apply in physical activities. 	<p>Unit II: Theories of Learning Applied to Motor Activities (Review) (7)</p> <p>2.1 Theories of learning</p> <ul style="list-style-type: none"> 2.1.1 Trial and error 2.1.2 Conditioning 2.1.3 Insight <p>2.2 Laws of learning applied to motor learning</p> <ul style="list-style-type: none"> 2.2.1 Law of readiness 2.2.2 Law of exercise 2.2.3 Law of effects <p>2.3 Observation and skill learning</p> <p>2.4 Learning curve</p> <ul style="list-style-type: none"> 2.4.1 Meaning of learning curve 2.4.2 Types of the learning curve 2.4.3 Implication of learning curve in physical education and sports

<ul style="list-style-type: none"> • Apply the approaches of psychological treatment in training, coaching, and competition • Discuss the importance of motivation in physical education and sports. • Clarify the concept of frustration, anxiety, fear in sports competition, and manage them properly. • Handle injured athletes in proper psychological ways. 	<p>Unit III: Psychological Treatment of Athletes (8)</p> <p>3.1 Psychological treatments during training, coaching, and competition</p> <p>3.3 Importance of motivation in physical education and sports</p> <p>3.4 Frustration, anxiety, fear in sports competition and their management</p> <p>3.5 Psychological handling of injured athletes during sports competition</p>
<ul style="list-style-type: none"> • Discuss the concept and importance of perception in sports. • Explore the idea of reaction time and its importance in sports competitions. • Describe the mental rehearsal for high sports performance. 	<p>Unit IV: Perceptual Motor Learning (5)</p> <p>4.1 Concept and importance of perception in sports</p> <p>4.2 Reaction time and its importance in sports competition</p> <p>4.3 Mental rehearsal for high sports performance</p>
<ul style="list-style-type: none"> • Discuss and analyze the meaning and importance of emotion in sports. • Explain the types of emotion with examples. • Discuss the role of emotion in sports. • Illustrate the physical, mental, and emotional setup for better sports performance. • Discuss methods for developing emotion properly. 	<p>Unit V: Emotion and Sports (5)</p> <p>5.1 Meaning and importance of emotion in sports</p> <p>5.2 Types of emotion</p> <p>5.3 Role of emotion in sports</p> <p>5.3.1 Fight and flight</p> <p>5.3.2 Face the challenge</p> <p>5.4 Physical, mental, and emotional setup for better sports performance</p> <p>5.5 Methods to develop emotion properly</p>
<ul style="list-style-type: none"> • Discuss the concept and importance of personality in sports. • Describe and analyze the types of personality. • Discuss the role of personality in selecting and deciding proper games and sports. • Analyze the factors affecting the 	<p>Unit VI: Personality and Sports (5)</p> <p>6.1 Concept of personality in sports</p> <p>6.2 Types of personality</p> <p>6.3 Role of personality in selecting and deciding games and sports</p>

<ul style="list-style-type: none"> • Explain the role of physical activities in the development of personality. 	6.4 Factors affecting the development of personality 6.5 Role of physical activities in the development of personality
<ul style="list-style-type: none"> • Explain and illustrate the meaning and types of disabled • Discuss the needs of sports for different disabled • Select appropriate sports activities for disabling • Discuss different methods to fill the gap between disabled and sports. • Explain the Olympic movement for the physically disable and intellectually disabled. • Explain the ways of handling special athletes. 	<p style="text-align: center;">Unit VII: Disability and Sports Psychology (10)</p> 7.1 Meaning and types of the disabled 7.2 Need for sports for different types of the disabled 7.3 Selection and implication of sports for the disabled 7.4 Methods of bridging up the gap between the disabled and sports activities 7.5 Olympics for the physical and intellectually disabled 7.6 Handling of special athletes (case study)

Note: The figures within parentheses indicate the approximate teaching hours allotted to the respective unit.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units or sub-units or content.

4.1 General Instructional Techniques

- Library study, lecture, discussion, question, and answer
- Book review, article review
- Round table discussion, group discussion, panel discussion
- Seminar, workshop, group work
- Assignment, presentation, interaction
- Project work

4.2 Specific Instructional Techniques

Unit	Activity and Instructional Techniques
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I	<ul style="list-style-type: none"> The students will be given reading materials for paper preparation, presentation, and discussion on different psychological factors affecting physical performance to present in the group.
II	<ul style="list-style-type: none"> The students will be divided into different groups, they will work together, discuss, and present their assignments.
III	<ul style="list-style-type: none"> The students will organize a seminar on the given topic, prepare a paper and present it in the class.
IV	<ul style="list-style-type: none"> The students will conduct a workshop on the title assigned by the teacher.
V	<ul style="list-style-type: none"> Very short answer type questions will be prepared to conduct the quiz in the class.
VI	<ul style="list-style-type: none"> The students will organize project activities and conduct them practically.
VII	<ul style="list-style-type: none"> The students will be divided into various groups, work in groups, and present turn by turn in the class.

5. Evaluation Scheme

5.3 Internal Evaluation 40%

Internal evaluation will be conducted by subject teachers based on the following activities:

SN	Activities	Marks
1	Attendance	5
2	Participation in learning activities	5
3	First assignment/ assessment	10
4	Second assignment/assessment	10
5	Third assessment	10
Total		40

5.2 External Examination (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The types and number of questions to be included in the final paper are as follows:

SN	Types of question	Marks

1	Objective type questions (multiple choice 10 x 1 marks)	10
2	Short answer questions (6 with two OR questions x 5 marks)	30
3	Long answer questions (2 with one OR questions x 10 marks)	20
Total		60

6. Recommended Books and References

6.1 Recommended Books

Davis, B., Bull, R., Roscoe, J. & Roscoe, D. (2000). *Physical education and the study of sport*. Spain: Mosby Harcourt Publishers Limited. (**Unit I, III, and VI**)

Kamlesh, M. L. (1996). *Sports psychology*. New Delhi: Surjeet Publication. (**Unit-I, II, IV & VI**)

Lawther, J. D. (1970). *Sports psychology*. New Delhi: Prentice-Hall of India. (**Unit-I, II, III, IV and VI**).

Maurya, V. K. & Gupta, S. C. (1975). *Psychology applied to physical education*. Meerut: Pragati Prakashan. (Unit-I, III, V, VI and VII)

Singh, A., Bains, J., Gill, S. J. & Brar, S. R. (2012). *Essentials of physical education*. Bangalore India: Kalyani Publication (Unit I, III and VI)

Suinn, R. M. (1982). *Psychology in sports: Methods and application*. New Delhi: Surjeet Publication. (**Unit-I, II, III, IV, V & VII**)

6.2 References

Baruwal, H. B., Shrestha, S. B., Bhatta Datta, T. D., Shrestha, M. K. & Poudel, T. R. (2075). *Sports science and games*. Kathmandu: Pinnacle Publication.

Sherchan, L. (2018). *Sports science and games*. Kathmandu: Quest Publication.

P.Ed. 517: Advanced Skills Development in Athletics and Volleyball

Nature of course: Practical

Level: M. Ed.

Credit hours: 3

Semester: First

Teaching hours: 96

1. Course Introduction

This course is designed to develop advanced skills and apply game strategies in volleyball and athletics by the students. The main intention of this course is to apply advanced skills, strategies, scientific principles, and laws in their respective fields, so that the students will be able to demonstrate skills properly, apply related strategies and laws in game situations as well as officiate respective tournaments in a dignified manner.

2. General Objectives

The general objectives of this course are as follows:

- To impart knowledge about historical aspects of development in both volleyball and athletics.
- To enable the students to demonstrate required skills in volleyball and athletics.
- To acquaint the students with the competitive strategies and laws in their respective games/events.
- To make the students able to analyse the skills/strategies applied by their trainees in the concern contests.
- To enable the students to officiate volleyball tournaments and athletics events correctly and unbiasedly way.

3. Specific Objectives and Contents

Specific Objectives	Contents	
<ul style="list-style-type: none">• Explain the meaning of athletics.• Select lead-up exercises for different athletic events.• Perform different skills of running, jumping, and throwing events.• Officiate different events of athletics.• Apply related principles/laws while doing athletic activities.• Prepare the score sheet of	<p>Unit I: Athletics (55)</p> <p>1.1 Introduction to athletics</p> <p>1.2 Lead up exercise for each event</p> <p>1.3 Running events</p> <p> 1.3.1 Sprints: 100 m, 200 m, and 400 m race</p> <p> 1.3.2 Middle distance: 800 m and 1500 m</p> <p> 1.3.3 Long distance: 3000 m. Steeplechase, 3000 m, 5000 m, 10,000 m, 20 km. Walking, Cross country race, Half marathon, Marathon and Ultramarathon</p> <p> 1.3.4 Relay: 4×100 m. and 4×400 m.</p> <p> 1.3.5 Hurdles: 100 m (women). 110 m. and 400 m. men</p> <p> 1.3.6 Combination of Pentathlon, Heptathlon</p>	

each event	<p>Decathlon and Triathlon</p> <p>1.3.7 Guiding principles of start, finish, and coaching strategies</p> <p>1.3.8 Methods of marking the track</p> <p>1.4 Jumping events</p> <p>1.4.1 High jump (Straddle roll): Approach, take off, flight, bar clearance, and landing</p> <p>1.4.2 Long jump: Approach, take off, flight, action in the air, and landing</p> <p>1.4.3 Triple Jump: (Hop, step, and jump): Approach, take off, hop-step-jump, action in the air, and landing</p> <p>1.4.4 Guiding principle and teaching/coaching strategies</p> <p>1.4.5 Methods of marking jumping arenas</p> <p>1.5 Throwing events</p> <p>1.5.1 Shot put: holding, stance, gliding, throw, and follow-through</p> <p>1.5.2 Javelin: grip, carry, approach, withdrawal stride, cross overstride, throwing stride, follow-through, and reverse.</p> <p>1.5.3 Discuss Throw: grip, stance, wind up, throw, release and follow-through</p> <p>1.5.4 Guiding principle and teaching/coaching strategies</p> <p>1.5.5 Methods of marking throwing sectors</p> <p>1.6 Officiating in athletics</p> <p>1.7 Preparation of score sheets for each event</p>
<ul style="list-style-type: none"> • Illustrate a short history of volleyball in the World, Asia, and Nepal. • Explain the requirement of a volleyball game and court marking • Demonstrate different skills involved/needed in the volleyball game. • Explain different training/coaching strategies in Volleyball • Officiate volleyball game 	<p>Unit II: Volleyball (35)</p> <p>2.1 History of volleyball</p> <p>2.1.1 FIVB</p> <p>2.1.2 AVF</p> <p>2.1.3 NVA</p> <p>2.2 Requirements and court marking</p> <p>2.3 Initial positions of the players</p> <p>2.4 Skills of volleyball</p> <p>2.4.1 Servicing</p> <p>2.4.2 Receiving</p> <p>2.4.3 Setting/Raising</p> <p>2.4.4 Spiking</p> <p>2.4.5 Blocking</p> <p>2.4.6 Defense</p> <p>2.5 Offensive and defensive strategies in the volleyball game</p> <p>2.6 Rules and regulation</p> <p>2.7 Officiating practices</p> <p>2.8 Teaching/coaching techniques in volleyball</p>
<ul style="list-style-type: none"> • Prepare a notebook in athletics and volleyball 	<p>Unit III: Preparation of Notebook (6)</p> <p>Volleyball and one event from each- running, jumping, and throwing</p>

Note: The figures within parentheses indicate the approximate teaching hours allotted to the respective unit; In practical classes 1 credit hour = 2 Teaching hours

4. Instructional Techniques

4.1 General Instructional Techniques

This course is less theoretical and more practical. The general instructional techniques to be used while teaching this course are as follows:

- Lecture cum discussion
- Demonstration
- Participation and practice
- Discussion and project work.

4.2 Specific Instructional Techniques

Unit	Activity and Instructional Techniques
I	<ul style="list-style-type: none"> • The teacher will demonstrate all the skills required at the beginning of every class, the students will observe and participate in the activities along with the teacher. • Project work will be given to make a layout for athletics, along with marking on the ground. • Organize an intramural competition in athletics including running, jumping, and throwing. • Officiate the intramural events turn by turn individually.
II	<ul style="list-style-type: none"> • The teacher will demonstrate all the skills required at the beginning of every class, the students will observe and participate in the activities. • Project work will be given for layout and marking on the ground for the volleyball court. • An intramural competition in the volleyball game will be organized. • The intramural volleyball game turn by turn will be officiated.
III	<ul style="list-style-type: none"> • Prepare a notebook in one event from each running, jumping, and throwing in athletics and volleyball game with the guidelines given by the teachers.
IV	<ul style="list-style-type: none"> • The students will be divided into various groups, work in groups and present the report turn by turn in the class.

5. Evaluation Scheme

5.1 Internal evaluation-40%

Internal evaluation will be conducted by subject teachers based on the following activities:

SN	Activities	Marks
1	Attendance	5

2	Participation in learning activities	5
3	Performance	10
4	Tournament organization	10
5	Notebook keeping	10
Total		40

5.2 External Examination (Final Examination)-60%

Examination Division, Office of the Dean, Faculty of Education will appoint an external examiner to conduct a practical examination at the end of the semester.

S.N	Types of practical activities	Marks
1	Performance in particular athletics and volleyball game. <ul style="list-style-type: none"> • Athletics=30 (Running=10, Jumping=10, Throwing=10) • Volleyball=20 	50
2	Oral test	10
Total		60

6. Recommended books and References

6.1 Recommended books

- Allen, E. S. & Ward, J. (1974). *Volleyball*. Boston: Allyn & Bacon Inc.
 FIVB (1989). *FIVB coaches manual I*. Switzerland: Author.
 FIVB (2016). *FIVB rules book*. Switzerland: Author.
 I.A.A.F. (1984). *Track and field: A basic coaching manual*. London: Author.
 I.A.A.F. (1990). *Handbook of rules in athletics*. London: Author.
 National Sports Council (2065). *Fifth National sports technical book*. Kathmandu: Author.
 National Sports Council (2069). *School sports teacher's course (level-1)*. Kathmandu: Author
 Pardivala, J. D. (1978). *Manual of athletic competition*. Bombay: India Printing Workshop.
 Sharma, O. P. (2011). *Rules of games and sports*. New Delhi: Khelsahityakendra.
 Singh, B. (1981). *Rules and skills of games and sports*. New Delhi: Pankaj Publication.
 YMCA (1981). *Rules of games and sports*. New Delhi: YMCA Pub. House.

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6.2 References

- Baruwal, H. B., Shrestha, S. B., Taradatta, B. M., Shrestha, M. K. & Paudyal, T. R. (2074). *Foundation of physical education*. Kathmandu: Pinnacle Publication Ltd. Bagbazar
 Sherchan, L. (2065). *Skills and rules of games and sports*. Kathmandu: Physical Education and Sports.

- Sherchan, L. (2012). *Foundations of physical education and sports*. Kathmandu: Quest Publication.
- Shrestha, S. G. (2061). *Athletics*. Lalitpur: Writing Book Product, Bholakhel

P.Ed. 518: Ball Games

Level: M. Ed.

Semester: First

Nature of course: Practical

Credit hours: 3

Teaching hours: 96

1. Course Introduction:

This course is designed to develop advanced skills, and apply game strategies in Basketball, Football, Handball, or Netball. This course also intends to impart practical experiences by applying related principles in basketball, football, handball, and netball. The students have to choose any two games from this course where they are required to develop specific notes on their respective games. The main intention of this course is to apply advanced skills, strategies, scientific principles, and laws in their respective fields, so that the prospective teachers will be able to demonstrate skills properly, apply related strategies and laws in game situations as well as officiate respective tournaments in a dignified manner.

2. General Objectives

The general objectives of this course are as follows:

- To discuss historical aspects of development in Basketball, Football, Handball, or Netball.
- To demonstrate required skills in Basketball, Football, Handball, or Netball.
- To acquaint competitive strategies and laws in their respective games.
- To enable the students in officiating Basketball, Football, Handball, or Netball tournament.

3. Specific Objectives and Contents

Specific Objectives	Contents
Group A (Anyone)	
<ul style="list-style-type: none">• Explain the historical development of basketball in the world as well as in Nepal.• Demonstrate different skills involved/needed in the basketball game.• Explain the rules and regulations of basketball• Officiate basketball game• Plan-different training/coaching strategies in basketball	<p>Unit I: Basketball (72)</p> <p>1.1 History of basketball</p> <p> 1.1.1 FIBA</p> <p> 1.1.2 ABF</p> <p> 1.1.3 NeBA</p> <p>1.2 Requirements and court marking</p> <p>1.3 Initial positions of the players</p>

	<p>1.4 Skills of basketball</p> <p>1.4.1 Holding and Handling the ball</p> <p>1.4.2 Passing</p> <p>1.4.3 Dribbling</p> <p>1.4.4 Shooting</p> <p>1.4.5 Pivoting and footwork</p> <p>1.4.6 Screening</p> <p>1.4.7 Defense</p> <p>1.4.8 Rebounding</p> <p>1.5 Offensive and defensive strategies in the Basketball game</p> <p>1.6 Rules and regulation</p> <p>1.7 Officiating practices</p> <p>1.8 Teaching/coaching techniques in Basketball</p>
<ul style="list-style-type: none"> • Illustrate a short history of netball • Demonstrate different skills involved/needed in a netball game. • Explain the rules and regulations of the netball game • Officiate netball game • Plan different training/coaching strategies in netball 	<p>Unit II: Netball (72)</p> <p>2.1 History of Netball</p> <p> 2.1.1 INF</p> <p> 2.1.2 ANF</p> <p> 2.1.3 NNA</p> <p>2.2 Requirements and court marking</p> <p>2.3 Initial positions of the players</p> <p>2.4 Skills of Netball</p> <p> 2.4.1 Catching</p> <p> 2.4.2 Balance and landing</p> <p> 2.4.3 Spacing</p> <p> 2.4.4 Intercepting</p> <p> 2.4.5 Footwork</p>

	<p>2.4.6 Passing</p> <p>2.4.7 Shooting</p> <p>2.4.8 Throw in</p> <p>2.5 Offensive and defensive strategies in Netball game</p> <p>2.6 Rules and regulation</p> <p>2.7 Officiating practices</p> <p>2.8 Teaching/coaching techniques in Netball</p>
Group B (Anyone)	
<ul style="list-style-type: none"> • Illustrate a short history of football • Demonstrate different skills involved/needed in the football game. • Explain the rules and regulations of the football game • Officiate football game • Plan different training/coaching strategies in football 	<p>Unit III: Football (48)</p> <p>3.1 Brief History of Football</p> <p> 3.1.1 FIFA</p> <p> 3.1.2 AFF</p> <p> 3.1.3 ANFA</p> <p>3.2 Requirements and court marking</p> <p>3.3 Initial positions of the players</p> <p>3.4 Skills of Football</p> <p> 3.4.1 Passing</p> <p> 3.4.2 Dribbling</p> <p> 3.4.3 Throw in</p> <p> 3.4.4 Heading</p> <p> 3.4.5 Goalkeeping</p> <p> 3.4.6 Kicking</p> <p> 3.4.7 Trapping</p> <p> 3.4.8 Tackling</p> <p>3.5 Offensive and defensive strategies in the Football</p>

	<p>game</p> <p>3.6 Rules and Regulations</p> <p>3.7 Officiating practices</p> <p>3.8 Teaching/coaching techniques in Football</p>
<ul style="list-style-type: none"> • Explain the historical development of handball in the world as well as in Nepal. • Demonstrate different skills involved/needed in a handball game. • Explain the rules and regulations of handball • Officiate handball game • Plan-different training/coaching strategies in handball 	<p>Unit IV: Handball (48)</p> <p>4.1 Brief history of Handball</p> <p> 4.1.1 IHF</p> <p> 4.1.2 AHF</p> <p> 4.1.3 NHA</p> <p>4.2 Requirements and court marking</p> <p>4.3 Initial positions of the players</p> <p>4.4 Skills of Handball</p> <p> 4.4.1 Holding</p> <p> 4.4.2 Shooting</p> <p> 4.4.3 Passing</p> <p> 4.4.4 Goalkeeping</p> <p> 4.4.5 Dribbling</p> <p> 4.4.6 Blocking</p> <p> 4.4.7 Footwork</p> <p>4.5 Offensive and defensive strategies in Handball game</p> <p>4.6 Rules and regulations</p> <p>4.7 Officiating practices</p> <p>4.8 Teaching/coaching techniques in Handball</p>

Note: The figures within parentheses indicate the approximate teaching hours allotted to the respective unit. In practical classes 1 credit hour = 2 teaching hours

4.1 General Techniques

This course is practical:

- Lecture cum discussion
- Demonstration
- Participation and practice
- Drill

4.2 Specific Instructional Techniques

Unit	Activity and Instructional Techniques
I	<ul style="list-style-type: none"> • The teacher will explain the history of basketball and demonstrate all the skills required in basketball, the students will observe and participate in the activities along with the teacher. The students will also practice the skills as required. • Students will be asked to present the rules and regulations of basketball. • Students will be asked to organize a basketball tournament so that they can practice officiating.
II	<ul style="list-style-type: none"> • The teacher will explain the history of netball and demonstrate all the skills required in netball, the students will observe and participate in the activities along with the teacher. The students will also practice the skills as required. • Students will be asked to present the rules and regulations of netball. • Students will be asked to organize a netball tournament so that they can practice officiating.
III	<ul style="list-style-type: none"> • The teacher will explain the history of football and demonstrate all the skills required in football, the students will observe and participate in the activities along with the teacher. The students will also practice the skills as required. • Students will be asked to present the rules and regulations of football. • Students will be asked to organize a football tournament so that they can practice officiating.
IV	<ul style="list-style-type: none"> • The teacher will explain the history of handball and demonstrate all the skills required in handball, the students will observe and participate in the activities along with the teacher. The students will also practice the skills as required. • Students will be asked to present the rules and regulations of handball. • Students will be asked to organize a handball tournament so that they can practice officiating.

5. Evaluation Scheme

5.2 Internal Evaluation-40%

Internal evaluation will be conducted by subject teachers based on the following activities:

SN	Activities	Marks
1	Attendance	5
2	Participation in learning activities	5
3	Performance	10
4	Tournament organization	10
5	Notebook keeping	10
Total		40

5.2 External Examination (Final Examination)-60%

Examination Division, Office of the Dean, Faculty of Education will appoint an external examiner to conduct a practical examination at the end of the semester.

SN	Types of practical activities	Marks
1	Performance in particular games (Any two)	50
2	Oral test	10
Total		60

5. Recommended Books and References

5.1 Recommended Books

- Anand, R. L. (1986). *Playing field manual*. Patiala: NIS Publication.
- Coleman, B. (NM). *Take up basketball*. New Delhi: Learners Press.
- Coleman, B. & Ray, P. (1987). *Basketball technique*. London: A & C Black.
- Czerwinski, J. & Taborsky, F. (2000). *Basic handball: Methods / Tactics / Technique*. Vienna: European Handball Federation.
- FIBA. (2018). *Rules of Basketball*. Switzerland: Author
- FIFA. (2016). *Law of the games*. Switzerland: Author
- Goel, R. G. & Goel, Veena (1990). *Encyclopedia of sports and games*. New Delhi: Vikas Publishing House Pvt. Ltd.
- IHF. (2018) *Rules of handball*. Switzerland: Author
- INF. (2016) *Rules of netball*. England: Author
- Juhasz, I., Melinda, B., Vaczi, P., Vincze, T. & Hajdu, P. (2015). *Ball games*. Hungary: EKCI liceum Press.
- Lama, D. (2014). *A complete Netball*. Kathmandu: Nepal Netball Association.
- National Sports Council. (2065). *Fifth national sports technical book*. Kathmandu: Author.
- National Sports Council. (2069). *School sports teacher's* Sengupta, Shyamul (NM). *How to play football*.
- Sharma, O. P. (2011). *Rules of games and sports*. New Delhi: Khel Sahitya Kendra.

Singh, B. (1981). *Rules and skills of games and sports*. New Delhi: Pankaj Publication.
Wirhed, R. (1992). *Training to win football*. England: Wolf Publishing.

www.Fiba.com

www.fifa.com

www.gilbert-netball.com/ifna

www.netball-academy.org

5.2 References

- Baruwal, H. B., Shrestha, S. B., Shrestha, M. K., Datta, M. T. & Paudel, T. R. (2075). *Sports science and games*. Kathmandu: Pinnacle Publication Ltd. Bagbazar
Jha, A. K. (1993). *Planning and organizing sports facilities*. Kathmandu: Ekta Prakashan.
Jha, A. K. (2003). *Lay-out of games and sports*. Kathmandu: Ratna Pustak Bhandar.
Sherchan, L. (2065). *Skills and rules of games and sports*. Kathmandu: Physical Education and Sports.

Physics Education

- i. Phy. Ed. 515 (T+P) – Mechanics and Mathematical Physics
- ii. Phy. Ed. 516 (T+P) – Thermodynamics
- iii. Phy. Ed. 517 (T+P) – Atomic and Nuclear Physics
- iv. Phy. Ed. 518 (T+P) – Solid State and Nanotechnology

Phy. Ed. 515: Mechanics and Mathematical Physics

Course No.	: Phy. Ed. 515(T)	Nature of the course: Theoretical
Level	: M. Ed. in Physics	Credit hours: 2
Semester	: First	Teaching hours: 32
Period per week: 2		

19. Course Introduction

This is a theory course designed for the students of first semester in Physics education. This Course has two sections i.e. **Mechanics and Mathematical Physics**. The aim of this course is to provide knowledge in the field of Mechanics and Mathematical Physics to the prospective Physics teachers in order to enable them to teach with confidence at higher education level as well and pursue higher studies in Physics education. This course covers Momentum and Elastic Collisions, Rigid body Dynamics, Wave and Oscillatory Motion, Elasticity, Theory of Relativity, Vector Analysis, Matrix Algebra and Basics of Differential Equation.

20. General Objectives

The general objectives of this course are to:

- provide the students with adequate theoretical knowledge of Mechanics and Mathematical Physics.
- develop problem solving skills in Mechanics and Mathematical Physics.
- make students understand the correlation between theory and the experiment.
- enable students to follow the detailed set or sequence of instructions

21. Specific Objectives and Content

Specific Objectives	Contents
	A) Mechanics (21)
<ul style="list-style-type: none">• Define linear momentum and angular momentum and write down their expression. (Review)• Explain conservation of	Units I: Momentum and Elastic Collisions. (3) 1.1 Principles of linear momentum and angular momentum. 1.2 Conservation of linear and

<p>linear momentum in vector differential notation for a system of n particles.</p> <ul style="list-style-type: none"> • Discuss conservation of linear momentum in a system of variable mass like rocket. • Discuss conservation of angular momentum for the scattering of a positive particle by a massive nucleus. • Explain conservation of angular momentum in vector notation for a system of particles. • Define centre of mass of a system of particles and write down its expression. • Find the velocity, acceleration and total linear momentum about the center of mass for n particle system. • Define laboratory center-of-mass and frames of reference • Define Elastic and Inelastic collision. • Discuss elastic collision in two or three dimensions in laboratory frame of reference and center-of- 	<p>angular momentum with examples.</p> <p>1.2.1 Conservation of linear momentum for the system of variable mass- The rocket.</p> <p>1.2.2 Conservation of angular momentum for the scattering of a positive particle by a massive nucleus</p> <p>1.2 Centre of mass of a system of Particles.</p> <p>1.3 Velocity, acceleration and total linear momentum about the center of mass for n particle system.</p> <p>1.4 Laboratory center-of-mass and frames of reference</p> <p>1.5 Elastic and Inelastic Collision (Review).</p> <p>1.5.1 Elastic collision in two or three dimensions</p>
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<p>mass frame of reference.</p> <ul style="list-style-type: none"> • Calculate the value of scattering angle in elastic collision in laboratory frame of reference and center-of-mass frame of reference. • Solve simple numerical examples related to the above topics. 	
<ul style="list-style-type: none"> • Define rigid body, Moment of inertia with expression as a revision. • Describe the theorem of perpendicular axes for a plane laminar body. • Explain the theorem of parallel axes for a plane laminar body. • Calculate Moment of inertia of a rectangular lamina or bar about an axis through its center and parallel to its one side. • Calculate Moment of inertia of a Circular lamina or disc about an axis through its Centre and perpendicular to its plane and about its diameter. • Calculate Kinetic energy of a body rotating about an 	<p>Units II: Rigid body Dynamics. (4)</p> <p>2.1 Rigid body and Moment of Inertia.</p> <p>2.2 Theorems of moment of inertia.</p> <p> 2.2.1 Theorem of Perpendicular axes.</p> <p> 2.2.2 Theorem of Parallel axes.</p> <p>2.3 Calculation of Moment of inertia.</p> <p> 2.3.1 Moment of inertia of a rectangular lamina (bar) about an axis through its center and parallel to one side.</p> <p> 2.3.2 Moment of inertia of a circular lamina or disc about an axis through its center and perpendicular to its plane and about its diameter.</p> <p>2.4 Kinetic energy of rotation</p> <p> 2.4.1 Kinetic energy of a body rotating about an axis through its center of mass.</p> <p> 2.4.2 Kinetic energy of a rotating body whose center of mass has also a linear velocity</p>

<p>axis through its center of mass.</p> <ul style="list-style-type: none"> • Calculate Kinetic energy of a rolling body whose centre of mass has also a linear velocity for the case along a plane surface and an inclined plane. • Solve simple numerical examples related to the above topics. 	
<ul style="list-style-type: none"> • Define wave and oscillation. • Define particle velocity and wave velocity and derive its expression and relation between them. • Derive differential equation of wave motion. • Explain pressure variation in longitudinal waves and derive an expression of pressure amplitude. • Discuss Transverse waves in stretched string. (Mathematical proof). • Calculate energy of Progressive wave and Stationary waves. • Explain Harmonic Oscillator with its equation and derive its expression of 	<p>Units III: Wave and Oscillatory Motion. (4)</p> <p>3.1 Wave and oscillation (Review).</p> <p>3.2 Differential equation of wave motion.</p> <p>3.3 Particle velocity and wave velocity.</p> <p>3.4 Pressure variation in longitudinal waves (pressure amplitude).</p> <p>3.5 Transverse waves in Stretched string.</p> <p>3.6 Energy of Progressive wave and Stationary waves.</p> <p>3.7 Harmonic Oscillator.</p> <p>3.8 Energy of Harmonic Oscillator.</p>

<p>energy.</p> <ul style="list-style-type: none"> Solve simple numerical examples related to above topics. 	
<ul style="list-style-type: none"> Derive relation between moduli of elasticity. Explain Modulus of rigidity. Discuss Torsion of cylinder. Define Poisson's ratio and explain its determination. Derive an expression for Bending moments and Shearing forces. Describe Cantilever with mathematical proof. Explain Beam supported at its ends and loaded in the middle. (Mathematical treatment). Solve simple numerical examples related to above topics. 	<p>Unit IV: Elasticity. (5)</p> <p>4.1 Relation between moduli of elasticity.</p> <p>4.2 Modulus of Rigidity.</p> <p>4.3 Torsion of Cylinder.</p> <p>4.4 Poisson's ratio and its determination.</p> <p>4.5 Bending moments.</p> <p>4.6 Shearing forces.</p> <p>4.7 Cantilever.</p> <p>4.8 Supported beam.</p>
<ul style="list-style-type: none"> Explain the term Relative motion. Define Reference frame. State and explain Newton's laws of motion and their limitations. Explain Inertial frames of reference. Define Galilean transformation and explain 	<p>Units V: Theory of Relativity (5)</p> <p>5.1 Relative motion.</p> <p>5.2 Frame of reference.</p> <p>5.3 Newtonian Relativity.</p> <p>5.3.1 Galilean Transformation.</p> <p>5.4 Special Theory of relativity.</p> <p>5.4.1 The Lorentz transformation equations.</p> <p>5.4.2 Length contraction.</p>

<p>it with some examples of transformation of position, transformation of distance and length, transformation of velocity and transformation of acceleration.</p> <ul style="list-style-type: none"> • Explain Special Theory of relativity. • Discuss the Lorentz transformation equations, Length contraction and Time Dilation. • Write down the formula of variation of mass with velocity (No derivation). • Derive mass-energy equivalence relation (i.e., $E=mc^2$). • Explain non-inertial Frames and Fictitious forces. • Solve simple numerical examples related to above topics. 	<p>5.4.3 Time Dilation. 5.5 Variation of mass with velocity 5.6 Mass-Energy Equivalence 5.7 Non-inertial frames and Fictitious forces.</p>
	<p>B) Mathematical Physics (11)</p>
<ul style="list-style-type: none"> • Discuss the review of vector algebra for following terms: <ul style="list-style-type: none"> a) Unit vector. b) Components of vector. c) Dot product of vectors. 	<p>Units VI: Vector Analysis (4)</p> <p>6.1 Review of the vector algebra. 6.2 Scalar field and Vector field. 6.3 Double and Triple Product of Vectors. 6.4 Reciprocal set of vectors. 6.5 Vector differentiation.</p>

<p>d) Cross product of vectors.</p> <ul style="list-style-type: none"> • Define Scalar field and Vector field. • Explain Double and Triple product of vectors. • Discuss reciprocal set of vectors. • Describe vector differentiation and explain partial derivative of vectors. • Introduce the term Del operator. • Explain the gradient of scalar field and its interpretation. • Describe the divergence of vector field and its interpretation and physical meaning. • Explain the curl of vector field and its interpretation. • Explain line integration and derive relationship between line integral and curl. • State and Explain Gauss' divergence theorem. (Mathematical treatment). • Explain Stoke's theorem and Green's theorem. (Mathematical treatment only). • Solve simple numerical 	<p>6.5.1 Gradient of Scalar field.</p> <p>6.5.2 Divergence of vector field.</p> <p>6.5.3 Curl of vectors.</p> <p>6.6 Vector Integration.</p> <p>6.6.1 Gauss Divergence theorem.</p> <p>6.7.2 Stoke's theorem.</p> <p>6.7.3 Green's theorem.</p>
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examples related to above topics.	
<ul style="list-style-type: none"> • Define Linear Vector Space. • Explain the term Linear Independence, dimension, basis, Inner product and orthogonal basis. • Describe the term Orthogonalization. • Define matrix and explain its notations. • Explain Hermitian, Unitary and Orthogonal matrices with examples. • Define and calculate Eigen values and Eigen vectors of a matrix with examples. • Solve simple numerical examples related to above topics. 	<p style="text-align: right;">Unit-VII: Matrix Algebra (4)</p> <p>7.1 Linear Vector Space. 7.2 Linear Independence. 7.3 Dimension. 7.4 Basis. 7.5 Inner Product. 7.6 Orthogonal basis. 7.7 Orthogonalization. 7.8 Matrix algebra. 7.9 Hermitian, Unitary and Orthogonal matrices. 7.10 Eigen values and Eigen vectors.</p>
<ul style="list-style-type: none"> • Introduce the first order and second order differential equations. • Explain the solution of second order differential equation with few examples. • Describe first order and second order partial 	<p style="text-align: right;">Unit VIII: Basics of Differential Equation. (3)</p> <p>8.1 Introduction. 8.2 Second order differential equation in simple cases. 8.3 Partial Differential Equation 8.3.1 First order Partial Differential Equation. 8.3.2 Second order Partial Differential equation.</p>

<p>differential equations with few simple examples.</p> <ul style="list-style-type: none"> • Solve simple numerical examples related to above topics. 	
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Note: The figures in the parentheses indicate the appropriate teaching hours for the respective units.

22. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Techniques

- Lecture
- Demonstration
- Discussion
- Inquiry
- Project work
- Collaborative work

4.2 Specific Instructional Techniques/Activities

Unit	Activities and Instructional Techniques
I	Power point presentation, Preparation of charts, Field work
II	Web surfing, Interaction, Report writing
III	Problem solving, Assignments like searching audio-visual work (animated film from internet)
IV	Group work, Presentations, Report writing, Construction of teaching materials like model, leaflet etc.
V	Library works, Web surfing
VI	Problem solving, Home assignment
VII	Library work, Power point presentation

VIII	Class work, Discussion
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Evaluation

5.1 Evaluation (Internal Assessment and External Examination)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25 Marks	40 Marks	65 Marks

Note: Students must pass separately in internal assessment and end-semester examination.

5.1.2 Internal Evaluation 25 Marks

Internal evaluation will be conducted by course teacher based on following activities:

- | | |
|--|----------|
| 1. Attendance and participation in learning activities | 5 Marks |
| 2. First assignment (written assignment) | 5 Marks |
| 3. Second assignment (report writing and presentation) | 5 Marks |
| 4. Third assignment/ Term exam | 10 Marks |
| Total | 25 Marks |

Note: First assignment/assessment might be a book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be a project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

5.1.3 External Evaluation (Final Examination) 40 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

- | | |
|---|----------|
| 5. Objective questions (Multiple Choice Questions 10 x 1mark) | 10 Marks |
| 6. Subjective short questions (6 questions with 2 'OR 'questions x 5 marks) | 30 Marks |
| Total | 40 Marks |

23. Recommended Books and References

Recommended Books:

Harper, C. (2010). *Introduction to Mathematical Physics*. New Delhi: Prentice Hall of

India Learning Private Limited. **(For Units - VI, VII & VIII)**

Mathur, D. (2011). *Mechanics*. New Delhi: S. Chand Co. Ltd. **(For Units -I, II, III,**

IV&V)

References:

Gupta, B. (2011). *Mathematical Physics (Fourth Edition)*. India: Vikas Publishing house.

(For Units - VI, VII & VIII)

Smith, C. (2010). *General properties of matter*. Calcutta, India: Radha Publishing house.

Spiegel Murray, R. (2002). *Vector analysis (Schaum's series)*. London: Mc.Graw Hill.

(For Unit -VI).

Phy. Ed. 515: Mechanics and Mathematical Physics (Practical)

Course No.	: Phy. Ed. 515 (P)	Nature of the course: Practical
Level	: M. Ed. in Physics	Credit hour: 1
Semester	: First	Teaching hours: 48*
Period per week: 3 pds/day/week/gr(P) **		

1. Course Introduction

This course includes practical component of the theoretical discussion of **Mechanics and Mathematical Physics**. The aim of this course is to develop knowledge and skills required to conduct Physics practical classes at higher level of Science Education. This course covers Momentum and Elastic Collisions, Rigid body Dynamics, Wave and Oscillatory Motion and Elasticity.

2. General Objectives

The general objectives of this course are to:

- provide students adequate practical knowledge of Mechanics and Mathematical Physics.
- develop skills to students to perform experiments using scientific instruments and apparatus, including techniques of operation, aspects of safety/precaution and techniques of statistics
- enable the students in designing and planning investigations
- make students understand the correlation between theory and the experiment.

3. Specific Objectives and Contents

Specific Objectives	Contents (48pds)
<ul style="list-style-type: none">• Study one dimensional elastic collision by using two hanging spheres.• Study the conservation of momentum in two-dimensional collision.	I) Momentum and Elastic Collisions (6) 1.1 Elastic Collision. 1.2 Conservation of linear momentum.
<ul style="list-style-type: none">• Determine Moment of inertia of	II) Rigid body Dynamics. (9)

<p>a body by using a torsion pendulum.</p> <ul style="list-style-type: none"> • Study the theorem of parallel axes of Moment of inertia. • Study the theorem of perpendicular axes of Moment of inertia. 	<p>2.1 Moment of Inertia</p> <p>2.1.1 Theorem of parallel axes.</p> <p>2.1.2 Theorem of perpendicular axes.</p>
<ul style="list-style-type: none"> • Study oscillations of a rubber band and to draw potential curve for it. • Study the damping of a bar pendulum (logarithmic decrement) • Study the oscillations of a mass in combination of two springs in series and hence determine force constant. • Determine velocity of the transverse waves on stretched string using Sonometer. 	<p>III) Wave and Oscillatory Motion (12)</p> <p>3.1 Oscillations in rubber and its potential curve</p> <p>3.2 Damping condition in a Bar Pendulum</p> <p>3.3 Oscillations in spring.</p> <p>3.3.1 Oscillations of spring in series combination and its force constant.</p> <p>3.3.2 Velocity of the transverse waves on stretched string.</p>
<ul style="list-style-type: none"> • Determine the Young's modulus (Y) of the material of a beam by cantilever method. • Determine the Young's modulus (Y) of the material of a rectangular beam by method of bending. (Using Travelling Microscope). • Determine the Young's modulus (Y) of the material of a rectangular beam by method of bending. (Using Spherometer). 	<p>IV) Elasticity (21)</p> <p>4.1 Determination of Young's modulus of Elasticity (Y).</p> <p>4.1.1 Cantilever method.</p> <p>4.1.2 Method of bending.</p> <p>4.1.3 Searle's apparatus method.</p> <p>4.2 Determination of Poisson's ratio.</p> <p>4.3 Determination of Modulus of rigidity (η).</p> <p>4.3.1 Dynamical method.</p> <p>4.3.2 Statistical method.</p>

<ul style="list-style-type: none"> • Determine Young's modulus (Y) of material of a wire by Searle's apparatus. • Determine the Poisson's ratio for rubber. • Determine Young's modulus (Y), modulus of rigidity (η) and Poisson's ratio (σ) for the material of wire by Searle's arrangement. • Determine modulus of rigidity (η) of material of rod by Maxwell's needle. (Dynamical method). • Determine the modulus of rigidity (η) of a material of rod by Barton's vertical apparatus. (Statistical method). 	
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4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Techniques

- Lecture
- Demonstration
- Discussion
- Inquiry
- Project
- Collaborative work

4.2 Specific Instructional Techniques/Activities

Unit	Activities and Instructional Techniques

I	Problem solving, Presentation
II	Handling of Instrument, Observation
III	Internet surfing, Problem solving, Discussion
IV	Field visit, Participatory activities

- The teachers may decide the project work related to the course work.

6. Evaluation 35 Marks

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15 Marks	20 Marks	35 Marks

5.1 Internal Evaluation 15 Marks

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5Marks
2.	Students' portfolios (Record book and Books and article review etc.)	5Marks
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5Marks
	Total	15Marks

5.2 External Evaluation 20 Marks

Marks distribution for practical external evaluation will be as following.

1.	Experiment / project work report and presentation / study reports	15Marks
2.	Viva-voce	5 Marks
	Total	20Marks

Note:

Students must pass both in internal as well as external assessment of practical examination

** Practical teaching hours is 3 times more than teaching hours of theory ($3 \times 16 = 48$ hours)*

***A group consists of 15 students and one teacher will be assigned for a group.*

***Construction of models, charts, teaching aids, develop concept map etc. Also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.

6. Recommended Books and References

Recommended Books:

Arora, C. (2009). **B.Sc. Practical Physics**. New Delhi: S. Chand & Company (Pvt) Ltd.

Singh, H., & Dr. Hemne, P. (2011). **B.Sc. Practical Physics**. New Delhi: S. Chand & Co. Ltd.

References:

Halliday, Resnick, & Krane. (2009). **Laboratory Physics**. Singapore: John Wiley & Sons.

Mittal, R., & Singal, S. (1995). **Laboratory manual in Physics**. Karol Bagh, New Delhi: Arya Book Depot.

Sharma, Singh, & Prasad. (2008). **Degree Level Practical Physics**. Patana: Bharati Bhawan Publication.

Phy. Ed. 516: Thermodynamics

Course No.	: Phy. Ed. 516 (T)	Nature of the course: Theoretical
Level	: M. Ed. in Physics	Credit hours: 2
Semester	: First	Teaching hours: 32
		Period per week: 2

1. Course Description

This is a theory course designed for the students of first semester M.Ed. in Physics education. The aim of the course is to provide knowledge in the field of Thermodynamics which can help the prospective Physics teachers teach with confidence at the higher education level and also pursue higher studies in the Physics education. This course includes Laws of Thermodynamics and their application, Thermo-dynamical Relationship, Concept of Ideal and Real gases, Transport Phenomenon, Black Body Radiation and Thermal devices and Power generators.

2. General Objectives

The general objectives of this course are to:

- acquaint the students with adequate theoretical knowledge of Thermodynamics.
- develop problem solving skills in Thermodynamics.
- make students to understand the correlation between theory and the experiment.
- enable students in following a detailed set or sequence of instructions.

3. Specific Objectives and Contents

Specific Objectives	Contents

<ul style="list-style-type: none"> • State and explain Second law of thermodynamics. • Explain Carnot's reversible engine, Carnot cycle and derive its efficiency. • Describe Carnot's Theorem. • Explain Thermodynamics of refrigeration and derive coefficient of performance of refrigerator. • Discuss some practical heat engines like steam engine, petrol engine and diesel engine with their construction, PV-diagram and efficiency. • Describe the term Entropy and explain the change of entropy in reversible and irreversible process. • Discuss the physical significance of entropy. • Derive entropy of a perfect gas and steam. • Explain Third law of Thermodynamics and give some of its applications. • Discuss some terms like zero-point energy, negative temperature and heat death of universe. • Solve simple numerical examples related to above topics. 	<p>Units I: Laws of Thermodynamics and their application.</p> <p>(5)</p> <p>1.1 Second law of thermodynamics.</p> <p>1.2 Carnot's reversible engine.</p> <p>1.3 Carnot's theorem.</p> <p>1.4 Thermodynamics of Refrigeration</p> <p>1.5 Some practical Heat Engines</p> <p> 1.3.1 Steam engine</p> <p> 1.3.2 Petrol engine</p> <p> 1.3.3 Diesel engine</p> <p>1.6 Entropy and entropy changes in reversible and irreversible process.</p> <p>1.7 Physical significance of entropy</p> <p>1.8 Entropy of a perfect gas.</p> <p>1.9 Entropy of a steam</p> <p>1.10 Third law of Thermodynamics and its application.</p> <p>1.11 Related terms</p> <p> 1.11.1 Zero-point energy</p> <p> 1.11.2 Negative temperature</p> <p> 1.11.3 Heat death of universe</p>
<ul style="list-style-type: none"> • Describe extensive and intensive thermodynamic variables. • Derive general Maxwell's thermodynamical relations using first and second law of thermodynamics. 	<p>Units II: Thermo-dynamical Relationship</p> <p>(6)</p> <p>2.1 Thermodynamic Variables</p> <p> 2.1.1 Extensive and Intensive Variables</p>

<ul style="list-style-type: none"> • Apply Maxwell's thermodynamical relation to derive heat equation for perfect and Vander Waals gas. • Discuss Joule-Thomson cooling effect using Maxwell's relation. • Derive Joule- Thomson coefficient (μ) for perfect and Vander Waals gas. • Derive Clausius-Clapeyron equation (First Latent heat equation) using Maxwell's relations. • Explain and derive the relation of Thermodynamics Potentials, as given below: <ul style="list-style-type: none"> a) Helmholtz' Function. b) Internal Energy. c) Enthalpy. d) Gibb's Function. • Discuss the significance of Thermodynamic potentials. • Calculate Maxwell's Thermodynamic relations using thermodynamical potentials. • Find first and second T-dS equations using Maxwell's relations. • Derive Clausius Clapeyron equation by using Maxwell's Thermodynamic relation and using Carnot's cycle. • Discuss the effect of pressure on boiling point of a liquid and melting point of solid • Solve simple numerical examples related to above topics. 	<p>2.2 General Maxwell's Thermodynamical Relations</p> <p>2.2.1 Applications in specific heat equation for perfect and Vander Waals's gas</p> <p>2.3 Joule-Thomson cooling</p> <p>2.4 Joule-Thomson Coefficient (μ) for perfect and Vander Waals gas</p> <p>2.5 Clausius-Clapeyron equation (First Latent heat equation).</p> <p>2.6 Thermodynamics Potentials.</p> <p>2.6.1 Significance of Thermodynamic Potentials</p> <p>2.6.2 Relation of thermodynamical potential with their variables (Maxwell's Thermodynamic relation).</p> <p>2.7 T-ds Equations</p> <p>2.8 Clausius Clapeyron equation from Maxwell's Thermodynamical relations and using Carnot's cycle</p> <p>2.8.1 Effect of pressure on Boiling Point of liquid</p> <p>2.8.2 Effect of Pressure on Melting Point of Solid</p>
<ul style="list-style-type: none"> • Define and differentiate the Ideal and 	<p>Units III: Concept of Ideal and</p>

<p>Real gases and critical temperature.</p> <ul style="list-style-type: none"> • Discuss the reasons of modification of gas equation. • Derive Van der Waals equation of gas and calculate the critical constants used in it. • Discuss the limitations of Van der Waals equation. • Describe perfect gas by experimental method of Joule's law. • Derive expression of Joule's coefficient. • Discuss Joule-Thomson effect and porous plug experiment with experimental results. • Solve simple numerical examples related to above topics. 	<p>Real gases.</p> <p>(5)</p> <p>3.1 Concept of Ideal and Real gases.</p> <p>3.2 Reasons of modification of gas equation.</p> <p>3.3 Van der Waals equation of a gas and its critical constants.</p> <p>3.3.1 Limitations of Van der Waals equation.</p> <p>3.4 Joule's law for a perfect gas.</p> <p>3.5 Expression of Joule's coefficient.</p> <p>3.6 Joule-Thomson effect and Porous Plug experiment.</p>
<ul style="list-style-type: none"> • Describe Molecular Collisions, Collision cross-section and Molecular diameter. • Define Mean free path and derive its expression. • Discuss Transport phenomenon. • Explain the transport of momentum, energy and mass. (By using viscosity, thermal conductivity and diffusion process) • Discuss Brownian motion. • Describe Einstein's calculation for the diffusion coefficient to Brownian motion. • Discuss the distribution of Brownian particles in a 	<p>Units IV: Transport Phenomenon.</p> <p>(5)</p> <p>4.1 Molecular collisions.</p> <p>4.2 Collision cross-section.</p> <p>4.3 Molecular diameter.</p> <p>4.4 Mean free Path.</p> <p>4.5 Transport phenomenon.</p> <p>4.6 Brownian motion.</p> <p>4.7 Einstein's theory of Brownian motion.</p> <p>4.8 Distribution of Brownian particles in a Vertical column with the determination of Avogadro's</p>

<p>Vertical column with the determination of Avogadro's number.</p> <ul style="list-style-type: none"> • Solve simple numerical examples related to above topics. 	<p>number.</p>
<ul style="list-style-type: none"> • Define the term thermal radiation, total energy density, spectral energy density, emissive power, spectral emissive power and absorptive power. • Explain Kirchhoff's law and derive its relation. • Define pressure of radiation and derive its expression. • Derive the relation of pressure of diffused radiation. • Explain Stefan-Boltzmann's law and derive its relation. • Derive Stefan's law by using first law of thermodynamics and Maxwell's relation. • Determine Stefan's constant by laboratory method. • Discuss spectrum of black body radiation. • State Wien's Displacement law. • Explain Planck's radiation law. • Deduce Rayleigh-Jean law of spectral distribution of energy. • Derive Wien's law and Rayleigh-Jeans law from Planck's law of radiation. • Deduce Stefan's constant from Planck's radiation law. • Calculate Wien's constant. • Solve simple numerical examples related 	<p>Units V: Black Body Radiation.</p> <p>(6)</p> <p>5.1 Thermal radiation</p> <p>5.2 Total energy density and Spectral Energy density.</p> <p>5.2 Emissive power and spectral emissive power.</p> <p>5.4 Absorptive power.</p> <p>5.5 Kirchhoff's law.</p> <p>5.6 Pressure of radiation.</p> <p>5.7 Pressure of diffuse radiation.</p> <p>5.8 Stefan-Boltzmann's law.</p> <p>5.9 Laboratory method for the determination of Stefan's constant.</p> <p>5.10 Spectrum of black body radiation.</p> <p>5.11 Wien's displacement law.</p> <p>5.12 Planck's radiation law.</p> <p>5.13 Rayleigh-Jeans law.</p>

<p>to above topics.</p> <ul style="list-style-type: none"> • Explain thermoelectric materials with examples and write down its efficiency. • Describe Thermo electric power generators with working, working principle, maximum power generation and its efficiency (no derivation). • Explain in brief the types of Thermoelectric generator. • Discuss the advantages and disadvantages with its applications and limitations. • Explain Magneto Hydro Dynamic Power Generation (MHD) with working principle and write down the power generated per unit length of it. • Describe the Magneto Hydro Dynamic Power Generation (MHD) cycles and working fluids. • Explain voltage and power output of MHD generation. • Discuss advantages and disadvantages of MHD generation with its applications. • Explain Thermoelectric Coolers with its working principle and construction. • Discuss advantages and disadvantages of Thermoelectric Coolers with its applications. • Explain Thermocouples with its construction, working principle and working by giving some illustrations. • Describe the types of Thermocouples with their characteristics. • Discuss advantages and disadvantages of 	<p>Units VI: Power generators and Thermal Devices (5)</p> <p>6.1 Thermo-electric materials</p> <p>6.2 Thermo Electric Power Generators</p> <p>6.3 Magneto Hydro Dynamic Power Generation (MHD)</p> <p>6.4 Thermoelectric Coolers</p> <p>6.5 Thermocouples</p> <p>6.6 Resistance Temperature Detector (RTD)</p> <p>6.7 Thermistor</p>
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<p>Thermocouples with their applications.</p> <ul style="list-style-type: none"> • Explain Resistance Temperature Detector (RTD) with its components, construction and working principle. • Discuss the wire configuration in Resistance Temperature Detector (RTD). • Discuss advantages and disadvantages of Resistance Temperature Detector (RTD) with its applications. • Explain Thermistor with its construction and working principle. • Discuss the following types of Thermistors: <ul style="list-style-type: none"> - Negative Temperature Coefficient Thermistor - Positive Temperature Coefficient Thermistor • Describe the characteristics of Thermistor with its advantages, disadvantages and applications. • Differentiate between Thermistor and Thermocouple. • Distinguish between Thermistor and Resistance Temperature Detector. 	
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Note: The figures in the parentheses indicate the appropriate teaching hours for the respective units.

Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Techniques

- Lecture
- Demonstration

- Discussion
- Inquiry
- Project work
- Collaborative work

4.2 Specific Instructional Techniques/Activities

Unit	Activities and Instructional Techniques
I	Power point presentation, Preparation of charts, Field work
II	Web surfing, Interaction, Report writing
III	Problem solving, Assignments like searching audio-visual work (animated film from internet)
IV	Group work, Presentations, Report writing
V	Library works, Construction of teaching materials like model. leaflet etc related to the content
VI	Web surfing, Interaction, Report writing

5. Evaluation

5.1 Evaluation (Internal Assessment and External Examination)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25 Marks	40 Marks	65 Marks

Note: Students must pass separately in internal assessment and end-semester examination.

5.1.1. Internal Evaluation 25 Marks

Internal evaluation will be conducted by course teacher based on following activities:

1.	Attendance and participation in learning activities	5 Marks
2.	First assignment (written assignment)	5 Marks
3.	Second assignment (report writing and presentation)	5 Marks
4.	Third assignment/ Term exam	10 Marks
Total		25 Marks

Note: First assignment/assessment might be a book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be a project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

5.1.2. External Evaluation (Final Examination) 40 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

1.	Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
2.	Subjective short questions (6 questions with 2 'OR 'questions x 5 marks)	30 Marks
Total		40 Marks

6. Recommended Books and References

Recommended Books:

Agarwal, J., & Prakash, S. (2012). Thermal Physics. Meerut: Pragati Prakashan (**For Units - I, II, III, IV &V**)

Ajith, K. R., & Jinshah, B. S. (2013). Magnetohydrodynamic Power Generation.

International Journal of Scientific and Research Publications, 3(6).

(For Unit - VI)

Goldsmid, H. J. (2016). *Introduction to thermoelectricity* (Vol. 121). Springer.

(For Unit - VI)

Hughes, T. A. (2007). *Measurement and control basics*. ISA – The Instrumentation,

Systems, and Automation Society. (**For Unit - VI**)

Kerlin, T. W., & Johnson, M. (2012). *Practical thermocouple thermometry*. Instrument

Society of America. (**For Unit - VI**)

Nikitin, M., & Skipidarov, S. (2016). *Thermoelectrics for Power Generation: A Look at Trends in the Technology*. BoD–Books on Demand. (**For Unit - VI**)

References:

Brijlal, & Subrahmanyam, N. (2010). *Heat and Thermodynamics*. New Delhi: S. Chand and Company Ltd.

Khandelwal, D., & Pande, A. (2010). *Thermodynamics and Statistical physics*.

Bombay: Himalayan Publishing House.

Phy. Ed. 516: Thermodynamics (Practical)

Course No.	: Phy. Ed. 516 (P)	Nature of the course: Practical
Level	: M. Ed. in Physics	Credit hour: 1
Semester	: First	Teaching hours: 48*
Period per week: 3pds/day/week/gr(P)**		

1. Course Introduction

This course includes practical component of the Thermodynamics. The aim of this course is to develop knowledge and skills required to conduct Physics practical classes at Higher Secondary School, Bachelor and Master level of Science Education.

2. General Objectives

The general objectives of this course are to:

- provide students adequate practical knowledge of Thermodynamics.
- develop skills to students to perform experiments using scientific instruments and apparatus, including techniques of operation and aspects of safety/precaution.
- enable the students in designing and planning investigations
- make students to understand the correlation between theory and the experiment.

3. Specific Objectives and Contents

Specific Objectives	Contents (48pds)
<ul style="list-style-type: none">• Determine the critical temperature and critical pressure of a gas.• Determine the pressure coefficient of air by constant volume air thermometer.• Determine the M.P. of a substance with a constant volume thermometer.• Determine the ratio of c_p and c_v by Clement and Desorm's method.• Determine the Stefan's constant.	<ol style="list-style-type: none">1. Critical temperature and critical pressure of a gas.2. Pressure coefficient of air.3. Melting Point by constant volume Thermometer.4. Specific heat capacity at constant pressure c_p and at constant volume c_v.5. Stefan's constant.6. Specific heat capacity of graphite and its

<ul style="list-style-type: none"> • Determine the specific heat capacity of the given solid sample and also estimate the probable error due to precision of your data. • Determine specific heat capacity of graphite and its variation with temperature. • Determine the specific heat of a liquid (turpentine oil) by law of cooling. • Determine thermal conductivity of a metallic rod by Searle's apparatus. • Determine the thermal conductivity of a bad conductor by Lee's disc method. • Determine the relative humidity of air in the laboratory by Daniel Hygrometer. • Determine the mechanical equivalent of heat by Callender and Barnes' constant flow method. • Verify Joule's law of heating effect. • Determine the mechanical equivalent of heat by using Joule's calorimeter. • Determine heating efficiency of an electrical kettle with varying voltages. • Prepare a report related to any power generators and Thermal Devices. 	<p>variation with temperature.</p> <p>7. Specific heat capacity of liquid.</p> <p>8. Thermal conductivity of a good conductor.</p> <p>9. Thermal conductivity of a bad conductor.</p> <p>10. Relative humidity by Daniel Hygrometer.</p> <p>11. Joule's Law of Heating effect.</p> <p>12. Joule's mechanical equivalent of heat. Thermal Efficiency</p> <p>13. Power generators and Thermal Devices</p>
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4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Techniques

- Demonstration

- Discussion
- Inquiry
- Project
- Collaborative work

4.2 Specific Instructional Techniques/Activities

- Internet surfing
- Develop manuscript by collaboration and discussion
- Workshops: Presentation, participatory activities
- Books and article review
- Field visit
- Preparation of charts, models, presentations slides, and reports.
- The teachers may decide the project work related to the course work.

5. Evaluation 35 Marks

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15 Marks	20 Marks	35 Marks

5.1 Internal Evaluation 15 Marks

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5Marks
2.	Students' portfolios (Record book and Books and article review etc.)	5Marks
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5Marks
	Total	15Marks

5.2 External Evaluation

20 Marks

Marks distribution for practical external evaluation will be as following.

1.	Experiment / project work report and presentation / study reports	15Marks
2.	Viva-voce	5 Marks
	Total	20Marks

Note:

Students must pass both in internal as well as external assessment of practical examination

** Practical teaching hours is 3 times more than teaching hours of theory ($3 \times 16 = 48$ hours)*

***A group consists of 15 students and one teacher will be assigned for a group.*

****Construction of models, charts, teaching aids, develop concept map etc. Also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.*

6. Recommended Books and References

Recommended Books:

Arora, C. (2009). *B.Sc. Practical Physics*. New Delhi: S. Chand & Company

(Pvt) Ltd.

Singh, H., & Dr. Hemne, P. (2011). *B.Sc. Practical Physics*. New Delhi: S.

Chand & Co.Ltd.

References:

Halliday, Resnick, & Krane. (2009). *Laboratory Physics*. Singapore: John Wiley & Sons.

Mittal, R., & Singal, S. (1995). *Laboratory manual in Physics*. Karol Bagh, New Delhi: Arya Book Depot.

Sharma, Singh, & Prasad. (2008). *Degree Level Practical Physics*. Patana: Bharati Bhawan Publication.

Phy. Ed 517: Atomic and Nuclear Physics

Course No.: Phy. Ed 517 (T)

Nature of the course: Theoretical

Level: M. Ed. in Physics

Credit hours: 2

Semester: First

Teaching hours: 32

Periods per week: 2

1. Course Introduction

This course is designed to acquaint the students with "**Atomic and Nuclear Physics**". It is divided into two parts: theory and practical. The theory part of **Atomic Physics** covers atomic theory and atomic model, effect of magnetic and electric field on spectral lines, characteristics of X-ray spectrum. **Nuclear Physics** covers the constituents of the nucleus, radioactivity, interaction of nuclear radiation with matter, nuclear detectors and particle accelerators. The practical part includes practical activities/experiments about the topics of **Atomic and Nuclear Physics** above. The aim of this course is to provide skill and knowledge in the field of atomic and nuclear physics. The course is expected to help the prospective science teachers teach with confidence . This course also provides the theoretical background for practical and research work.

2. General Objectives

The general objectives of this course are:

- To provide the students with adequate theoretical knowledge of atomic and nuclear physics.
- To develop problem solving skills in students in atomic physics.
- To acquire knowledge and uses of nuclear physics.
- To develop practical knowledge on atomic physics and nuclear physics.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none"> • Explain Bohr's model of the hydrogen atom. • Review expression for radii of the stationary orbits, total energy of the electron in nth orbit. • Explain excitation energy and excitation potential with suitable examples. • Describe briefly Ionization energy and Ionization potential with suitable example. • Discuss the Bohr's correspondence principle. • Explain Franck-Hertz experiment. • Write down the limitations of Bohr's model. • Frank-Hertz experiment. • Describe Sommerfeld non-relativistic atom. • Discuss Sommerfeld relativistic correction. • Explain the Vector atomic model on the basis of spatial quantization and spinning electron. • Describe quantum numbers associated with the vector atom model. • Explain L-S and J-J coupling schemes. • Describe sub-shells designation schemes. • State and explain the Pauli Exclusion Principle with its application. • Describe an expression of orbital and spin.magnetic moments in terms of Bohr Magneton. • Discuss Stern and Gerlach experiment with necessary theory and conclusions. • Apply vector model of atom for the fine structure of hydrogen lines and doublet structure of alkali spectrum. • Write down the spectral notation with the help 	<p>Unit I: Atomic theory and atomic model (7)</p> <p>1.1 Bohr's hydrogen atom</p> <p>1.2 Excitation energy and excitation potential</p> <p>1.3 Ionization energy and Ionization potential</p> <p>1.4 Bohr's correspondence principle</p> <p>1.5 Franck-Hertz experiment</p> <p>1.6 Limitations of Bohr's model</p> <p>1.7 Sommerfeld non- relativistic atom</p> <p>1.8 Sommerfeld relativistic correction</p> <p>1.9 The Vector atom model</p> <p> 1.9.1 Spatial quantization</p> <p> 1.9.2 Spinning electron</p> <p>1.10 Quantum numbers associated with the vector atom model</p> <p>1.11 Coupling schemes</p> <p> 1.11.1 The L-S coupling scheme</p> <p> 1.11.2 The J-J coupling scheme</p> <p>1.12 The sub-shells notation schemes</p> <p>1.13 The Pauli Exclusion Principle</p> <p>1.14 The orbital and the spin magnetic moments</p> <p>1.15 The Stern-Gerlach experiment</p> <p>1.16 Application of vector model of atom</p> <p> 1.16.1 Fine structure of hydrogen lines</p> <p> 1.16.2 Doublet structure of alkali spectrum (Fine structure of</p>

<p>of LSJ.</p> <ul style="list-style-type: none"> • Discuss selection rule for LSJ. • Solve numerical problems related to above topics. 	<p>sodium D-lines)</p> <p>1.17 Optical spectra</p> <ul style="list-style-type: none"> - Spectral notation - Selection rule
<ul style="list-style-type: none"> • Define Zeeman Effect and describe experimental arrangement of Normal Zeeman effect. • Discuss the classical theory of Normal Zeeman effect for one electron system. • Explain the occurrence of Zeeman effect. • Discuss quantum mechanical theory of Normal Zeeman effect with the calculation of frequency. • Describe quantum theory of Anomalous Zeeman effect. • Describe briefly the Stark effect. • Discuss the hyperfine structure. • Solve numerical problems related to <ul style="list-style-type: none"> - Zeeman effect 	<p>Unit II: Effect of magnetic and electric field on spectral lines (5)</p> <p>2.1 Zeeman effect</p> <p>2.1.1 Normal Zeeman effect for one electron system (Classical and quantum theory both)</p> <p>2.1.2 Anomalous Zeeman effect for one electron system (Quantum theory only)</p> <p>2.2 Lande splitting factor</p>

<ul style="list-style-type: none"> • Explain the X-ray spectrum. • Describe the theory of Continuous X-ray spectrum with its origin and peculiarities. • Discuss the theory of characteristic of X-ray spectrum with its origin and peculiarities. • State and explain Mosley's law. • Describe the applications, importance and conclusions of Mosley's law. • Explain the absorption of X-rays and calculate the relation of intensity of X-rays. • Discuss Compton scattering of X-rays with mathematical treatment. • Solve numerical problems related to <ul style="list-style-type: none"> - Absorption of X-rays - Compton scattering of X-rays. 	<p>Units III: Characteristics of X-ray spectrum (4)</p> <p>3.1 X-ray spectra</p> <p>3.1.1 Continuous X-ray spectrum</p> <p>3.1.2 Characteristic of X-ray spectrum</p> <p>3.3 Mosley's law and its applications</p> <p>3.4 Absorption of X-rays</p> <p>3.5 Compton scattering of X-rays</p>
<ul style="list-style-type: none"> • Explain theory of nuclear composition as proton-electron theory and its failure. • Discuss nuclear size, nuclear spin, magnetic moment, mass, charge, and density. • Explain proton-neutron theory along with merits. • Explain general properties/qualitative facts about nucleus as mass, charge density magnetic and electric properties of nucleus. • Discuss the nuclear force and their properties as, short range, charge independent, saturation properties. • Explain the parameters and terms related to nucleus that describes the nuclear forces and their properties. 	<p>Unit IV: Constituents of the nucleus (4)</p> <p>4.1 Theories of nuclear composition</p> <p>4 .1.1 Proton–electron theory and its failure</p> <p>4.1.2 Proton–neutron theory</p> <p>4.2 Qualitative facts about nucleus as nuclear size, nuclear spin, mass, charge, and density</p> <p>4.3 Nuclear forces and their properties</p> <p>4.4 Positive rays</p> <p>4.4.1 Positive ray analysis and existence of Isotopes</p> <ul style="list-style-type: none"> • Aston's mass spectrograph • Bainbridge's mass spectrograph

<ul style="list-style-type: none"> • Describe positive rays with their properties. • Explain positive ray analysis and existence of Isotopes by following two methods: <ul style="list-style-type: none"> - Aston's mass spectrograph with its advantages and limitations. - Bainbridge's mass spectrograph with its advantages and limitations. • Solve numerical problems related to above topics. 	
<ul style="list-style-type: none"> • Discuss radioactivity. • Review the theory of radioactive disintegration. • Describe the laws of successive radioactive transformations. • Discuss radioactive equilibrium. • Discuss radioactive dating by decay and the biological effects of nuclear radiations. • Define the units of radioactivity. • Discuss alpha spectra. • Describe absorption of α-particles, range, straggling and stopping power. • Explain physical significance of Gamow's theory of alpha decay (no derivation is required). • Discuss beta spectra and the neutrino theory of beta decay. • Discuss gamma ray spectra, origin of γ-rays and nuclear isomerism. • Solve numerical problems related to Alpha/Beta spectra radioactive dating. 	<p>Unit V: Radioactivity (4)</p> <p>5.1 Review of the theory of radioactive disintegration</p> <p>5.2 Law of successive radioactive transformations</p> <p>5.3 Radioactive equilibrium</p> <p>5.4 Radioactive dating: the age of the earth</p> <p>5.5 Units of radioactivity</p> <p>5.6 Absorption of α-particles, range, straggling and stopping power</p> <p>5.7 Gamow's theory of alpha decay</p> <p>5.8 Neutrino hypothesis of β-decay</p>
<ul style="list-style-type: none"> • Explain Gamma radiation and its decay. • Discuss the conversion laws in γ- rays emission. • Explain the term 'Nuclear Isomerism'. 	<p>Units VI: Interaction of nuclear radiation with matter (4)</p> <p>6.1 Gamma radiation and γ-decay</p> <p>6.2 Nuclear Isomerism</p> <p>6.3 Mossbauer effect</p>

<ul style="list-style-type: none"> • Discuss Mossbauer effect. • Describe interaction of Gamma rays with matter. • Explain the theory of absorption of Gamma rays. • Introduce the term 'Absorption coefficient' and 'half value thickness'. • Discuss the measurement of absorption of Gamma rays. • Explain pair production. • Describe Dirac's theory of Pair production. • Solve numerical problems related to above topics. 	<p>6.4 Interaction of γ-rays with matter</p> <p>6.4.1 Absorption of γ-rays</p> <p>6.4.1.1 Absorption coefficient</p> <p>6.4.1.2 Half value thickness</p> <p>6.4.1.3 Absorption measurement</p> <p>6.4.2 Pair production</p> <p>6.4.2.1 Dirac's theory of Pair production</p>
<ul style="list-style-type: none"> • Discuss the nuclear detector and their types. • Describe the working of Scintillation counters and Cerenkov counter and its uses. • Discuss the working of Linear accelerator, Cyclotron and Betatron with their uses. • Solve numerical problems related to Cerenkov counter, Linear accelerator, Cyclotron and Betatron. 	<p>Unit VII: Nuclear detectors and particle accelerators (2)</p> <p>7.1 Nuclear detector- Cerenkov counter</p> <p>7.2 Particle accelerator</p> <ul style="list-style-type: none"> - Linear accelerator - Cyclotron - Betatron
<ul style="list-style-type: none"> • Classify the elementary particles according to <ul style="list-style-type: none"> - Baryon number - Lepton number - Strangeness number - Hypercharge - Isospin and isospin quantum number • Explain the composition of hadrons according to the quark model. 	<p>Unit VIII: Elementary particles and quantum numbers (2)</p> <p>8.1 The elementary particles</p> <ul style="list-style-type: none"> - Baryon number - Lepton number - Strangeness number - Hypercharge - Isospin and isospin quantum number <p>8.2 Quark model</p>

Note: The figures in the parentheses indicate the appropriate teaching hours for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

S.N.	Units	Title	General Instructional techniques	Specific Instructional techniques	Remarks
1.	I	Atomic theory and atomic model	Lecture, power point presentation	Audio visual (Animated videos)	
2.	II	Effect of magnetic and electric field on spectral lines	Discussion, power point presentation	Audio visual methods, demonstration, experimentation	
3.	III	Characteristics of X-ray Spectrum	Lecture, discussion, power point presentation	Demonstration, experimentation, field visit	
4.	IV	Constituents of the nucleus	Lecture, power point presentation	ICTs based methods	
5.	V	Radioactivity	Discussion, power point presentation	Web surfing, report presentation	
6.	VI	Interaction of nuclear radiation with matter	Lecture, discussion	Induction, deduction, problem solving, field visit	

7.	VII	Nuclear detectors and particle accelerators	Power point presentation, charts discussion	Demonstration, experimentation	
8.	VIII	Elementary particles and quantum numbers	Lecture, discussion	Web surfing, report writing	

5. Evaluation

5.1 Evaluation (Internal Assessment and External Examination)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25	40	65

Note: Students must pass separately in internal assessment and semester examination.

5.1.1. Internal Evaluation

25 Marks

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance and participation in learning activities	5
2. First assignment (written assignment)	5
3. Second assignment (report writing and presentation)	5
4. Third assignment/ Term exam	10
Total	25

Note: First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

5.1.2. External Evaluation (Final Examination)

40 Marks

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be:

3. Objective questions (Multiple Choice Questions 10 x 1mark)	10
4. Subjective short questions (6 questions with 2 'OR 'questions 6x 5 marks)	30
Total	40

7. Recommended Books and References

Recommended Books

Rajam J. B. (2012), *Atomic Physics*: S. Chand and company Ltd.: New Delhi.

(For Units - I, II & III)

Murugeshan, R. & Sivaprasath, K. (2012), *Modern Physics*: S. Chand & Company

Ltd: New Delhi. (For Units -IV, V & VII)

References

White, H. E. (1934). *Introduction to Atomic Spectra*. New York: McGraw-Hill Book Company

Kompanyets A.S. (2003), *Theoretical Physics*: Dover Publication: New York

Beiser, Mahajan, A.S. & Choudhury, S.R. (2005), Concepts of Modern Physics

(2nded.): McGraw Hill Education (India) Private Limited: New Delhi.

Kaplan, I. (2009). *Nuclear Physics*, (2nd ed.): Oxford & IBH Publishing Co. Pvt. LTD.

Srivastava, B.N. (2009), *Basic Nuclear Physics*, (8th ed.): Pragati Prakashan.

Phy. Ed. 517: Atomic and Nuclear Physics (Practical)

Course No.	: Phy. Ed. 517 (P)	Nature of the course: Practical
Level	: M. Ed. in Physics	Credit hour: 1
Semester	: First	Teaching hours: 48*
Period per week: 3pds/day/week/gr(P) **		

1. Course Introduction

This course includes practical works from the **Atomic and Nuclear Physics**. The aim of this course is to develop knowledge and skills required to conduct physics practical classes at Secondary level, Bachelor's level and Master's level of Science Education. This course helps to enhance the research skills in the field of physics.

2. General Objectives

The general objectives of the course are as follows:

- To equip students with sufficient practical knowledge and skills of Atomic and Nuclear Physics
- To handle the equipment related to radiation detectors
- To find the value of physical constant used in atomic and nuclear physics

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Study the working of fine beam tube (Magnetron tube) for the determination of the specific charge of an electron.• Determine the electronic charge by using Millikan's experiment.• Estimate Planck's constant by using photoelectric effect.• Determine the lattice constant in the crystal of NaCl and wavelength of the given X-ray by using Bragg's Spectrometer.• Find the value of Planck's constant and photo	<p>I) Atomic Physics (24 pds.)</p> <ul style="list-style-type: none">1. $\frac{e}{m}$ of electron2. Charge of an electron3. Lattice constant and Wavelength of given radiation4. Photoelectric effect and Photo Cell

electric work function of the material of the cathode using a photo electric cell.	
<ul style="list-style-type: none"> • Determine the half-life and mean life of the radioactive source. • Use ^{90}Sr and ^{213}Po β-sources (or, any two β-sources) and compare their activities using aluminum absorber and GM tube. • Study the absorption of β-particle by material to estimate the end-point energy of the β-particle. • Study the absorption of γ-ray by the material of lead to determine its linear absorption coefficient, μ. • Draw the plateau curve and Threshold voltage of a given Geiger Muller counter. • Study the working of magnetron for the determination of the specific charge of an electron. 	II) Nuclear Physics (24 pds) 1. Radioactivity 2. Interaction of nuclear radiation with matter 3. Nuclear detectors 4. Particle accelerators

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Techniques

- Demonstration
- Discussion
- Inquiry
- Project works
- Collaborative works
- ICT Based teaching

4.2 Specific Instructional Techniques/Activities

- Internet surfing
- Develop manuscript by collaboration and discussion
- Workshops: Presentation, participatory activities

- Books and article review
- Field visit preparation of charts, models, presentations slides, and reports
- Teachers may decide the project work related to the course work.

5. Evaluation **35 Marks**

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15	20	35

5.1 Internal Evaluation **15 Marks**

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5
2.	Students' portfolios (Record book, and Book and article review etc.)	5
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5
	Total	15

5.2 External Evaluation **20 Marks**

Marks distribution for practical external evaluation will be as following.

1.	Experiment / project work report and presentation / study reports	15
2.	Viva-voce	5
	Total	20

Note:

Students must pass both in internal as well as external assessment of practical examination.

** Practical teaching hours will be 3 times more than teaching hours of theory (3x 16 = 48 hours)*

***A group consists of 15 students, and one teacher will be assigned for a group.*

****Construction of models, charts, teaching aids, develop concept map etc. Also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.*

6. Recommended Books

Harman, S. & Hemne, P.S. (2011), *B.Sc. Practical Physics*. S. Chand & Co. Ltd.: New Delhi.

Sharma, Singh, Prasad (2008), *Degree level Practical Physics*. Bharati Bhawan Publication:
Patana.

Arora, C.L. (2012), *B.Sc. Practical*; S Chand and Co.: New Delhi.

Phy. Ed 518: Solid State and Nanotechnology

Course No.: Phy. Ed 518 (T)	Nature of the course: Theoretical
Level: M. Ed. in Physics	Credit hours: 2
Semester: First	Teaching hours: 32
	Periods/week: 2

1. Course Introduction

This course is designed to acquaint the students with the knowledge and skills on “**Solid State and Nanotechnology**”. This course consists of theoretical section including types and structure of crystals, crystal structure from diffraction, crystal binding defects in crystals, lattice dynamics, superconductivity and nanotechnology. This course also provides the theoretical background for practical and research works.

2. General Objectives

The general objectives of this course are as follows:

- To acquaint the students with the crystalline nature of solid and its different types
- To familiarize the students with various properties and parameters of solid
- To enable the students to calculate parameters of solid and make some of those parameters with the required level from their application point of view
- To equip the students with problem solving skills in solid state physics and nanotechnology
- To familiarize students with various activities related to type, properties and application of material in solid state and nanotechnology

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Define and explain the lattice, lattice translational vector, lattice constant, basis and their relation. • Discuss the primitive lattice cell. • Explain crystalline nature of following lattices: <ul style="list-style-type: none"> a. Two dimensional lattices: oblique, rectangular primitive, rectangular centered, square, hexagonal (just relation between lattice constants and the angles between them) b. Three dimensional Bravais lattices: triclinic, monoclinic, orthorhombic, tetragonal, cubic, hexagonal, trigonal (just relation between lattice constants and the angles between them) • Define and Explain Miller indices and calculate the Miller indices of different planes of SC, FCC and BCC lattices. • Solve some numerical problems on related topics. • Establish the formula to find the inter-planar spacing. 	<p>Unit I: Types and structure of crystals (5Pds)</p> <p>1.1 lattice, lattice translational vector, basis and crystal structure</p> <p>1.2 Primitive lattice cell</p> <p>1.3 Fundamental types of lattices</p> <p>1.3.1 Two dimensional lattices (5 types)</p> <p>1.3.2 Three dimensional lattices (Bravais Lattices) (7 types)</p> <p>1.4 Miller indices simple crystal structures –</p> <p>a. Simple Cubic (SC)</p> <p>b. Face-Centered Cubic (FCC)</p> <p>c. Body-Centered Cubic (BCC)</p> <p>1.5 Spacing between three-dimensional lattice planes</p>
<ul style="list-style-type: none"> • Define and Explain diffraction phenomenon and uses of it to know the crystal structure. • Describe the diffraction planes in crystal using Bragg's law, Laue method. • Explain the reciprocal lattice and reciprocal lattice vectors with its properties. 	<p>Unit II: Crystal structure from Diffraction (5Pds)</p> <p>2.1 X-ray diffraction techniques for studying crystal structure</p> <p>2.2 Bragg's law</p>

<ul style="list-style-type: none"> • Discuss Brillouin zone (in brief). • Explain the conversion of reciprocal lattice to different cubic lattices. • Define atomic form factor. Established an expression for it and mentions its significance. • Solve some numerical problems on related topics. 	<p>2.3 Laue method</p> <p>2.4 Reciprocal lattice.</p> <p>2.4.1 Reciprocal lattice vectors.</p> <p>2.4.2 Properties of reciprocal lattice.</p> <p>2.4.3 Brillouin zone.</p> <p>2.5 Conversion of reciprocal lattice to different simple cubic lattices</p> <p>2.6 Atomic Form Factor</p>
<ul style="list-style-type: none"> • Introduce crystal binding. • Establish Vander Waals London Interaction. • State and explain repulsive interaction with potential energy of two atomic separation. • State and explain Cohesive energy by writing concerned formula. • Discuss briefly about ionic bond, covalent bond, metallic bond, Vander wall bond and hydrogen bond. • Explain the defects or imperfections on crystal. • Describe the following point defects: <ul style="list-style-type: none"> a) Vacancies b) Interstitialcies c) Impurities d) Electronic defects • Explain Schottky and Frenkel vacancies. • Discuss the mechanism of atomic diffusion through solids. • Describe following types of Line defect: <ul style="list-style-type: none"> a) Edge dislocation. b) Screw dislocation. 	<p>Unit III: Crystal Binding and Defects in crystals (7Pds)</p> <p>3.1 Crystal binding</p> <p>3.2 Vander Waals and London Interaction.</p> <p>3.3 Repulsive Interaction</p> <p>3.4 Cohesive Energy</p> <p>3.5 Bond between atoms and molecules</p> <p>3.6 Classification of Crystal Imperfections (or Defects).3.7 2 Point defects</p> <p>a) Vacancies</p> <p>b) Interstitialcies</p> <p>c) Impurities</p> <p>d) Electronic defects</p> <p>3.8 Diffusion through solids</p> <p>3.9 Line defects</p> <p>a) Edge dislocation</p> <p>b) Screw dislocation</p>

<ul style="list-style-type: none"> Differentiate between Edge and Screw Dislocation. Describe briefly dislocation and crystal growth. 	c) Dislocation and crystal growth
<ul style="list-style-type: none"> Discuss the quantization of lattice vibrations. Explain inelastic scattering of neutrons by phonons. Discuss the lattice specific heat capacity of solids using Einstein theory and Debye's theory. Solve some numerical problems on related topics. 	Unit IV: Lattice dynamics (5Pds) <p>4.1 Lattice vibration</p> <p>4.1.1 Vibrations of monoatomic linear lattice</p> <p>4.2 Phonon spectrum</p> <p>4.2.1 Quantization of lattice vibrations</p> <p>4.2.2 Inelastic scattering of neutron by phonons</p> <p>4.3 Lattice specific heat</p> <p>4.3.1 Einstein theory</p> <p>4.3.2 Debye's theory</p>
<ul style="list-style-type: none"> Explain superconductivity and causes of it. Describe dependence of superconductivity in temperature and magnetic field. Discuss Meissner effect. Classify Superconductors with their characteristics. Give a brief introduction of superconductivity at high temperature. Explain the applications of superconductivity. 	Unit V: Superconductivity (5Pds) <p>5.1 Introduction</p> <p>5.2 Effect of temperature</p> <p>5.3 Effect of magnetic field</p> <p>5.3.1 Meissner effect</p> <p>5.4 Types of superconductors</p> <p>5.5 The BCS theory</p> <p>5.6 Cooper pair</p> <p>5.7 Superconductivity at high temperature</p> <p>5.8 Applications of superconductivity</p>

<ul style="list-style-type: none"> • Explain and define Nano science and nanotechnology and their history. • Explain and define nanomaterial and their use as carbon nanotubes etc. • Explain the working principle of STM and AFM • Discuss the applications of nanotechnology in various fields such as medicine, technology as Nano computer, DNA computer and in daily life. • Describe top-down and bottom-up approaches for synthesis of Nanomaterials. 	<p>Unit VI: Nanotechnology (5Pds)</p> <p>6.1 Introduction to Nano science and technology</p> <p>6.2 Origin of Nano science, nanomaterial, Carbon nanomaterial, nanotube etc</p> <p>6.3 Scanning Tunneling Microscope (STM) and Atomic Force Microscope (AFM)</p> <p>6.4 Application of nanotechnology and its potential</p> <p>6.5 Synthesis of Nanomaterials</p>
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Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

S.N.	Units	Topics	General Instructional techniques	Specific Instructional techniques	Remarks
1.	I	Types and structure of crystals	Discussion, power point presentation	Preparing charts and models, audio visual teaching	
2.	II	Crystal structure from diffraction	Discussion, book review	Collaborative works, project works, web surfing, experimentation	
3.	III	Crystal Binding and Defects in crystals	Lecture, demonstration	Assignment, project works, power point presentation	

4.	IV	Lattice dynamics	Lecture, power point presentation	Web surfing, induction, deduction	
5.	V	Superconductivity	Lecture, discussion	Audio visual, field trip, report writing	
6.	VI	Nanotechnology	Discussion, power point presentation	Project works, report writing	

5. Evaluation

5.1 Evaluation (Internal Assessment and External Examination)

Nature of course	Internal assessment	Semester examination	Total marks
Theory	25	40	65

Note: Students must pass separately in internal assessment and semester examination.

5.1.1. Internal Evaluation 25 Marks

Internal evaluation will be conducted by course teacher based on the following activities:

1.	Attendance and participation in learning activities	5
2.	First assignment (written assignment)	5
3.	Second assignment (report writing and presentation)	5
4.	Third assignment/ Term exam	10
<hr/>		25

Note: First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc.; and third assignment will be term exam.

5.1.2. External Evaluation (Final Examination) 40 Marks

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of semester. The marks distribution will be

1. Objective questions (Multiple Choice Questions 10 x 1 mark)	10
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2. Subjective short questions (6 questions with 2 'OR 'questions x 5 marks)	30
Total	40

6. Recommended Books and References

Recommended Books

Kittel, C. (1996), *Introduction to Solid State Physics*, (7th ed.) John Wiley India Pvt. Ltd.: New Delhi
(For Units -I, II, III, IV, &V)

Murugeshan, R. and Sivaprasath, K. (2012), *Modern Physics*. S. Chand and Company Ltd: New Delhi. (For Unit -VI)

References

Ashcroft, N., & Mermin, N. (1976). *Solid State Physics*. New York: Holt Rinehart and Winston.

Dekker, A. (1965). *Solid State Physics*. Printice Hall.

Elliot, R., & Gibson, A. (1974). *An Introduction to solid state Physics and its Application*. London: Macmillan.

Hall, H. (1974). *Solid State Physics*. Canada: John Wiley & Sons.

Ibach, H., & Luth, H. (1991). *Solid State Physics*. New Delhi: Narosa Publishing House Macmillan Publishers India Ltd.

Kachhava (2011), *Solid State Physics*, Tata McGrawHill Publishing co. Ltd.

Keer (2008),*Principle of Solid State*:Wiley Eastern Ltd.

Kittel, C. (1996). *Introduction to Solid State Physics (7th edition)*. New Delhi: John Wiley India Pvt. Ltd.

Kompanyets, A.S. (2003), *Theoretical Physics*, Dover Publication: New york

Hall, H.E. (2008),*Solid State Physics*,:E.L.B.S

Pillai, S. (2012). *Solid State Physics*. New Delhi: New age international pvt. Ltd.

Saxena, A. K. (2010). *Solid State Physics: An Introduction to Solid State Electronic Devices*. New Delhi: Macmillan India Limited.

Saxena Gupta & Saxena (2008), *Fundamental of Solid-State Physics*: Pragati Prakashan.

- Singhal R.L. (1993), *Solid State Physics*, (6th ed.): Kedar Nath Ram Nath Co.Meerut
- Srivastava, J. (2001). *Elements of Solid State Physics*. New Delhi: Prentice Hall of India Pvt. Ltd.
- Walter, A. H. (1970). *Solid State Theory*. New York: Curier Dover Publication, Inc.
- Ziman, J. (1979). *Principles of Theory of Solids*. Cambridge: Cambridge University Press.

Phy. Ed. 518 : Solid State and Nanotechnology (Practical)

Course No.	: Phy. Ed. 518 (P)	Nature of the course: Practical
Level	: M. Ed. in Physics	Credit hour: 1
Semester	: First	Teaching hours: 48*
Period per week: 3 pds/day/week/gr(P) **		

1. Course Introduction

This course is designed to acquaint the students with the knowledge and skills on **Solid State and Nanotechnology**. It consists of only Practical part which helps the students to acquire the knowledge and scientific skills to conduct Physics practical classes at higher level of science education. It also provides the foundation for new inventions.

2. General Objectives

General objectives of this course are as follows:

- To acquire the students with sufficient practical knowledge of Solid State and Nanotechnology.
- To operate the equipment concerned with theory of solid.
- To make the students able to identify the correlation between theory and experiment.
- To make the students understand the general concept on theory of nanotechnology.

3. Specific Objectives and Contents

Specific objectives	Contents (48 pds)
<ul style="list-style-type: none"> • Estimate the band gap of semiconductor using leakage current method. • Find the resistivity of semiconductor using four probe methods. • Study the Hall effect for the determination of Hall coefficients of N-type and P-type materials. • Study the variation of resistance and band gap of the given semiconducting material with temperature. • Estimate the error in R_o and R_g by plotting graph of $\ln(1/R)$ versus $1/T$. • Study the crystal structure of an element and prepare the report for simple cubic, Body Center Cubic (BCC) and Face Center Cubic (FCC). • Study the density and atomic concentration of an element and prepare the report. • Draw the diagram of three-dimensional lattice types and explain it. • Construct the first Brillouin Zone in one dimension and two dimensions. • Construct the Brillouin zones of Face Center Cubic Lattice. • Construct the Brillouin Zones of Body Center Cubic Lattice. • Prepare the report of crystal structure of the element using periodic table. • Prepare the project report concerning 	<p>(I). Semiconductor</p> <ol style="list-style-type: none"> 1. Band gap of Semiconductor 2. Resistivity of semiconductor 3. Hall Effect and its coefficient 4. Variation of resistance and band gap of Semiconductor with temperature 5. Crystal structure of an element 6. Density and atomic concentration of an element 7. Diagram of three-dimensional lattice type. 8. First Brillouin Zone <ul style="list-style-type: none"> - BCC, FCC <p>(II). Project report</p>

introduction, history and practical application of nanotechnology.	
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4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1. General Techniques

- Demonstration
- Discussion
- Inquiry
- Project works
- Collaborative works
- ICT based teaching

4.2. Specific Instructional Techniques/Activities

- Internet surfing
- Develop manuscript by collaboration and discussion
- Workshops: Presentation, participatory activities
- Books and article review
- Field visit, preparation of charts, models, presentations slides, and reports
- Teachers may decide the project work related to the course work.

6. Evaluation

35 Marks

Nature of course	Internal evaluation	External evaluation	Total marks
Practical	15	20	35

5.1 Internal Evaluation

15 Marks

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5
2.	Students' portfolios (Record book and Books and article review etc.)	5

3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5
	Total	15

5.2 External Evaluation

20 Marks

Marks distribution for practical external evaluation will be as following.

1.	Experiment / project work report and presentation / study reports	15
2.	Viva-voce	5
	Total	20

Note:

Students must pass both in the internal as well as external assessment of practical examination

** Practical teaching hours is 3 times more than teaching hours of theory (3x 16 = 48 hours)*

***A group consists of 15 students and one teacher will be assigned for a group.*

****Construction of models, charts, teaching aids, develop concept map etc.; also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.*

6. Recommended Books:

Singh Harman & Dr. Hemne, P.S. (2011), *B.Sc. Practical Physics*. S. Chand & Co. Ltd., New Delhi.

Sharma, Singh, Prasad (2008), *Degree Level Practical Physics*. Bharati Bhawan Pub.; Patana.

Kittel, C. (1996), *Introduction to Solid State Physics*, (7th ed). John Wiley India Pvt. Ltd.: New Delhi

Political Science Education

- i. Pol.Sc. Ed. 515: Political Theory
- ii. Pol.Sc.Ed. 516: Political Analysis 1
- iii. Pol.Sc. Ed. 517: Political Thought 1
- iv. Pol. Sc. Ed. 518: International Politics

Pol.Sc. Ed. 515: Political Theory

Course No.: Pol.Sc.Ed. 515

Level: M.Ed.

Semester: First

Nature of course: Theoretical

Credit hours: 3

Teaching hours: 48

1. Course Introduction

This course is designed for the students of M. Ed. first semester in Political Science Education. It includes intensive studies of the selected theories of political science such as Individualism, Utilitarianism, Idealism, Socialism, Fabianism, Syndicalism, Guild socialism, Anarchism, Communism, Fascism and Nazism, Political pluralism, Nationalism, Imperialism, and Internationalism.

2. General Objectives

The general objectives of this course are as follows:

- To provide the students with in-depth knowledge of the nature of political theories
- To enable the students in explaining the notion and features of different political theories such as Individualism, Utilitarianism, Idealism, Socialism, Fabianism, Syndicalism, Guild socialism, Anarchism, Communism, Fascism and Nazism, Political pluralism, Nationalism, Imperialism, and Internationalism.
- To make the students able to evaluate the contributions of different political theories.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none"> • Describe the meaning and development of individualism • Examine the various reasons in favour of individualism • State the concept of existentialism • Contrast individualism with collectivism • Evaluate individualism critically 	Unit I: Individualism 6 1.1 Meaning and development 1.2 Reasons for individualism <ul style="list-style-type: none"> 1.2.1 Economic 1.2.2 Philosophical 1.2.3 Biological 1.2.4 Historical 1.2.5 Moral 1.3 Concept of existentialism 1.4 Individualism vs. collectivism 1.5 Critical appraisal of individualism
<ul style="list-style-type: none"> • Present the meaning and origin of utilitarianism • Explain the principles of utilitarianism • Assess utilitarianism 	Unit II: Utilitarianism 5 2.1 Meaning and origin 2.2 Principles of utilitarianism 2.3 Critical appraisal of utilitarianism
<ul style="list-style-type: none"> • Describe idealism, present its origin and growth • Classify idealism • Critically analyze idealism 	Unit III: Idealism 5 3.1 Meaning and genesis 3.2 Types <ul style="list-style-type: none"> 3.2.1 Aggressive and 3.2.2 Moderate 3.3 Critical appraisal of idealism
<ul style="list-style-type: none"> • Narrate, discuss the concept and growth of socialism • Analyze state socialism, democratic socialism, fabianism, syndicalism, and guild socialism • Appraise socialism critically 	Unit IV: Socialism 8 4.1 Concept and growth 4.2 Types <ul style="list-style-type: none"> 4.2.1 State Socialism 4.2.2 Democratic Socialism 4.2.3 Fabianism 4.2.4 Syndicalism 4.2.5 Guild Socialism 4.3 Critical appraisal of the aforementioned types

	of socialism
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<ul style="list-style-type: none"> • Present the meaning, origin, and growth of anarchism • Explain the principles of anarchism • Examine the methods of anarchists • Critically appraise anarchism 	Unit V: Anarchism 4 5.1 Meaning and genesis 5.2 Principles 5.3 Methods of Anarchists 5.4 Critical appraisal of anarchism
<ul style="list-style-type: none"> • Reveal the meaning, origin, and growth of communism • Explain the salient features of communism • Examine the benefits and drawbacks of communism 	Unit VI: Communism 7 6.1 Meaning and genesis 6.2 Salient features 6.3 Benefits and drawbacks
<ul style="list-style-type: none"> • Present the causes of origin and rise of fascism and nazism • Elaborate the principles of fascism and nazism • Annotate the impact of fascism and nazism on the then society and at present 	Unit VII: Fascism and Nazism 3 7.1 Origin and rise 7.2 Principles 7.3 Impact of fascism and nazism: Past and present
<ul style="list-style-type: none"> • Describe the concept and goal of pluralism • Compare monism and pluralism • Classify t pluralism • Examine the factors that are responsible for the origin and growth of pluralism • List the salient features of political pluralism 	Unit VIII: Political Pluralism 3 8.1 Concept and goal of pluralism 8.2 Monism vs. pluralism 8.3 Types of pluralism 8.4 Factors responsible for the growth of pluralism 8.5 Salient features
<ul style="list-style-type: none"> • Describe the concept of nationalism and its elements • Differentiate among various types of nationalism • Present the basic concepts and assess the reasons for imperialism and colonialism • Critically analyze new imperialism and neo-colonialism • State the concept of internationalism and trace out its development • Enlighten the advantage of internationalism 	Unit IX: Nationalism, Imperialism and Internationalism 7 9.1 Concept and elements of nationalism 9.2 Types of nationalism 9.3 Concept and reasons of imperialism and colonialism 9.4 New imperialism or neo-colonialism 9.5 Concept of internationalism and its development 9.6 Advantage of internationalism

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Instructional Techniques

- Lecture
- Discussion
- Question-answer
- Critical thinking strategies
- Interaction
- Self-study

4.2 Specific Instructional Techniques

- Unit 2: Project work
- Unit 6: Self-study
- Unit 9: Seminar

5. Evaluation

5.1 Internal Evaluation (40%)

Internal evaluation will be conducted by the course teacher based on the following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) (60%)

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester.

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective type question (Multiple choice)	10×1	10
2.	Short answer questions (6 with 2 or questions \times 5 points)	6×5	30
3.	Long answer questions (2 with one or questions \times 10 points)	2×10	20
	Total		60

6. Prescribed Books

Mahajan V. D, (2005). *Political theory*. New Delhi.

Baradet, L. P. (2013). *Political ideologies their origins and impact*. PHL Learning Pvt. Ltd.

Srivastava, S. (2012). *An introduction to political ideologies*. New Delhi, Chennai, Chandigarh: Pearson

Hacker, A. (2006). *Political theory: philosophy, ideology, science*. Delhi: Surjeet Publications

Wanless, L.C. (2001). *Gettell's history of political thought*. Delhi: Surjeet Publications

Maxey, C.C. (2011). *Political philosophies*. Delhi: Surjeet Publications

Mahajan V.D. (2012). *Political theory*. New Delhi: S. Chand and company

Asirvatham E. & Mishra K.K. (2012). *Political theory*. New Delhi: S. Chand and Company Ltd.

Agrawal, R.C. (2012). *Political theory (Principles of political science)*. New Delhi: S. Chand and Company Ltd.

7. Reference Books

Wasserman, L. (1972). *Modern political philosophies and what they mean*. Philadelphia: New Home Library

Suda J. P. (1995). *A history of political thought*. Garh Road Meerut: K. Nath and Co. Vol, III.

Suda J. P. (1995). *A history of political thought*. Garh Road Meerut: K. Nath and Co. Vol, IV

Pol.Sc.Ed. 516: Political Analysis 1

Course No.: Pol.Sc.Ed. 516

Level: M.Ed.

Semester: First

Nature of course: Theoretical

Credit hours: 3

Teaching hours: 48

1. Course Introduction :

This course is designed to provide the students with in-depth knowledge in the selected theories of Political Analysis. It also intends to help them to critically explain various methods and approaches of political analysis as well as the relation of Political Science with major social sciences.

2. General Objectives:

The general objectives of this course are as follows:

- To guide the students to analyze traditional and modern methods and approaches of political analysis
- To help the students analyze the relations of Political Science with major social sciences
- To enable the students to discuss various theories of analyzing the political system.

3. Specific objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none"> • Analyze the concept, process, and limitations of philosophical, historical, institutional, and legal methods • Explain the concept, characteristics, and limitations of the behavioral and post-behavioral approach • Distinguish between traditional and modern approaches 	Unit I. Methods and Approaches of Political Analysis 12 <ul style="list-style-type: none"> 1.1 Traditional <ul style="list-style-type: none"> 1.1.1. Philosophical 1.1.2. Historical 1.1.3. Institutional 1.1.4. Legal 1.2 Modern Approaches <ul style="list-style-type: none"> 1.2.1. Behavioral 1.2.2. Post-behavioural 1.3 Distinction between a traditional and modern approach
<ul style="list-style-type: none"> • State the relations of political Science with Sociology, Economics, History, Anthropology, and Geography 	Unit II: Relation of Political Science with other Social Sciences 6 <ul style="list-style-type: none"> 1.1 Sociology 1.2 Economics 1.3 Anthropology 1.4 History 1.5 Geography
<ul style="list-style-type: none"> • Explain the concept, origin, growth, and characteristics of general system theory • Examine critically David Easton's theory of general system 	Unit III: System Analysis 6 <ul style="list-style-type: none"> 3.1. General System Theory <ul style="list-style-type: none"> 3.1.1. Concept 3.1.2. Origin and growth 3.1.3. Characteristics 3.2. Critical appraisal of David Easton's Theory of general system
<ul style="list-style-type: none"> • Explain the concepts and structures of input analysis • Analyze the concepts and structures of output analysis • Describe the feedback process • State the role of the environment • Critically evaluate the input-output analysis 	Unit IV: Input-Output Analysis 6 <ul style="list-style-type: none"> 4.1 Input: Concepts and structures 4.2 Output: Concepts and structures 4.3 Feedback process 4.4 Environment 4.5 Critical appraisal

<ul style="list-style-type: none"> • Explain the concepts and types of Function and Structure • Explain the concept of structural substitutability • Evaluate Almond's theory of structural-functional analysis 	<p>Unit V: Structural-Functional Analysis 6</p> <p>5.1 Function: Concepts and types 5.2 Structure: Concepts and types 5.3 Structural substitutability 5.4 Critical appraisal of Almond's theory</p>
<ul style="list-style-type: none"> • Present the concepts of power and influence • Analyze the concepts of value system • State the configurative approach • Describe the decision-making framework • Appraise Laswell's theory of distributive analysis critically 	<p>Unit VI: Distributive Analysis 6</p> <p>6.1 Power and Influence 6.2 Value 6.3 Configurative approach 6.4 Decision-making framework 6.5 Critical appraisal of Laswell's theory</p>
<ul style="list-style-type: none"> • Elucidate the basic concepts inherent in communication theory • Describe the method of analyzing political system • Analyze the feedback process • Examine critically Karl Deutsch's communication theory 	<p>Unit VII: Communication Theory 6</p> <p>7.1 Basic concepts 7.2 Methods of analysis 7.3 Feedback process 7.4 Critical appraisal of Karl Deutsch's theory</p>

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Instructional Techniques

- Lecture
- Discussion
- Question-answer
- Critical thinking strategies
- Interaction
- Self-study

5. Evaluation

5.1 Internal Evaluation (40%)

Internal evaluation will be conducted by the course teacher based on the following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) (60%)

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester.

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective type question (Multiple choice)	10×1	10
2.	Short answer questions (6 with 2 or questions ×	6×5	30

	5 points)		
3.	Long answer questions (2 with one or questions × 10 points)	2×10	20
	Total		60

Recommended Books:

Gandhi, M. G. (Latest edition). *Modern political analysis*. New Delhi: Vikas Publishing House (For Unit I-VI).

Johari, J. C. (Latest edition). *Comparative politics*. New Delhi: Vikas Publishing (For Unit II-Xi).

Almond, G. A. & Powell, G.B. (Latest edition). *Comparative politics- A developmental approach*. New York: Little Brown (For Unit 2, 3, 4, 6, and 7)

Reference Books

Young, O. R. L(1968). *System of political science*. New Jersey: Prentice Hall

Deutch, K. W. (1963). *The nerves of government*. Glencoe: Free Press

Pol.Sc. Ed. 517: Political Thought 1

Course No.: Pol.Sc.Ed. 517

Level: M.Ed.

Semester: First

Nature of course: Theoretical

Credit hours: 3

Teaching hours: 48

1. Course Introduction

This is a theoretical course of Political Science designed to provide the students with in-depth knowledge in the selected political thinkers. It also intends to help students acquaint with the concepts of different thinkers on different topics.

2. General Objectives:

The general objectives of this course are as follows:

- To provide in-depth knowledge of the nature of political thought
- To enable the students in explaining the meaning and features of different political thinkers' thoughts such as Plato, Aristotle, Cicero, Augustine, St. Thomas Aquinas, Dante, Manu, and Kautilya.
- To provide knowledge of the characteristics of Greek polity and medieval polity.
- To make students able in evaluating the contributions of the different political thinker's ideas.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none"> • Explain Plato's life and works • Explicate the concept of the ideal state and its components mentioned by Plato such as justice, philosopher king, education, and communism • Explain the sub-ideal state of Plato • Evaluate the contributions of Plato to the development of the political thought 	Unit I: Plato 10 1.1 Plato's life and works 1.2 Ideal State <ul style="list-style-type: none"> 1.2.1 Justice 1.2.2 Philosopher king 1.2.3 Education 1.2.4 Communism 1.3 Sub ideal state 1.4 Contribution of Plato
<ul style="list-style-type: none"> • Sketch Aristotle's life and works • Appraise Aristotle's views on the state • Explain Aristotle's views on family, property, citizenship, slavery, constitution, and revolution • Examine the views of Aristotle's on the ideal state • Evaluate the contributions of Aristotle to the development of political thought. 	Unit II: Aristotle 10 2.1 Aristotle's life and works 2.2 Aristotle's theory of state 2.3 Aristotle's views on <ul style="list-style-type: none"> 2.3.1 Family 2.3.2 Property 2.3.3 Citizenship 2.3.4 Slavery 2.3.5 Constitution 2.3.6 Revolution 2.3.7 Ideal state 2.4 Contributions
<ul style="list-style-type: none"> • Describe Greek polity and reflect its characteristics 	Unit III: Greek Polity: Introduction and characteristics 4
<ul style="list-style-type: none"> • Trace out Cicero's life • State the main works of Cicero • Discuss Cicero's concept of state • Explain the classification of government according to Cicero • Analyze Cicero's concept of laws of nature • Evaluate Cicero's contributions 	Unit IV: Cicero 5 4.1 Cicero's life and works 4.2 State 4.3 Classification of government 4.4 The law of nature 4.5 Contributions

<ul style="list-style-type: none"> Describe the medieval polity and identify its characteristics 	Unit V: Medieval Polity: Introduction and characteristics	6
<ul style="list-style-type: none"> State Manu's life and works Examine Manu's view on Raj Dharma 	Unit VI: Manu 6.1 Life and works 6.2 Raj Dharma	6
<ul style="list-style-type: none"> State Kautilay's life and works Synthesize and interpret the Saptanga theory of Kautilya 	Unit VII: Kautilya 7.1 Life and works 7.2 Saptanga theory	7

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Instructional Techniques

- Mini picture
- Lecture
- Discussion
- Question-answer
- Critical thinking strategies
- Interaction
- Self-study

4.2 Specific Instructional Techniques: Besides above-mentioned techniques, the following items are suggested especially for units 1 and 2.

- Assignment
- Report writing
- Presentation

5. Evaluation

5.1 Internal Evaluation (40%)

Internal evaluation will be conducted by the course teacher based on the following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) (60%)

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester.

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective type question (Multiple choice)	10×1	10
2.	Short answer questions (6 with 2 or questions \times 5 points)	6×5	30
3.	Long answer questions (2 with one or questions \times 10 points)	2×10	20

	Total		60
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Recommended Books:

- Haker, A. (2006). *Political theory, philosophy, ideology science*. Delhi: Surjeet Publications.
- Sabine, J. H. (2009). *A History of political theory*. Delhi: Oxford and IBH Publishing Co. Pvt. Ltd.
- Barker, S. R. (2006). *Greek political theory, Plato and his predecessors*. Delhi: Surjeet Publications.
- Mukherjee, S. & Ramaswamy, S (2012). *History of political thought Plato to Marx*. New Delhi: PHL Learning Pvt. Ltd.

References

- Das, P.L. (2013). *History of political thought*. Delhi: New Central Book Agency
- Gokhale, B. K. (2012). *Political science (Theory and governmental machinery)*. Delhi,:Mumbai, Banglore.

Pol. Sc. Ed. 518: International Politics

Course No.: Pol.Sc.Ed. 518

Level: M.Ed.

Semester: First

Nature of course: Theoretical

Credit hours: 3

Teaching hours: 48

1. Course Introduction

This course is designed to impart in students the knowledge of international politics and various aspects related to it. The course includes nature of international politics, theories of international politics, national power, balance of power, disarmament and arm control, and non-aligned movement.

1. General Objectives:

The general objectives of this course are as follows:

- To acquaint the students with the nature and theories of international politics.
- To make the students familiar with the national power and its elements; the balance of power; disarmament and the role of small power in world politics.
- To make students familiar with the purpose and principles of Non-Aligned Movement (NAM) and its role in changing context.

2. Specific Objectives and Contents:

Specific objectives	Contents
<ul style="list-style-type: none">• Explain the concept, nature, and scope of international politics• Describe international relations and foreign policy• Differentiate international politics from international relations and foreign policy.• Analyze the current trends in international relations and foreign policy	Unit I: Nature of international Politics 6 1.1 Concept, nature, and scope of international politics 1.2 International relations and foreign policy 1.3 Current trends in international relations and foreign policy
<ul style="list-style-type: none">• Present the meaning of realist theory.• Describe the six principles of political realism.• State the elements of realism.• Explain the meaning of the international political system.• Lists the characteristics of the international political system.• Classify the International political system.• Describe the meaning of game theory.• State the characteristics of game theory.• Examine the elements of game theory.• Categorize the games in international politics.• Explain the meaning of equilibrium in international politics.• Discuss the importance of equilibrium in international politics.• State different models of equilibrium in international politics.	Unit II: Theories of International Politics 20 2.1 The Realist Theory 2.1.1 Realist theory of international politics 2.1.2 Six principles of political Realism 2.1.3 Elements of Realism 2. 2 The System Theory 2.2.1 Meaning 2.2.2 Characteristics of the International Political System. 2.2.3 Types of international Political systems. 2. 3 Game theory 2.3.1 Meaning 2.3.2 Characteristics 2.3.3 Elements of game theory 2.3.4 Types of game 2.4 Equilibrium theory 2.4.1 Meaning 2.4.2 Importance 2.4.3 Different models of equilibrium

<ul style="list-style-type: none"> • Illuminate the meaning of bargaining theory. • Differentiate among the various types of bargaining • Explain the meaning of the decision-making approach. • Label the assumptions which have to be considered for making a decision. 	2. 5 Bargaining theory 2.5.1 Meaning 2.5.2 Types of bargaining 2. 6 Decision Making Approach 2.6.1 Meaning 2.6.2 Assumptions
<ul style="list-style-type: none"> • Explain the meaning of national power. • Describe the elements of national power. • State the limitations of national power. 	Unit III: National Power 5 3.1 Meaning 3.2 Elements of national power 3.3 Limitations of national power
<ul style="list-style-type: none"> • Explain the meaning of balance of power. • State the characteristics of the balance of power. • Describe the agents of balance of power and explain the efforts for maintaining the balance of power. • Assess the relevance to/of the balance of power. 	Unit IV: Balance of Power 6 4.1 Meaning 4.2 Characteristics 4.3 Agents and methods for maintaining the balance of power. 4.4 Relevance of balance of power system.
<ul style="list-style-type: none"> • State the meaning of small power • Describe the issues raised by small power for maintaining international peace and security. 	Unit V: The role of Small Power in World Politics. 4 5.1 Concept of small power 5.2 Issues raised by small power for maintaining international peace.
<ul style="list-style-type: none"> • Present the notion of disarmament and arms control and distinguish between them • Sketch the history of disarmament and arms control. • Evaluate the disarmament and arms control process critically 	Unit VI: Disarmament and Arms Control 4 6.1 Definition and differences 6.2 History 6.3 Evaluation of disarmament and arms control process
<ul style="list-style-type: none"> • Describe the concept of NAM. • Examine the purpose of NAM and its implication. • Elucidate the present status of NAM. 	Unit VII: Non-Aligned Movement (NAM) 3 7.1 Concept 7.2 Purpose 7.3 Status at present

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Instructional Techniques

- Mini picture
- Lecture
- Discussion
- Question-answer
- Critical thinking strategies
- Interaction

- Self-study

4.2 Specific Instructional Techniques: Besides the above-mentioned techniques, assignment, report writing, and presentation are also suggested especially for units 1 and 2.

5. Evaluation

5.1 Internal Evaluation (40%)

Internal evaluation will be conducted by the course teacher based on the following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) (60%)

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester.

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective type question (Multiple choice)	10×1	10
2.	Short answer questions (6 with 2 or questions $\times 5$ points)	6×5	30
3.	Long answer questions (2 with one or questions $\times 10$ points)	2×10	20
	Total		60

Recommended Books:

Aditya, A. (ed.) (1975). *The political economy of small states*. Kathmandu: NEFAS, FE.

Bruton, J.W. (1971). *International relations: a general theory*. Bombay: George Allen and Unwin Ltd.

Chandra, P. (2007). *International relations: theories and practice of international politics*. Delhi: Kalyani Publishers.

Ghai, K. K. (2007). *International relations theory and practice of international politics*. Delhi: Kalyani publishers.

Goldstein, J. S. (2008). *International relations*. India: Dorling Kindersley.

Holsti, K. J. (1992). *International politics: a framework for analysis*. Delhi: Prentice Hall India Pvt. Ltd.

Johari, J. C. (1985). *International relation and politics: Theoretical perspective*. Delhi: Sterling Publishers Pvt. Ltd.

Karl, W. D. (1978). *The analysis of international relation*. New Delhi: Prentice Hall International.

Morgenthau, H. J. (Revised by Kenneth W. Thompson) (2007). *Politics among nations: the struggle for power and peace*. Delhi: Kalyani publishers.

Reference books:

Malhotra, V. K. (2008). *International relations*. Delhi: Anmol Publications Pvt. Ltd.

Palmer, N. D. and Parkins, H. C. (2007). *International relations*. Delhi: AITBS Publishers.

Population Education

- i. Pop. Ed. 515: Advanced Population Education
- ii. Pop. Ed. 516 : Advanced Demography
- iii. Pop. Ed 517: Demographic Measures and Techniques
- iv. Pop. Ed. 518: Sexual and Reproductive Health Education

Pop. Ed. 515: Advanced Population Education

Course No.: Pop. Ed. 515

Nature of course: Theoretical

Level: M. Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Introduction

This course is designed to acquaint the students with advanced knowledge and understanding of population education. It deals with conceptualization of population education, emergence of population education, nature of population education curriculum and its development process, key determinants of population change, gender perspectives and population education professionalism. This course also empowers the students to work as an expert in designing population education programmes for formal as well as non-formal educational sectors. Furthermore, it enhances students' critical thinking and leadership skills for solving population related problems of the society.

2. General Objectives

The general objectives of this course are to:

- develop a wider understanding of the misconception and reconceptualization of population education and its emergence.
- acquaint the students with developing quality of leadership in critical thinking and expertise in population education.
- acquaint the students with the key determinants of population change.
- equip the students with a better understanding of gender issues and perspectives.
- enable the students to develop a deeper understanding in professionalization, professional qualities and ethics.
- foster the students' moral ethics and responsibilities in solving population-related problems.
- build the capacity in students to apply knowledge in designing population education curriculum.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Analyse concept, misconception and reconceptualization of population education. • Elaborate the basic philosophy and principles of population education, aims, objectives and needs of population education. • Identify and discuss the inception of population education. • Organize a workshop on challenges and opportunities, of population education programme. • Clarify the need of population education programmes. 	<p>Unit I. Introduction to Population Education (8)</p> <p>1.1 Concept, misconceptions and reconceptualization of population education</p> <p>1.2 Need for population education programmes</p> <p>1.3 Aims and objectives of population education</p> <p>1.4 Emergence of population education</p> <p>1.5 Development of population education programmes in Nepal</p> <p>1.6 Challenges and opportunities of population education programmes</p>
<ul style="list-style-type: none"> • Elaborate the components of population education curriculum of schools and campuses. • Discuss the steps and processes of curriculum development in population education. • Examine the curriculum pattern used in population education. • Critically analyse the secondary level (11/12) curriculum with reference to population education programmes, aims and objectives, vertical and horizontal relations, continuity, delivery approaches, evaluation, reference, etc. 	<p>Unit II. Development of Population Education Curriculum (10)</p> <p>2.1 Components of population education curriculum</p> <p>2.2 Process and steps of curriculum development in population education</p> <p>2.3 Curriculum patterns applied in population education</p> <p>2.4 Critical analysis of secondary level (11/12) population education curriculum</p>
<ul style="list-style-type: none"> • List out factors affecting population changes and highlight them with appropriate illustration. 	<p>Unit III. Socio-economic Determinants of Population Change (15)</p> <p>3.1 Health facilities and health services</p> <p>3.2 Morbidity</p> <p>3.3 Child survival</p> <p>3.4 Status of women</p> <p>3.5 Safe motherhood programmes</p> <p>3.6 Senior citizen's status</p> <p>3.7 Migration and urbanization</p>

	<p>3.8 Social values and norms 3.9 Income and occupation 3.10 Education status</p>
<ul style="list-style-type: none"> • Differentiate between gender equality and gender equity. • Explain the concept of women empowerment and its importance. • Examine the issues of girl child and girl child trafficking. • Analyse the consequences of teenage marriage, teenage pregnancy, teenage mother and suggest the measures for promoting the status of girls. • Delineate the types and impacts of gender-based violence and suggest measures to prevent it. • Elucidate the development of sexual and reproductive rights and its perspectives focusing on the promotion of women's status. • Discuss the SDG goal 5 for gender equality. 	<p>Unit IV. Gender Perspectives (10)</p> <p>4.1 Concept of gender, gender equality and gender equity 4.2 Gender and development 4.3 Womens' empowerment 4.4 The girl child issues, girl trafficking and its controlling measures 4.5 Consequences of teenage marriage, teenage pregnancy and teenage mother 4.6 Gender-based violence 4.7 Male responsibilities for reproductive health of women 4.8 Sexual and reproductive rights 4.9 Gender and social justice 4.10 SDG goal 5</p>
<ul style="list-style-type: none"> • Clarify the conceptualization of population education professionals. • Justify the need of professionalism in population education. • Identify and explain the ethics and qualities of population education professionals. • Discuss the roles of organizations for developing population education professionals. 	<p>V: Population Education Professionals (5)</p> <p>5.1 Conceptualization of population education professionals 5.2 Need of professionalism in population education 5.3 Professional ethics and qualities of population educators 5.4 Preparation of professionals in population education.</p>

Note: The figures within the parentheses indicate the approximate teaching hours allocated to respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units.

4.1 General instructional techniques

- Lecture
- Document review
- Discussion
- Collaborative works/learning
- Brainstorming
- Presentation
- Guest speech
- Project work
- Collaborative learning
- Interaction
- Research-based learning activities

4.2 Specific instructional techniques

Unit	Activities and Instructional Techniques
I	<p>Misconception and reconceptualization</p> <ul style="list-style-type: none">• By means of brainstorming the concept and misconception of population education will be clarified.• The students will be distributed the handouts of reconceptualization of population education for study at home. <p>Challenges and opportunities of population education programmes</p> <ul style="list-style-type: none">• The students will be given assignments to prepare independently the challenges of population education programmes of Nepal. The students will be distributed materials after editing their work.• The students will share their views on the challenges of population education programmes.• The teacher will classify the issues and challenges of population education programmes into different areas like problems of curriculum, gap between programmes of FoE and Schools, and elaborate the problems and opportunities of population education programmes.
II	<p>Curriculum development in population education</p> <ul style="list-style-type: none">• The students will be divided into different groups and they will be given assignments to design curriculums in respective areas. For example, 'antenatal care', 'impact of teenage marriage', 'population problems' 'teenage marriage', etc. will be the areas to teach the mother's group women's adult education.• The students will present the designed curriculums followed by discussion.• The students will be given an individual assignment to perform a project work on critical analysis of population education curriculum of different levels such as lower secondary, secondary, higher secondary and Bachelor level based on a set of standard guidelines.

III	Socio-economic determinants of population change <ul style="list-style-type: none"> The students will be given assignments to collect articles related to key determinants of population change and asked to review them based on the given guidelines.
IV	Gender perspectives <ul style="list-style-type: none"> The experts on women empowerment will deliver a lecture on the concept of women empowerment, its situation in Nepal and importance in a discourse programme. The discourse will be opened for discussion and question-answer sessions. The Chairperson / subject teacher will share his/her opinion and conclude the discourse forum. The subject teacher will distribute questions to the students as a home assignment.
V	Population education professionals <ul style="list-style-type: none"> The students will be given an assignment to study the value of professionalism and ethics and qualities of population education professionals and share their views in the class. Its copies will be distributed to students after editing. The students will be assigned to collect the programmes of different governmental and nongovernmental organizations for developing population education professionals. The students will be asked to discuss in their class.

5. Evaluation Schemes

5.1 Internal evaluation (40%)

Internal evaluation will be conducted by the subject teachers based on the following aspects:

S.N	Particulars	Marks
1	Attendance	5
2	Participation in learning activities	5
3	First assessment: Article review/ book review/ open book test/ unit test, etc.	10
4	Second assessment: Midterm test	10
5	Third assessment: Project work/case study/field study/survey/seminar/workshop	10
Total		40

5.2 External evaluation (60%)

Examination Section, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester.

S.N	Types of questions	Marks
1	Objective questions (Multiple choice questions 10x1 mark)	10
2	Short-answer questions (6 questions with 2 OR questions x 5 marks)	30

3	Long-answer questions (2 questions with one OR question x 10 marks)	20
Total		60

6. Recommended Books and References

6.1 Recommended books

- Alberta Education. (2012). *Curriculum development process*. Alberta: Author. Retrieved from http://www.education.alberta.ca/media/6809242/d_chapter1.pdf (For Unit II)
- APEGA. *Concept of professionalism*. Retrieved from <http://www.hva.nl/kenniscentrum-doo/wp> (For Unit V)
- Aryal, T. K. (2011). Trends in ageing dynamic. *Perspectives on Higher Education: Journal of University Campus, 4 & 5*, 172-184. (for Unit III).
- Beasley, C. (2005). *Gender and sexuality*. London: Sage Publication. (For Unit IV)
- CAS *Characteristics of Individual Excellence for Professional ...***
Retrieved. www.cas.edu/wp-content/uploads/2011/.../CASIndividualExcellence.pdf (For Unit IV)
- Chand, S. & Shahi, P. (2012). Health problems faced by teenage pregnant women in Bindhyabasini village development committee in Dailekh. *Journal of Health Promotion*, v-455-58. (for Unit IV)
- ETS. *Preparing teacher around the world: Policy information report*. Retrieved from www.ets.org/Media/Education_Topics/pdf/prepteach.pdf (for Unit V)
- Evans, L. (2008). Professionalism, professionalism and development of educational profession. *British Journal of Educational Studies*, 56 (1), 20-38. Retrieved from <http://eprints.whiterose.ac.uk/4077/> (for Unit V)
- Factors associated with teenage pregnancy in South Asia*. Retrieved from www.hsj.gr/volume4/issue1/402.pdf (for Unit IV)
- FoE. (2059). *Social justice education*. Kirtipur: Author. (for Unit IV).
- Gurung, S. (2010). Social capital and teenage pregnancy in Nepal. *Journal of Health Promotion*, 3, 25-29. (for Unit IV)
- Health of Nepal*. From Wikipedia, the free encyclopedia (for Unit III).
- Human development report 2013: The rise of the South: human progress in a diverse world*. Retrieved www.undp.org/content/nepal/en/home/library/.../undaf-nepal-2013-2017 (for Unit III).
- Institute for Learning. *Professionalism and the role of professional bodies stimulus paper from the institute of learning*. www.ifl.ac.uk/_data/assets/pdf.../ (for Unit V).

- Jioanne, C. (2009). Professional development for teacher educators to help them prepare teacher candidates. *International Journal of Educational Science*, 1(1), 29-47. (for Unit V)
- Kafle, P. P., Pakuryal, K. N., Regmi, R. R & Luintel, S. (2010). Health problems and social consequences in teenage pregnancy in rural Kathmandu Valley. *Nepal Medical Coll. J.*, 12 (1), 42-44. (for Unit III)
- Khader, A.B. Population education. Population Education Project.**
- <http://www.scribd.com/doc/8352646/Population-Education> (for Unit I)
- Maharjan, S. K. (2012). Sex and gender disparity in longevity. *Journal of Health Promotion*, 4, 70-74. (for Unit III)
- Marco, Hogeschool, Van Amstredm, *Theories and concepts of teacher professionalism teachers and their consequences for the curriculum in teacher education*. Retrieved from <http://www.hva.nl/kenniscentrum-doo/wp-content/uploads/2012/04/Theories-on-and-concepts-of-professionalism-Hungarian-publication.pdf> (for Unit V).
- Maternal mortality and morbidity 2008/2009.**
- <http://reliefweb.int/report/nepal/nepal-maternal-mortality-and-morbidity-study-200809-summary-preliminary-findings> (for Unit IV).
- Maternal motality in Nepal: Addressing the Issue.**
- Retrieved from <http://www.studentpulse.com/articles/708/maternal-mortality-in-nepal-addressing-the-issue> (for Unit IV)
- Mijell, H. (Ed.). (2010). *Why professional development matters*. Learning Forward.
- Retrieved from www.learningforward.org.advancing/whypdmatters.cfm (for Unit V)
- MoHP (2011). *Nepal population report*. Author. Retrieved from www.mohp.gov.np/population (for Unit III)
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Pop. Ed. 516 Advanced Demography

Course No.: Pop. Ed. 516
Level: M.Ed.
Semester: First

Nature of course: Theoretical
Credit hours: 3
Teaching hours: 48

6. Course Introduction

This course is designed to equip the students with the knowledge and skills of advanced theories and principles of demography. It also intends to acquaint the students with components and processes of demography, critical analysis of population theories, population growth and distribution in the world.

7. General Objectives

The general objectives of this course are to:

- equip the students with advanced knowledge of demography and basic demographic indicators.
- develop the capability of students in analyzing population theories critically.
- enhance the students with a deeper understanding of the growth, size and distribution of world population.
- enable the students to understand human fertility and its determinants, mortality, morbidity and human migration.
- enable students to interpret population ageing, its determinant, demographic profiles and socio-economic characteristics of the elder population.

8. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Explain the meaning and importance of demography.• Distinguish between demography, population studies and population education.• Identify basic demographic indicators and sources of population data.	Unit 1: Demography (6) 1.1 Concept, meaning and importance of demography 1.2 Population studies and population education 1.3 Basic demographic indicators 1.4 Components of demography 1.5 Demographic dividend/population bonus
<ul style="list-style-type: none">• Describe the genealogy of world population size, its growth and trend.• Illustrate the distribution of world population.	Unit II: Review of World Population Growth (5) 2.1 Level and trends of world population growth 2.2 The spatial distribution of population (Some developed and developing countries) 2.3 Population situation of the SAARC countries
<ul style="list-style-type: none">• Analyze fertility trends.	

<ul style="list-style-type: none"> • Explain the determinants and differentials of fertility. 	<p>Unit III: Human Fertility: its Determinants and Differentials (10)</p> <p>3.1 The concepts of fertility, fecundity and sterility 3.2 Fertility analysis in historical perspective 3.3 Mortality decline and fertility 3.4 Determinants of fertility 3.5 Fertility differentials</p>
<ul style="list-style-type: none"> • Describe the concept of human survival and historical transition to low mortality. • Categorize different causes of death. • Analyze the determinants of mortality and morbidity. 	<p>Unit IV: Morbidity and Mortality (5)</p> <p>4.1 Concept of morbidity 4.2 Basic concept of human survival 4.2.1 Survival curve and mortality curve (age patterns) 4.2.2 Historical transition of mortality 4.3 Causes of death 4.3.1 Major causes of death 4.3.2 Resurgence of infectious diseases 4.3.3 "New" diseases 4.4 Determinants of morbidity and mortality 4.5 Mortality differentials</p>
<ul style="list-style-type: none"> • Discuss the types and causes of migration. • Explain the consequences of migration in place of origin and destination. • Examine the loss and benefits of labour migration, brain drain and brain gain, demographic dividend and deficit. 	<p>Unit V: Human Migration (7)</p> <p>5.1 Migration typologies: internal and international 5.2 Causes and consequences of migration 5.3 Migration and health 5.3.1 Migrant's health 5.3.2 Impact on health of people at place of origin (left behind children, elderly) 5.3.3 Impact on health of people at place of destination 5.4 Migrants as participants and beneficiaries 5.5 Causes and consequences of brain drain and brain gain 5.6 Skilled and unskilled (Labour) migration 5.7 Adaptability and adjustability</p>
<ul style="list-style-type: none"> • Review and critically analyze population theories. • Explain the theories of fertility, mortality and migration. 	<p>Unit VI: Population Theories (10)</p> <p>6.1 Review of population theories: Malthusian theory, Karl Marx and Engel's views on population, Theory of optimum population, Demographic transition theory (first and second demographic transition)</p> <p>6.2 Theories of fertility</p>

	<p>6.2.1 Intermediate variable Frameworks - Davis and Blake</p> <p>6.2.2 Proximate determinant model of Bongaart</p> <p>6.2.3 Threshold hypothesis of fertility decline</p> <p>6.2.4 Caldwell's theory of intergenerational wealth flows</p> <p>6.2.5 Innovation and diffusion</p> <p>6.3 Theories of mortality</p> <p>6.3.1 Omran's theory (1971)</p> <p>6.4 Theories of migration</p> <p>6.4.1 Review of theories (Everett Lee, Ravenstein, Todaro Model)</p>
<ul style="list-style-type: none"> • Interpret population ageing, its determinants and magnitude. • Explain demographic profile of older population. • Discuss the socio-economic characteristics of older population. • Review theories of ageing and policies on senior citizen. 	<p>Unit VII: Population Ageing (5)</p> <p>7.1 Demographic determinants of population ageing</p> <p>7.2. Magnitude and speed of population ageing with reference to Nepal</p> <p>7.3 Demographic profile of the elderly</p> <p>7.3.1 Sex ratio of the older population</p> <p>7.3.2 Marital status</p> <p>7.3.3 Living arrangements</p> <p>7.3.4 Family and social support</p> <p>7.4 Socio-economic characteristics of the elders</p> <p>7.4.1 Literacy</p> <p>7.4.2 Labour force participation and retirement</p> <p>7.4.3 Pensions and income security</p> <p>7.4.4 Social security and senior citizens</p> <p>7.5 Health and disability</p> <p>7.6 Implication of population ageing</p> <p>7.7 Reviews of theories of ageing</p> <p>7.8 Reviews of policies on senior citizens</p>

Note: The figures within the parentheses indicate the approximate teaching hours allocated to respective units.

9. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units or sub-units or contents.

9.1 General instructional techniques

- Lecture
- Document review
- Discussion
- Collaborative works/learning
- Brainstorming
- Presentation
- Guest speech
- Project work
- Interaction
- Research-based learning activities

9.2 Specific instructional techniques

Unit	Activities and Instructional Techniques
I	Demography <ul style="list-style-type: none">• Students will be given the assignment to prepare and present the list of the demographic indicators.• The students will be given the assignment to present the topic on advantages and disadvantage of each of the sources of data.• With collaborative efforts of students and feedback of the teacher the materials will be improved further.
II	World Population Growth <ul style="list-style-type: none">• The students will collect materials on history of world population growth from different sources.• Students will organize and participate in debate programs as to whether rapid population growth is useful for the development of the country or not.
III	Human Fertility: its Determinants and Differentials <ul style="list-style-type: none">• Students will be given the small project work to collect information about attitudes and norms of high fertility in their family and they will be asked to present the information in the classroom.• The students will be given the assignment to prepare a list of the determinants of fertility.• All the students will be asked to present their materials.• With collaborative efforts of students and feedback of the teacher the materials will be improved further.
V	Human Migration <ul style="list-style-type: none">• The students will collect materials on different theories of migration from electronic sources or reference books.

	<ul style="list-style-type: none"> Students will organize and participate in debate programs as to whether migration has an impact on the health of migrants themselves, people in place of origin and people in place of destination. Students will be asked to prepare and present the list of causes and consequences of migration.
VI	<p>Population Theories</p> <ul style="list-style-type: none"> The students will be given the task (group assignment) to collect materials related to 'Theories of Demography'. By means of discussion and collaborative works of the students the materials will be arranged into major theories like ancient or less scientific theory, modern theory or scientific theory.
VII	<p>Population Ageing</p> <ul style="list-style-type: none"> Students will organize and participate in debate programs as to whether or not increasing senior citizens (ageing) is useful for the development of the country. The views of students and teachers will be shared in debate programs in the classroom. Students will be asked to prepare documents based on discussion and teachers' feedback. Students will be asked to prepare a paper (short research paper) on the demographic profile of the older population in their VDCs/Municipalities and present in the classroom. With collaborative efforts of students and feedback of the teacher the research paper will be improved further.

10. Evaluation Schemes

10.1 Internal evaluation (40%)

Internal evaluation will be conducted by the subject teachers based on the following aspects:

S.N	Particular	Marks
1	Attendance	5
2	Participation in learning activities	5
3	First assessment: Article review/ book review/ open book test/ unit test, etc.	10
4	Second assessment: Midterm test	10
5	Third assessment: Project work/case study/field study/survey/seminar/workshop	10
Total		40

5.2 External evaluation (60%)

Examination Section, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester.

S.N	Types of questions	Marks
1	Objective questions (Multiple-choice questions 10x1 mark)	10
2	Short-answer questions (6 questions with 2 OR questions x 5 marks)	30
3	Long-answer questions (2 questions with one OR question x 10 marks)	20
Total		60

6. Recommended Books and References

6.1 Recommended books

Week, J. R. (2005). *Population: An introduction to concept and issues*. Singapore: Thomson Learning. **(For Unit I, II, III, IV and VII)**

Rowland, D.T. (2003). *Demographic methods and concepts*. New York: Oxford University Press. **(For Unit III, IV and V)**

Bhende, A. and Kantitikar, T. (2010). *Principles of populations studies*. New Delhi: Himalayan Publishing House. **(For Unit I, II, III, IV, and V)**

Cox, P. R. (2008). *Demography*. London: Cambridge University Press. **(For unit I)**

Bogue, D. (1969). *Population demography*. New York: Jon Wiley and Sons inc. **(For unit I)**

Clark, J. I. (1992). *Population theories and demographic analysis*. Meerut: Meenakshi Prakashan. **(For unit VI)**

6.2 References

Bongaarts, J. (1990). The measurement of wanted fertility. *Population and Development Review* 16(3), 487-506.

Shryock, H. S., Siegel, J. S. and Associates. (1971). *The methods and materials of demography*. U.S. Department of Commerce, Bureau of the Census (For Unit I, III, IV and V)

Bongaarts, J. (1978). A Framework for analyzing the proximate determinants of fertility. *Population and Development Review* 4(1), 105-32.

Bonita, R. (1998). *Women, ageing and health: Achieving health across the life span*. Geneva: World Health organization.

Caldwell, J. C. (1985). Strengths and limitations of the survey approach for measuring and understanding fertility change: Alternative possibilities. In J. Cleland & J. Hobcraft, (Eds.), *Reproductive Change in Developing Countries: Insights from the World Fertility Survey* (pp. 47-48). Oxford: Oxford University Press.

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Davis, K. & Blake, J. (1956). Social structure and fertility. *Economic Development and Cultural Change*, 4, 211-35.

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Pop. Ed. 517 Demographic Measures and Techniques

Course No.: 517

Level: M. Ed.

Semester: First

Nature of course: Theoretical

Credit hours: 3

Teaching hours: 48

1. Course Introduction

This course is designed to acquaint the students with the analysis of population data. Specifically, this course intends to provide the students with the basic demographic measures and techniques with reference to composition, fertility, mortality, and migration and population projection.

2. General Objectives

The general objectives of this course are to:

- develop knowledge and skills of major demographic measures and techniques.
- enable students to compute and interpret demographic rates and ratios.
- equip students with skills in utilizing demographic data in different situations.

3. Specific Objective and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">▪ Identify and use various methods of data collection▪ Explain the concept, types, processes, uses and limitations of various methods.▪ Explain errors in census and survey data	Unit I. Sources and Errors of Demographic Data (7) 1.1 Sources of demographic data <ul style="list-style-type: none">1.1.1 Population census1.1.2 Vital Registration System1.1.3 Sample survey1.1.4 Administrative records including service statistics1.1.5 National and international publications 1.2. Errors in census and survey data
<ul style="list-style-type: none">▪ Analyze age and sex structure▪ Compute mean age and median age at marriage▪ Analyze age sex accuracy index▪ Construct population pyramid	Unit II. Population Composition (10) 2.1 Analysis of age structure <ul style="list-style-type: none">2.1.1 Age dependency ratio2.1.2 Mean age, median age and index of aging 2.2 Analysis of sex composition 2.3 Evaluation of age-sex data (Whipple's, Myer's and UN age sex accuracy index) 2.4 Construction of population pyramid
<ul style="list-style-type: none">▪ Analyze the marital status▪ Calculate different marriage rates▪ Compute the singulate mean age at marriage▪ Calculate different measures of fertility	Unit III. Measures of Nuptiality and Fertility (7) 3.1 Proportion of population by marital Status <ul style="list-style-type: none">(Proportion of never married, married, widowhood, separated and divorced) 3.2 Marriage rates (crude, general, age specific and total marriage rates) 3.3 Singulate mean age at marriage (SMAM) 3.4 General fertility rates (CBR, GFR, ASFR, TFR and CWR) 3.5 Specific fertility rates (GMFR, ASMFR, TMFR, GRR and NRR)
<ul style="list-style-type: none">▪ Analyze morbidity measures▪ Calculate different measures of mortality▪ Compute measures of pregnancy wastage▪ Construct different life tables	Unit IV. Measures of Morbidity and Mortality (10) 4.1 Analysis of morbidity measures (Incidence, prevalence and case fatality rates) 4.2 General mortality Rates (CDR, ASDR, IMR, CMR, U5MR and MMR) 4.3 Measures of pregnancy wastage (Fetal and perinatal death)

	<p>rate and ratio)</p> <p>4.4 Life table: Concept, uses, types, anatomy, construction of complete and abridged life table</p>
<ul style="list-style-type: none"> ▪ Calculate different measures of internal migration ▪ Calculate different measures of international migration ▪ Compute net internal migration rate by using national growth and vital statistics method 	<p>Unit V. Measures of Migration (7)</p> <p>5.1 Measures of internal migration (IMR, OMR, GMR and NMR)</p> <p>5.2 Measures of international migration (IMR, EMR, GMR and NMR)</p> <p>5.3 National growth rate method for internal migration</p> <p>5.4 Vital statistics method for net migration</p>
<ul style="list-style-type: none"> ▪ Analyze population projection ▪ Compute population growth rates ▪ Calculate population doubling period and future population 	<p>Unit VI. Population Projection and Change (7)</p> <p>6.1 Concept of population projection, population estimation, and forecast</p> <p>6.2 Balancing equation method for population estimation</p> <p>6.3 Linear, geometric and exponential growth rate function</p> <p>6.4 Estimation of population doubling period</p>

Note: The figures within the parentheses indicate the approximate teaching hours allocated to respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units.

4.1 General instructional techniques

- Lecture
- Document review
- Discussion
- Collaborative works/learning
- Brainstorming
- Presentation
- Guest speech
- Project work
- Interaction
- Research-based learning activities

4.2. Specific instructional techniques

Units	Activities and Instructional Techniques
I	Review of books, population monograph, statistical year books, survey reports, etc. and discussion on them. Conducting group work, report writing and presenting through seminars.
II	computation of population composition followed by group discussion, data analysis and presentation.
III	Discussion of various techniques for estimating fertility rates, and computation of nuptiality and fertility followed by group discussion, data analysis and presentation.
IV	Discussion of various techniques for estimating mortality rates and computation of morbidity and mortality followed by group discussion, data analysis and presentation.

V	Computation of measures of migration followed by group discussion, data analysis and presentation.
VI	Use of world population data sheets, census reports, etc. for discussion and practice of computation of population growth rates and changes followed by data analysis and presentation.

5. Evaluation Schemes

6.2 Internal evaluation (40%)

Internal evaluation will be conducted by the subject teachers based on the following aspects:

S.N	Particulars	Marks
1	Attendance	5
2	Participation in learning activities	5
3	First assessment: Article review/ book review/ open book test/ unit test, etc.	10
4	Second assessment: Midterm test	10
5	Third assessment: Project work/case study/field study/survey/seminar/workshop	10
Total		40

5.2 External evaluation (60%)

Examination Section, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester.

S.N.	Types of questions	Marks
1	Objective questions (Multiple-choice questions 10x1 mark)	10
2	Short-answer questions (6 questions with 2 OR questions x 5 marks)	30
3	Long-answer questions (2 questions with 1 OR question x 10 marks)	20
Total		60

6. Recommended Books and References

6.1 Recommended books

- Barclay, G.W. (1953). *Techniques of population analysis*. New work: Wiley. (**for Unit I-VI**)
 PRB. (1998). *Population handbook*. Washington D.C.: Population Reference Bureau. (**for Unit I-VI**)
 Shryock, H. S. et al. (1973). *The methods and materials of demography*. Washington DC.: Government Printing Office. (**Unit I-VI**)
 Siegel, J. S., & Swanson, D. A. (2004). *The methods and materials of demography*. California: Elsevier /Academic Press.
 Singh, M. L. & Syami, S. B. (1999). *An introduction to mathematical demography*. Kathmandu:
 Ross, J. A. (Ed.). (1992). *International encyclopedia of population*, vol. I and II. (**for Unit I-VI**)
 New York: United Nations.
 CBS (2012). *National Report*. Kathmandu: Central Bureau of Statistics. (**for Unit I-VI**)
 Maharjan, R. K. et al. (**2069 B.S.**) *Population studies, part-I & II*. Kirtipur: Sunlight Publication. (**for Unit I-VI**).

6.2 References

- Adhikari, M. R. (2011). *Demographic measures and techniques*. Kathmandu: Pinacal Publishers and Distributors Pvt. Ltd.
 Aryal, N. (**2067**). *Demographic measures and techniques*. Kathmandu: Inclusive Publication.
 Khatri, B. B. (**2068**). *Demographic measures and techniques*. Kathmandu: Sunlight Publication.

Pop. Ed. 518 Sexual and Reproductive Health Education

Course No.: Pop. Ed. 518

Nature of course: Theoretical

Level: M. Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Introduction

This course is designed to equip students with the deeper knowledge and understanding of misconceptions about the traditional and contemporary concepts of sex and sexuality, values of effective sex education, biological, psychological, clinical and social perspectives of human sexuality, and recent reproductive health goals and strategies. This course also builds capacity in students to work as an expert in designing, implementing and monitoring programmes for the formal as well as non-formal educational sectors.

2. General Objectives

The general objectives of this course are to:

- enhance an understanding of sexuality education, adolescence education, reproductive health education and values, and need of sexual and reproductive health education.
- develop an in-depth knowledge of human sexuality from the biological, psychological, behavioural, clinical and socio-cultural perspectives.
- familiarise the students with the issues and impacts of high-risk sexual behaviour and promoting healthy and responsible sexual behaviour.
- acquaint the students with the reproductive health policies and strategies in Nepal.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Clarify the concept and misconceptions of sexuality education• Discuss the recent concepts of sex education/sexuality education• Analyse theories of human sexuality• State the objectives of sexuality education• Discuss the need of ASHR education and characteristics of sexuality education• Analyse comprehensive sexuality education	<p>Unit I: Sexuality Education (8)</p> <p>1.1 Concept and misconception of sex/sexuality education 1.2 Rationale for contemporary sexuality education programmes 1.3 Theories of sexuality 1.4 Objectives of sexuality education 1.5 Need of adolescent sexual and reproductive health education 1.6 Characteristics of effective sexuality education 1.7 Comprehensive sexuality education</p>

<ul style="list-style-type: none"> • Explain development of sexuality during prenatal, infancy, childhood and adolescence period • Explain psychological changes during child hood, adolescence, adulthood and elderly stages of life 	<p>Unit II: Biological and Psychological Aspects of Sexuality (8)</p> <p>2.1 Prenatal development (Normal and Abnormal prenatal differentiation) 2.2 Infancy 2.3 Childhood 2.4 Adolescence 2.5 Adulthood 2.6 Elderly</p>
<ul style="list-style-type: none"> • Discuss the concept of different sexual behaviours and sexual decisions • Discuss sexual orientation and analyse causes/theories of homosexuality • Discuss the characteristics of LGBTIQA+ people • Interpret the causes, impacts and management of abnormal sexual behaviour 	<p>Unit III: Sexual Behaviour (8)</p> <p>3.1 Solitary sexual and hetero sexual behaviour 3.2 High-risk sexual behaviour 3.3 Sexual decisions 3.4 Sexual Orientation <ul style="list-style-type: none"> 3.4.1 Causes/theories of homosexuality 3.4.2 Characteristics of lesbian, gay, bisexual, transgender, intersex, queer, asexual (LGBTIQA+) 3.5 Abnormal sexual behaviour: Cause, impact and management <ul style="list-style-type: none"> 3.5.1 Paraphilia 3.5.2 Hyper sexuality </p>
<ul style="list-style-type: none"> • Explain the socio-cultural perception of sexuality • Analyse different religions and sexuality • Discuss commercial sex and its management • Discuss the role of male for promoting own and female RH 	<p>Unit IV: Socio-cultural Aspects on Sexuality (8)</p> <p>4.1 Socio cultural perception of sexuality 4.2 Religion and sexuality 4.3 Legal aspects on sexuality 4.4 Commercial sex and its management 4.5 Male sexual and reproductive health</p>
<ul style="list-style-type: none"> • Discuss the causes, impacts and management of sexual dysfunctions and sexual problems • Delineate causes, effects and management of sub-fertility, and abortion • Explain the ways of safe abortion and management of uterine prolapse 	<p>Unit V: Sexual and Reproductive Health Problems and their Management (10)</p> <p>5.1 Causes, impacts and treatment of male and female sexual dysfunction 5.2 Infertility, sub-fertility and its management 5.3 Sexual problems of disabled persons and their management 5.4 Legal aspects of abortion and its management 5.5 Uterine prolapse and its management</p>
<ul style="list-style-type: none"> • Analyse the goals, policies and strategies of reproductive health 	<p>Unit VI: Reproductive Health Goals, Policies and Strategies (6)</p> <p>6.1 Recent reproductive health plans and strategies of Nepal 6.2 Goals of International Conference on Population and Development (ICPD) related to RH 6.3 Millennium Development Goals (MDGs) related to RH 6.4 Sustainable Development goals (SDGs) related to RH 6.5 WHO strategies on RH 6.6 Adolescents and youth-friendly health service</p>

Note: The figures in the parentheses indicate the approximate hours for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units.

4.1 General instructional techniques

- Lecture
- Document review
- Discussion
- Collaborative works/learning
- Brainstorming
- Presentation
- Guest speech
- Project work
- Interaction
- Research-based learning activities
- Project works

4.2 Specific instructional techniques

Unit	Activities and Instructional Techniques
I	Sexuality Education <ul style="list-style-type: none">• The students will be asked to collect misconceptions/ traditional concepts of sex and sexuality education and let them discuss in group. Its copy will be distributed to students after editing.• The students will be asked to collect materials related to the objectives of sexuality education, reasons for sexuality education programmes and characteristics of effective sexuality education.• They will be asked to discuss in the classroom and necessary feedback will be supplied by the teacher.
II	Biological and Psychological Aspects of Sexuality <ul style="list-style-type: none">• The students will be given the assignment to prepare materials related to the development of human sexuality. They will also be instructed to present their assignment in a large group.• If possible a guest lecture will be arranged about sexuality development.
III	Sexual Behaviour <ul style="list-style-type: none">• The students will be asked to develop a survey form to collect information on high-risk sexual behavior and its management.• They will collect information at least from ten people to draw ideas about sexual decisions.• The students will be asked to organize an interaction programme on LGBTI. If possible a resource person will be invited for the interaction programme on LGBTI.
IV	Socio-cultural Aspects on Sexuality <ul style="list-style-type: none">• The students will be asked to visit a library or a website to collect information on religion and sexuality and legal aspects of sexuality.• They will be asked to prepare a report and present in a large group.• The teacher will provide essential feedbacks
V	Sexual and Reproductive Health Problems and their Management <ul style="list-style-type: none">• The students will be given reading materials on sexual dysfunctions for review. They will also be asked to draw conclusions from the materials and submit as a home assignment.

	<ul style="list-style-type: none"> The students will be asked to prepare a note on and discuss the consequences of unsafe abortion and uterine prolapse in Nepal . If possible, an expert will be invited to deliver a lecture on management of sub-fertility. A question-answer session will be conducted after finishing his/her lecture.
VI	<p>Reproductive Health Goals, Policies and Strategies</p> <ul style="list-style-type: none"> The students will be asked to collect different programmes and policies of reproductive health and they will also be suggested for self-study. The teacher will clarify by means of question-answer and interaction. The students will be assigned to visit a local health post/PHC to see whether or not they are providing youths with friendly RH services and they will also be asked to share with the group.

5.Evaluation Schemes

5.1 Internal evaluation (40%)

Internal evaluation will be conducted by the subject teachers based on the following aspects:

S.N	Particulars	Marks
1	Attendance	5
2	Participation in learning activities	5
3	First assessment: Article review/ book review/ open book test/ unit test, etc.	10
4	Second assessment: Midterm test	10
5	Third assessment: Project work/case study/field study/survey/seminar/workshop	10
Total		40

5.2 External evaluation (60%)

Examination Section, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester.

S.N	Types of questions	Marks
1	Objective questions (Multiple-choice questions 10x1 mark)	10
2	Short-answer questions (6 questions with 2 OR questions x 5 marks)	30
3	Long-answer questions (2 questions with 1 OR question x 10 marks)	20
Total		60

6. Recommended Books and References

6.1 Recommended books

Bolin, A & Whelehan, P. (2009). *Human sexuality: Biological, psychological, and cultural perspectives*. New York: Rutledge. (For unit II-IV)

Bruess, C. E. & Greenberg, J. S. (2004). *Sexuality education: Theory and practice*. Sudbury: Jones and Bartlett Publishers. (For units I, II and III)

Carroll, J. L. (2008). *Sexuality now: Embracing diversity*. Belmont: Wadsworth. (For units I, II – V)

Herdt, G. & Howe, C. (Ed.). (2008). *21st centuries sexualities: Contemporary issues in health, education and rights*. USA: Routledge. (For units I, III and V)

Masters, W. H., Johnson, V. E., & Kolodny, R. C. (2007). *Human sexuality*. New Delhi: Pearson Education. (For units I- IV)

Shrestha, D. R. (2008). *Reproductive health: National and international perspectives*. Dhulikhel: Mrs. Narayan Devi Shrestha. (For unit VI)
WRREC Nepal. <http://www.worecnepal.org/programs/trafficking> (for unit V)
Top 10 misconception about sex. Posted by Amanda Hill on November 1, 2011 at 10:29 am, UNPFA and adolescence (For unit I).

6.2 References

- Adhikari, R. (2010). Are Nepali students at risk of HIV? A cross-sectional study of condom use at first sexual intercourse among college students in Kathmandu. *Journal of the International AIDS Society*, 13(7). Retrieved from <https://onlinelibrary.wiley.com/doi/abs/10.1186/1758-2652-13-7>
- Adhikari, R & Tamang, J. (2009). Premarital sexual behavior among male college students of Kathmandu, Nepal. *BMC Public Health*, 9(241). Retrieved from <http://www.biomedcentral.com/1471-2458/9/241>
- Adhikari, R. (2015). Prevalence and correlates of sexual risk behaviors among Nepalese students. *Social Science Asia*, 1(4),38-50. doi: 10.14456/ssa.2015.29.
- Animaw, W & Bogale, B. (2011). Abortion in university and college female students of Arba Minch town, Ethiopia, March 2014(Vol. 5 | No. 1 | Pages 17-22)
- Ashley A. McClung & Michelle M. Perfect** Research-based practice: Sexual health education: social and scientific perspectives and how school psychologists can be involved
<http://www.nasponline.org/publications/cq/40/6/sexual-health-education.aspx>
- Dale, P. Valued of sex education and the adolescent,**
http://opendoors.com.au/education/?page_id=618
- Department of Health Service (2006/2007). Annual report. Kathmandu: Ministry of Health and Population.
- Ellsberg, M. & Heise, L. (2005). *Researching violence against women: A practical guide for researchers and activists*. Geneva: WHO and PATH. Retrieved from http://www.unfpa.org/public/home/sitemap/icpd/International-Conference-on-Population-and-Development/unfpa_and_adolescents
- Hamal, P. K. (2010). Sexual and reproductive health of low income adolescence in Nepal: Can education be a catalyst. *Economics Journal of Development Issue*. Vol. 11 and 12 No. 1-2 **ICPD programme of action para.** <http://web.unfpa.org/adolescents/language/p4.htm>
- MOH New ERA, ORC (2001 and 2011). *Nepal demographic and health survey*. Kathmandu: Author. *Moving Forward: Dispelling misconceptions about sexuality education in India*.
http://www.popcouncil.org/pdfs/frontiers/presentations/2007APCRSHR_Jejeebhoy.pdf
- NCED (2017). *Comprehensive sexuality education: Teachers' resource material*. Bhaktapur: NCED.
- O'karo E. K. D. Akamune. *Overcoming misconceptions about sex*.
<http://www.nebilove.net/overcoming%20common%20misconceptions%20about%20sex.htm>
- Papathansiou, I, Lahana, E. *Adolescence, sexuality and sexual education*. *Health Science Journal*.
http://www.hsj.gr/volume1/issue1/issue1_review2.pdf
- Prabhu, V. *Sex education to adolescence* http://www.healthlibrary.com/book37_chapter362.htm
- Rahman, M., G &. Hoque, A. (2014). Women's household decision-making autonomy and contraceptive behavior among Bangladeshi women, *Sexual & Reproductive Health Care*, 5(1), 9-15.
- Rate, A. (updated February 2014) Preeach or teach? in defense of valued based sex education** [http://www.srhjournal.org/article/S1877-5756\(13\)00068-2/fulltext](http://www.srhjournal.org/article/S1877-5756(13)00068-2/fulltext)

- Regmi, P., Simkhada, P. & Teijlingen, E. R. V. (.....) Sexual reproductive health status among young people in Nepal: Opportunities and barriers for sexual health education and services utilization. *Kathmandu University Medical Journal*, 6, (2),248-256.
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- Vithal, P. *Myths and misconceptions in sexuality: Sex education to adolescents*. http://www.healthlibrary.com/book37_chapter389.htm
- UNESCO (2018). *International technical guidance on sexuality education*. Retrieved from <https://www.unfpa.org/sites/default/files/pub-pdf/ITGSE.pdf>
- WHO (1999). *Programme for adolescence and development*. Geneva: WHO.

उपाध्याय, गोविन्दशरण (२००८). केवल किशोर किशोरीका लागि. काठमाडौँ : ए के बुक्स एण्ड एकेशनल इन्टरप्राइज.

जनसङ्ख्या शिक्षा एकाइ (२०६१). यौन तथा प्रजनन स्वास्थ्य राष्ट्रिय स्रोत पुस्तक. कीर्तिपुर: शि.शा. सङ्काय, त्रि. वि.

तुइतुइ, रोशनी र तुइतुइ, सावित्री (२०६४). प्रजनन स्वास्थ्य. काठमाडौँ : प्रशान्ती प्रकाशन.

पोख्रेल, निता (२०६४). यौन, गर्भ र सुत्केति. काठमाडौँ : एडुकेशनल पब्लिकेशन हाउस.

महर्जन, श्यामकृष्ण (२०७०). मानव यौनिकता र प्रजनन स्वास्थ्य (छैठौ संस्करण). कीर्तिपुर : सनलाइट प्रकाशन.

शिक्षाशास्त्र सङ्काय (२०५९). सामाजिक न्याय शिक्षा. कीर्तिपुर : डीनको कार्यालय, शिक्षाशास्त्र सङ्काय, त्रि. वि.

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Special Need Education

- 1. Fundamentals of Special Needs and Inclusive Education**
- 2. Socialization and Communication Skills**
- 3. Psychology of Individual Differences**
- 4. Learning Diversity and Disability in Inclusive Classroom**

SN.Ed.515: Fundamentals of Special Needs and Inclusive Education

Course no.: SN.Ed.515
Level: M.Ed.
Semester: First

Nature of the course: Theoretical
Credit hours: 3
Teaching hours: 48

5. Course Description

This course is designed to provide general understanding regarding the right to education of children with diverse needs. Fundamental targets groups and their general introduction in terms of theories and practice of Special Education (SE), Special Needs Education (SNE) and Inclusive Education (IE) are dealt with in this course. It helps students enrich their understanding of the ways and measures to apply inclusion in regular education. It, therefore, intends to engage the students in self-oriented study with a deeper understanding of the diverse needs of children with special needs.

6. General Objectives

The general objectives of this course are as follows.

- To make the students knowledgeable about the basic concepts of special needs education,
- To provide the students with a deeper understanding of special needs and inclusive education,
- To prepare the students to have wider knowledge of diversified needs of children with special needs,
- To enhance the knowledge of students about the fundamental process of inclusion,
- To enable the students to apply theories on inclusion in the classroom setting,
- To acquaint the students with modern technologies of teaching students with disabilities, and
- To provide the students with an introductory knowledge about support services for children with special needs.

7. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Define special, special needs and inclusive education• State the major stages of the development of special education to modern inclusive educational practices• Explain the basic classification of disability-related terms like congenital, developmental and acquired disability• Identify the major target groups of special needs education• Relate the international development of special needs education to the Nepalese context	<p>Unit I: Introduction to SE, SNE and IE (4)</p> <p>1.1 Definition of Special Education, Special Needs Education and Inclusive Education</p> <p>1.2 Evolution of SNE and IE</p> <p> 1.2.1 Rejection</p> <p> 1.2.2 Segregation</p> <p> 1.2.3 Integration to inclusion</p> <p>1.3 Basic concepts of disabilities/difficulties: congenital, developmental and acquired disabilities.</p> <p>1.4 Target groups of SE/SNE/IE</p> <p>1.5 Development of SNE/IE from the national perspectives:(NESP1971-1975), PEP (1984-1990),</p>

	BPEP(1991-2001), EFA National Plan of Action(2001-2015),UNCRPD-2006, SSRP(2009-2016), SSDP(2016-2023), Nepal Constitution 2072(2015),Human Rights for Persons with Disabilities Act, 2074 (2017), and National Education Policy(NEP),2019
<ul style="list-style-type: none"> Define and differentiate the major characteristics of exceptional children with the major causes of such disabilities Define and distinguish the major characteristics of the target groups of children with the major causes of such situation. Distinguish children with exceptionalities for further educational intervention 	<p>Unit II: Classification and Description of Exceptional Children (20)</p> <p>2.1 Definition, characteristics ,major causes of different exceptionailities with educational intervention</p> <p> 2.1.1 Visual impairment</p> <p> 2.1.2 Hearing impairment</p> <p> 2.1.3 Physical impairment</p> <p> 2.1.4 Intellectual disability</p> <p>2.2 Introduction to the target groups of SNE</p> <p> 2.2.1 Speech and language disorders</p> <p> 2.2.2 Gifted and talented</p> <p> 2.2.3 Learning disability</p> <p> 2.2.4 Attention deficit hyperactive disorder (ADHD)</p> <p> 2.2.5 Children with autism spectrum disorder</p> <p> 2.2.6 Deaf-blind</p> <p> 2.2.7 Hemophilia</p> <p> 2.2.7 Multiple disabilities</p> <p> 2.2.8 Students at risk</p>
<ul style="list-style-type: none"> Identify children with special needs through screening and decide on the necessary early intervention strategies, Point out the screening, assess 	<p>Unit III: Intervention Strategies (12)</p> <p>3.1 Early identification and intervention</p>

<ul style="list-style-type: none"> ment and diagnosis methods for the referral purpose, • Elaborate the educational intervention/promotion methods for the major target groups of special needs education • Define corrective, rehabilitative, promotive and remediation methods • List the equitable measures to education 	<p>3.1.1 Prevention, early screening, early intervention</p> <p>3.1.2 Screening, assessment, diagnosis and referral service</p> <p>3.2 Educational intervention for the major target groups</p> <p>3.2.1 Corrective measures</p> <p>3.2.2 Rehabilitative measures</p> <p>3.2.3 Promotive measures</p> <p>3.2.4 Remediation measures</p> <p>3.3 Equitable measures of education</p>
<ul style="list-style-type: none"> • Define types of support services • Classify support services • Differentiate between medical, assistive and therapeutic services • Categorize the resource room services • Describe the importance of networking parents and professionals • List out different instructional technologies to educate persons with special needs. 	<p>Unit IV: Support Services (6)</p> <p>4.1 Definition</p> <p>4.2 Types</p> <p>4.2.1 Medical services</p> <p>4.2.2 Assistive devices</p> <p>4.2.3 Therapeutic services</p> <p>4.2.4 Resources room services</p> <p>4.3 Networking parents, professionals and their services</p> <p>4.2 Instructional technologies and their use in the classroom</p>
<p>Describe the major processes of inclusion and teachers' role in an inclusive classroom.</p>	<p>Unit V: Process of Inclusion (6)</p> <p>5.1 Creating a supportive school environment</p> <p>5.2 Setting and managing a classroom in an</p>

	<p>inclusive way</p> <p>5.3 Using differentiated teaching techniques</p> <p>5.4 Creating the universal design of learning</p> <p>5.5 Using the professional team approach: cooperation, collaboration and co-work</p> <p>5.6 Teachers' roles for inclusive classroom setting</p>
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Note: The figures in the parentheses indicate the approximate teaching hours allocated to the respective units.

4. Instructional techniques: Two types of instructional techniques are suggested to deliver the contents in the classroom: general and specific. A brief account of these techniques are as follows.

4.1 General instructional techniques

Depending on the nature of the class, subject to be taught, individual differences of the students, and the type of evaluation to be used to assess the achievements of the students, the following instructional techniques will be applied solely or in combination.

- Lecture,
- Discussion,
- Question-answer,
- Brain storming
- Group work and group presentation

4.2 Specific instructional techniques

Specific instructional techniques such as classroom presentation by the students, guided individual study, tutorial support on different contents and project works are suggested. To this course, the following specific instructional techniques are suggested for the selected units to ensure students' active participation in the teaching-learning process, and to make the teaching-learning research-oriented.

Units	Specific Instructional Techniques
Unit I	To make the teaching learning process more learner-centered , the group discussion approach will be used. The students will download the human rights for the persons with disability act 2074 from the website and summarize the key features of the act in key points.
Unit II	The teacher will present the lesson using multimedia. To make the teaching learning process more learner-centered, the group discussion approach will be used.
Unit III	Students will be divided in groups and certain

	<p>topics will be assigned. Each group will prepare a brief field-based report and present it in the class preferably using the multimedia projector.</p> <p>The presentation will be supplemented through teacher's comments.</p>
Unit IV	Some case studies will be presented to help the students understand the issues which will be followed by discussion.
Unit V	<p>The teacher will use the group discussion method to make the teaching learning process more learnercentered. The students will use the internet surfing method to collect the information and share it with their friends.</p> <p>The teacher will add additional comments.</p>

5. Evaluation

Two types of assessment techniques, namely, internal and external will be carried out to appraise the academic achievement of the students under this course. Internal and external assessment procedures will carry 40 and 60 percent weightrespectively. A detailed description of the assessment procedures will be as follows.

5.1 Internal Assessment (40%)

The concerned teacher will carry out the internal assessment of the students based on the distribution of marks as stated below.

- | | |
|--|-----------------|
| • Attendance | 05 marks |
| • Participation in learning | 05 marks |
| • First assessment (literature review and presentation) | 10 marks |
| • Second assessment (School visit and report submission) | 10 marks |
| • Third assessment (Written examination) | 10 marks |
| Total | 40 marks |

5.2 Semester/Final Examination (60%)

The Examination Division, Dean's Office, Faculty of Education will conduct the semester/final examination at the end of each semester. The distribution of marks for the types of questions to be asked in final examination is as follows:

- | | |
|--|--------------|
| • Objective type questions (10 Multiple choice items x 1 marks) | 10 ma
rks |
| • Short answer questions (6 questions with 2 “or” questions x 5 marks) | 30 m
arks |
| • Long answer questions (2 questions with 1 or question x 10 marks) | 20 ma
rks |
| Total | 60 |
| marks | |

6. Recommended Books and Reference Materials

6.1 Recommended Books

Kirk, S.A., Gallager, J.J., & Anastasiow & Coleman, (2009).*Educating exceptional children.* USA: Houghton Mifflin company. (For units 1, 3, 4 and 5)

Heward W. L. (2012). *Exceptional children: An introduction to special education* (10th ed). New Delhi: Pearson. (For unit 2)

6.2 Reference Materials

Kafle, B.D. (2002). Including the Excluded: A critical evaluation of special needs education program in Nepal, Banaras Hindu University, India

SN Ed. 516: Socialization and Communication Skills

Nature of the course: Theoretical

Course no.: SN Ed. 516

Credit hours: 3

Level: M. Ed.

Teaching hours: 48

Semester: First

1. Course Description

This course is designed for M.Ed. students with Special Needs Education as a specialization area. The course aims to develop in the students the knowledge of socialization and communication skills needed to teach children with special needs. There are two parts in this course: the first part deals with concepts/definition and importance of socialization including the strategies of socialization, social skills, life skills and interpersonal relationship between children with special needs and school, community and parents; the second part is about the definition, importance and principles of communication including classification of non-verbal communication. The role of teachers in socializing and communicating with children with special needs is highlighted. The course intends to shape the perspectives of students towards socialization and communication skills which form the key to the life of children with special needs.

2. General Objectives

The general objectives of this course are as follows.

- To acquaint the students with the concepts, importance and strategies of socialization and communication skills that are needed to teach students with special needs,
- To develop, in the students, the knowledge and perspectives on the concepts, importance and principles of the communication skills,
- To develop , in the students, competencies needed for dealing with children with special needs by using appropriate strategies, and
- To highlight the need for developing interpersonal relationships between the teacher and students for an effective curriculum transaction.

3. Specific objectives and contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Define the meaning of socialization• Describe socialization and special needs children• Explain the importance of socialization• Explore the teacher as a relationship builder for children with special needs	<p>Unit: I Concept and Meaning of Socialization (8)</p> <p>1.1. Meaning and definition of socialization</p> <p>1.2. Socialization and special needs children</p> <p> 1.2.1. Developing social skills</p> <p> 1.2.2. Social conventions</p> <p> 1.2.3. Intra-personal social skills</p> <p> 1.2.4. Inter-personal social skills</p> <p>1.3. Importance of socialization</p>

	<p>1.4. The teacher as a relationships builder</p> <ul style="list-style-type: none"> 1.4.1. Respect 1.4.2. Encouragement 1.4.3. The gift of time 1.4.4. Reciprocity: relationships between the teacher and the students
<ul style="list-style-type: none"> • Describe different development contexts: biological, individual, family, cultural and social contexts • Conceptualize the relationships between development and psychopathology and developmental deviation 	<p>Unit: II Normative Development (12)</p> <p>2.1. A General developmental framework:</p> <p>2.1.1. The biological context</p> <ul style="list-style-type: none"> • Concept of sex and gender Identity • Role of sex and gender <p>2.1.2. The individual context</p> <ul style="list-style-type: none"> • Cognitive development • Emotional development • Moral development <p>2.1.3. The family context</p> <ul style="list-style-type: none"> • Parenting style • Parental sensitivity • Parent-child bondage • Effect of maltreatment and • Family violence <p>2.1.4. The social context</p> <ul style="list-style-type: none"> • Peer relations • Extra familial context <p>2.1.5. The cultural context</p> <ul style="list-style-type: none"> • Poverty and social classes • Ethnic diversity • Cross cultural norms and expectations <p>2.2. Relationships between development and psychopathology</p> <p>2.2.1. Developmental psychopathology and developmental deviation</p> <p>2.2.2. Developmental deviation in cognitive, emotional and moral processes</p> <p>2.2.3. Adaptive difficulties in:</p> <ul style="list-style-type: none"> • Family process • Social process • Cultural process
<ul style="list-style-type: none"> • Explain the meaning and concept of communication in language and speech 	<p>Unit: III Development of Communication, Language and Speech (10)</p>

<ul style="list-style-type: none"> • Explain the importance and functions of non-verbal communication • Classify the non-verbal communication skills • Describe language and speech development in children. 	<p>3.1. Conceptualizing communication</p> <ul style="list-style-type: none"> 3.1.1. Defining communication 3.1.2. Importance of communication 3.1.3. Principles of communication <p>3.2. Non-verbal communication</p> <ul style="list-style-type: none"> 3.2.1 Definition 3.2.2 Classification of non-verbal communication skills 3.2.3 The messages of action, space, time and silence 3.2.4 The importance of non-verbal communication 3.2.5 Functions of non-verbal communication <p>3.3. Language development</p> <p>3.4 Speech development</p>
<ul style="list-style-type: none"> • Explain professional collaboration in terms of co-teaching, cooperative teaching and arranging the use of paraprofessionals • Describe the role of the family in communication and socialization of children with special needs • Identify the impact of disability on the siblings and parents • Identify the ways of using home-school and parental support in socialization and communication of children with special needs • Identify the ways of providing instructional support to facilitate communication 	<p>Unit: IV Professional Collaboration between Home and School (8)</p> <p>4.1 Concept and principles of collaboration</p> <ul style="list-style-type: none"> 4.1.1. Professional collaboration 4.1.2. Co-teaching 4.1.3. Cooperative teaching arrangements 4.1.4. Using paraprofessionals <p>4.2. The family</p> <ul style="list-style-type: none"> 4.2.1. Cultural considerations: Families and children with special needs 4.2.2. Impact on siblings 4.2.3. Parental support <p>4.3. Home and school collaboration</p> <ul style="list-style-type: none"> 4.3.1. Communicating with parents 4.3.2. Providing reinforcement and encouragement 4.3.3. Providing instructional support
<ul style="list-style-type: none"> • Describe the procedures of differentiating instructions for students with special needs. • Illustrate the comprehensive model of differentiating instruction in the classroom. • Identify ways of managing 	<p>Unit: V Differentiating Classroom Instruction (10)</p> <p>5.1. Basic concepts about differentiating instructions</p> <ul style="list-style-type: none"> 5.1.1. Conceptual basis and definition 5.1.2. Operating procedures for differentiated classrooms <p>5.2. Comprehensive model of differentiating instruction</p> <ul style="list-style-type: none"> 5.2.1. Setting differentiation

classroom for the use of differentiated instruction	5.2.2. Material differentiation 5.2.3. Instructional differentiation 5.2.4. Management/behavioral differentiation 5.2.5 Personal-social-emotional(Affective) differentiation
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Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.

4. Instructional techniques: Two types of instructional techniques are suggested to deliver the contents in the classroom: general and specific. A brief account of these techniques follows.

4.1 General instructional techniques

The following general instructional techniques will be used.

- Lecture (with the use of multi-media projector)
- Discussion
- Question-answer
- Brain storming

4.2 Specific instructional techniques

The specific instructional techniques such as classroom presentation by the students, guided individual study, tutorial support on different contents and project works are suggested. For this course, the following specific instructional techniques are suggested for the selected units to ensure the students' active participation in the teaching-learning process, and to make the teaching-learning research-oriented.

Units	Specific Instructional Techniques
Unit I	The teacher will present the lesson using the multimedia. To make the teaching learning process more learner-centered, the group discussion approach will be used.
Unit II	Group work and presentation The students will be divided into groups and certain topics will be assigned to prepare a brief field-based report and they will present their report in the class preferably using the multimedia projector. The presentation will be supplemented by teacher's comments.
Unit III	Class activities The students will be asked to demonstrate how the children

	<p>with special needs communicate with others through non-verbal communication.</p> <p>The students with the help of the teacher will make a write up of the result of the class activities.</p>
Unit IV	<p>The teacher will present the lesson using multimedia. To make the teaching learning process more learner -centered, the group discussion approach will be used.</p>
Unit V	<p>Assignment and presentation</p> <p>The students will be divided into groups. Each group will be assigned to prepare a part of a comprehensive model of differentiating instruction.</p> <p>Each group will present its assignment in the class and it will be followed by discussion.</p>

5. Evaluation

Two types of assessment techniques, namely internal and external, will be carried out to appraise the academic achievement of the students under this course. The internal and external assessment procedures will carry 40 and 60 percent weight respectively. The detailed description of the assessment procedures will be as follows.

5.1 Internal Assessment (40%)

The concerned teacher will carry out the internal assessment of the students based on the distribution of marks as stated below.

- | | |
|--|-----------------|
| • Attendance | 05 marks |
| • Participation in learning | 05 marks |
| • First assessment (literature review and presentation) | 10 marks |
| • Second assessment (School visit and report submission) | 10 marks |
| • Third assessment (Written examination) | 10 marks |
| Total | 40 marks |

5.2 Semester/Final Examination (60%)

The Examination Division, Dean's Office, Faculty of Education will conduct the semester/final examination at the end of each semester. The distribution of marks for the types of questions to be asked in the final examination is as follows:

- | | |
|--|-----------|
| • Objective type questions (10 multiple choice items x 1 marks) | 10 marks |
| • Short answer questions (6 questions with 2 or-questions x 5 marks) | 30 marks |
| • Long answer questions (2 questions with 1 or-question x 10 marks) | 20 marks |
| Total marks | 60 |

Recommended Books and reference materials

6.1 Recommended Books

Anderson, N.B., & Shames, G.H. (2011). *Human communication disorders: An introduction* (8th Edition). Delhi: Pearson Education, Inc. (for unit III)

Tom E.C. Smith, Edward A. Polloway, James R.P. Patton, & Carol A. Dowdy. (2011). *Teaching students with special needs in inclusive settings* (6th Edition). Delhi: Pearson Education Inc. PHI Learning Private Ltd. (for units IV & V)

Wenar, C. & Kerig, P. (2005). *Developmental psychopathology: From Infancy through Adolescence* (5th Edition). Delhi: McGraw-Hill International Edition. (for units I & II)

6.2 Reference materials

Samovar, L.A., & Porter, R.E. (2001). *Communication between cultures*. Australia: Wadsworth Thomson Learning (for unit III)

SN.Ed. 517: Psychology of Individual Differences

Course no.: SN.Ed. 517

Nature of course: Theoretical

Level: M. Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Description

This course is about the rudimentary knowledge of the unique characteristics of learners with their different individual needs. The key themes included in this course are theoretical orientation, strategies of learning and teaching, foundations of human growth and development, cognition and information processing, learning processes, and pedagogical aspects.. These contents will be dealt with in relation to the educational needs of children with special needs.

2. General Objectives

The general objectives of the course are as follows.

- To provide fundamental knowledge about the dimensions of individual differences with regard to children with special needs;
- To orient the students to the theoretical foundations of human growth and development;
- To develop, in the students, the concept of cognition and information processing;
- To provide them with the theoretical knowledge about learning processes; and
- To develop skills and knowledge regarding pedagogical aspects to address children's special needs education

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">● Elucidate the concept and the importance of individual differences● Identify the measures of individual differences● Illustrate the factors causing deviation● Identify different methods of studying children with special needs● Apply the concept of individual differences to children with special needs education (SNE)	<p>Unit I: Introduction to the Psychology of Individual Differences (7)</p> <p>1.1 Concept of individual differences 1.2 Importance of individual differences 1.3 Measures of individual differences</p> <p>1.4 Factors causing deviation</p> <ul style="list-style-type: none">1.4.1 Biological factors1.4.2 Cognitive factors1.4.3 Socio-cultural factors <p>1.5 Methods of identifying individual differences</p> <ul style="list-style-type: none">1.5.1 Observational method1.5.2 Experimental method1.5.3 Clinical method1.5.4 Case study <p>1.6 Implications for persons with individual differences</p>

<ul style="list-style-type: none"> ● Identify different methods of studying human growth and development ● Describe human growth and development with regard to physical, cognitive, personality, intellectual and social development ● Explain development delays and disorders 	<p>Unit II: Human Growth and Development (9)</p> <p>2.1. Methods of studying growth and development 2.1.1 Longitudinal, cross-sectional and cohort sequence</p> <p>2.2. Physical development</p> <p>2.3. Cognitive and intellectual development 2.3.1 Views of Piaget and Vygotsky</p> <p>2.4. Personality and social development</p> <p>2.5. Development delays and disorders</p>
<ul style="list-style-type: none"> ● Describe cognition and information processing methods and modalities ● Elucidate memory, thinking and intelligence ● Explain cognition and information processing abilities in SNE 	<p>Unit III: Information Processing and Cognition (11)</p> <p>3.1 Information processing and cognition 3.1.1 Sensation, perception, attention</p> <p>3.2 Memory 3.2.1 Nature, types, remembering, forgetting</p> <p>3.3 Thinking 3.3.1 Concept formation, reasoning, problem solving, creativity</p> <p>3.4 Intelligence 3.4.1 Nature, types and assessment</p> <p>3.5 Cognition and information processing abilities in children with SNE</p>
<ul style="list-style-type: none"> ● Explain intelligence and the learning theories with reference to children with SNE ● Describe motivational and personality theories ● Identify ways of assessing personality ● Apply learning theories to the enhancement of learning style and pace of children with SNE 	<p>Unit IV: Theories of Learning (11)</p> <p>4.1. Intelligence Theories 4.1.1 Spearman's two factor theory 4.1.2 Thurston's group theory 4.1.3 Cattell and Horn's fluid and crystallized theory 4.1.4 Guilford's structure of intellect (SI) theory 4.1.5 Gardner's multiple intelligences theory</p> <p>4.2. Classical and cognitive theories 4.2.1 Behavioral, cognitive and social theories</p> <p>4.3. Motivation theories 4.3.1 Achievement, attribution, cognitive and dissonance theories</p> <p>4.4. Personality theories 4.4.1 Psychoanalytic theory- Freud and neo Freudians 4.4.2 Humanistic theory</p>

	4.5 Implications of learning theories for children with SNE
<ul style="list-style-type: none"> • Explain the pedagogical dimensions of learning styles and teaching styles • Apply learning styles and teaching styles to fostering the learning of children with SNE • State teaching strategies for enhancing the self-esteem of children with SNE 	<p>Unit 5: Pedagogical Dimensions (10)</p> <p>5.1. Learning styles</p> <p>5.1.1 Visual, auditory, kinesthetic, intra & interpersonal learning styles</p> <p>5.1.2 Perceptual, cognitive, personality and compound learning styles</p> <p>5.2. Teaching styles</p> <p>5.2.1 Classroom climate, group dynamics and teacher effectiveness</p> <p>5.2.2 Peer tutoring, cooperative learning and self-regulated learning</p> <p>5.3. Enhancing the self-esteem of children with SNE</p>

Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.

4 Instructional Techniques: Two types of instructional techniques are suggested to deliver the contents in the classroom: general and specific,. A brief account of these techniques follows.

4.1 General instructional techniques

Depending on the nature of the class, subject to be taught, individual differences of the students, and type of evaluation to be used to assess the achievements of the students, the following instructional techniques will be applied solely or in combination.

- Lecture,
- Discussion,
- Question-answer,
- Brain storming
- Group work and group presentation

4.2 Specific instructional techniques

Specific instructional techniques such as classroom presentation by the students, guided individual study, tutorial support on different contents and project works are suggested. The following specific instructional techniques are suggested for the selected units to ensure the students' active participation in the teaching-learning process and to make the teaching-learning research-oriented.

Units	Specific Instructional Techniques
Unit I	Teacher will present the lesson using multimedia. To make the teaching learning process more learner-centered, the

	group discussion approach will be used.
Unit II	The discussion method will be used for the learner-centered teaching and learning . The teacher will present the lesson with PowerPoint presentation .The question answer method will mostly be used.
Unit III	Brain storming exercises will be carried in the class to differentiate between memory, thinking and intelligence to utilize students' higher order mental processes. Results will be derived through thorough deliberations among the students, which will be facilitated by the subject teacher.
Unit IV	The teacher will present the lesson using multimedia. To make the teaching learning process more learnercentered, the group discussion approach will be used.
Unit V	The students will be divided into groups and certain topics will be assigned to them. Each group will prepare a brief teaching plan for peer tutoring or cooperative learning or self-regulated learning and present it in the class preferably using multimedia projector. The presentation will be followed by discussion and supplemented by teacher's comments.

5. Evaluation

Two types of assessment techniques, namely internal and external, will be carried out to appraise the academic achievement of the students under this course. The internal and external assessment procedures will carry 40 and 60 percent weightrespectively. A detailed description of the assessment procedures will be as follows.

5.1 Internal Assessment (40%)

The concerned teacher will carry out the internal assessment of the students based on the distribution of marks as stated below.

- | | |
|--|-----------------|
| • Attendance | 05 marks |
| • Participation in learning | 05 marks |
| • First assessment (Literature review and presentation) | 10 marks |
| • Second assessment (School visit and report submission) | 10 marks |
| • Third assessment (Written examination) | 10 marks |
| Total | 40 marks |

5.2 Semester/Final Examination (60%)

The Examination Division, Dean's Office, Faculty of Education will conduct the semester/final examination at the end of each semester. The distribution of marks for the types of questions to be asked in the final examination is as follows.

- | | |
|--|--------------|
| • Objective type questions (10 Multiple choice items x 1 marks) | 10 m
arks |
| • Short answer questions (6 questions with 2 or-questions x 5 marks) | 30 m
arks |
| • Long answer questions (2 questions with 1 or-question x 10 marks) | 20 m
arks |
| Total | 60 |
| marks | |

6. Recommended Books and reference materials

6.1 Recommended Books

Driscoll, P. M. (1994). *Psychology of learning for instructions*. London: Allyn & Bacon. (For units I, II, III, & IV)

Joyce, B., Weil, M. & Calhoun, E. (2011). *Models of teaching* (8th Edition). New Delhi: PHI Learning Private Limited. (For unit V)

6.2 Reference Materials

Carson, R. C., Butcher, J. N., Mineka, S. & Hooley, J. M. (2007). *Abnormal psychology* (13th Edition). India: Pearson Education, Inc. (For unit I)

Coleman, J. C. (2007). *Abnormal psychology and modern life*. New Delhi: D. B. Taraporevada Sons & Co. Private Limited with Scott Forereman & Company. (For unit I)

Reid, G. (2005). *Learning styles and inclusion*. New Delhi: Sage Publications. (For unit V)

Slavin, E. R. (2003). *Educational psychology: Theory and practice* (7th Edition). London: Allyn & Bacon. (For units I, II, III, & IV)

Wenar, C. & Kerig, P. (2005). *Developmental psychopathology: From infancy through Adolescence* (5th Edition). New Delhi: McGraw-Hill International Edition. (For unit I)

Woolfolk, A. (2008). *Educational psychology* (9th Edition). New Delhi: Pearson Education, Inc. (For units I, II, III, & IV)

SN Ed. 518: Learning Diversity and Disability in Inclusive Classroom

Course no.: SN Ed. 518

Nature of the course: Theoretical

Level: M.Ed.

Credit hours: 3

Semester: First

Teaching hours: 48

1. Course Description

The course deals with necessary concepts and characteristics of learning diversities, difficulties, and disabilities in an inclusive classroom. It aims to enable students to gain wider knowledge in identifying the differences, difficulties and disabilities in learning. The course further deals with specific strategies to be adopted to educate children with difficulties and diversities in an inclusive classroom.

2. General Objectives

The general objectives of this course are as follows.

- To provide the students with a deeper understanding of diversity, difficulty and disability in learning in an inclusive classroom;
- To enable the students to map out the dimensions of inclusion and exclusion from the education for all perspective;
- To prepare the students to manage diversity in an inclusive classroom;
- To equip the students to apply individualized instruction to respond to the diverse needs of students; and
- To develop, in the students, skills and knowledge needed for an inclusive classroom to address the diverse special educational needs of children

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none">• Explain the concepts of diversity• Differentiate between learning diversity, difficulty and disability in an inclusive classroom• Map out inclusion and exclusion from the perspective of education for all• Explain the main purpose of equalization of educational opportunities for children with special need from the EFA perspective	<p>Unit I: Concepts of Diversity (7)</p> <p>1.1. Diversity and disability</p> <ul style="list-style-type: none">1.1.1. Dimensions of diversity1.1.2. Sense of community and social acceptance1.1.3. Appreciation of student diversity <p>1.2. Mapping out inclusion and exclusion: Concept of the education for all (EFA) programme</p> <ul style="list-style-type: none">1.2.1. The assumptions of difference1.2.2. Concept of education for all1.2.3. Inclusion in effective schools1.2.4. Mapping out inclusion and exclusion <p>1.3. Towards equalization of educational opportunities</p>

<ul style="list-style-type: none"> • Describe the inclusive model of management of diversity • Outline the principles of equality and diversity • Explain the inter-cultural communication model from the perspective of inclusion • Explain the system-theoretical approach to inter-cultural communication 	<p>Unit II Management of Diversity: the Inter cultural Communication Perspective</p> <p>(9)</p> <p>2.1. The inclusive model of management of diversity 2.2. The principles of equality and diversity 2.3. Inclusive thinking and acting 2.4. The inclusive model of inter-cultural communication 2.5. The system-theoretical approach to inter-cultural communication</p>
<ul style="list-style-type: none"> • Explain the re-conceiving purposes of schooling for students with disabilities • Describe the ways of creating, managing and promoting inclusive classrooms • Identify the barriers to inclusion in the classroom from its critical dimensions • Explain the linkage between social inclusion, political change and expansion of inclusion 	<p>Unit III: The Making of the Inclusive School</p> <p>(13)</p> <p>3.1.Re-conceiving schooling for students with disabilities</p> <p style="margin-left: 20px;">3.1.1. The continuum of services 3.1.2. Inclusive school 3.1.3. Learner friendly school</p> <p>3.2.Creating and managing inclusive classrooms</p> <p style="margin-left: 20px;">3.2.1. Planning and designing an inclusive classroom 3.2.2. Preparing staff for inclusion 3.2.3. Preparing students for inclusion 3.2.4. Maintaining interactive communication in an inclusive classroom</p> <p>3.3.Social inclusion and political change 3.4.Expanding the concept of inclusion</p>
<ul style="list-style-type: none"> • Define the adaptive curriculum and instruction • Explain the process of an adapting curriculum and instruction • Describe basic concepts of differentiation techniques • Identify the ways of differentiating content, instruction, assessment and student output • Explain the ways of accommodating the differences of students with 	<p>Unit IV: Adaptive Curriculum and Instruction</p> <p>(10)</p> <p>4.1 Adaptive curriculum</p> <p style="margin-left: 20px;">4.1.1. Basic concept of differentiation 4.1.2. Ways of adapting curriculum</p> <p>4.2 Modifying curriculum content and adapting resources</p> <p style="margin-left: 20px;">4.2.1 Potential problems with modified curriculum 4.2.2 Potential problems with modified resource materials</p> <p>4.3 Adapting instruction</p> <p style="margin-left: 20px;">4.3.1 Ways of adapting instruction 4.3.2 Difficulties in adapting the teaching process</p> <p>4.4 Differentiating Techniques</p>

special needs	4.4.1 Differentiating student output, assessment and grading 4.4.2 Potential problems with differentiating student output, assessment and grading 4.5 Accommodating differences of students with special needs
<ul style="list-style-type: none"> • Discuss the trends and issues of special needs education • Describe the paradigm shift of special needs education • Examine the need and importance of the cross-disability approach to inclusion • Identify the ways of involving parents and community in SNE • Explore future perspectives of special needs education 	Unit V: Trends and Future Perspectives of Special Needs Education (9) 5.1 Trends and issues in SNE <ul style="list-style-type: none"> 5.1.1 Identification and labeling 5.1.2 Accepting cultural diversity 5.1.3 Accepting social inclusion 5.2 Developing positive attitudes 5.3 Paradigm shift in SNE <ul style="list-style-type: none"> 5.3.1 Normalization 5.3.2 Deinstitutionalization 5.3.3 Mainstreaming 5.3.4 Integration 5.3.5 Inclusion 5.4 Cross-disability approach 5.5 Parents and community involvement 5.6 Future perspectives of SNE

Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.

4. Instructional Techniques: Two types of instructional techniques are suggested to deliver the contents in the classroom: general and specific,. A brief account of these techniques follows.

4.1 General instructional techniques

Depending on the nature of the class, subject to be taught, individual differences of the students, and type of evaluation to be used to assess the achievements of the students, the following instructional techniques will be applied solely or in combination.

- Lecture,
- Discussion,
- Question-answer,
- Brain storming
- Group work and group presentation

4.2 Specific instructional techniques

Specific instructional techniques such as classroom presentation by the students, guided individual study, tutorial support on different contents and project work are suggested. The following specific instructional techniques are suggested for the selected units to

ensure students' active participation in teaching-learning process and to make the teaching-learning research-oriented.

Units	Specific Instructional Techniques
Unit I	The teacher will use the group discussion method to make the teaching learning process more learner-centered. The students will use the internet surfing method to collect the information and share it with friends. The teacher will add additional comments.
Unit II	The teacher will use the group discussion method to make the teaching learning process more learner-centered. The students will use internet surfing and the literature review method to collect the information and share it with friends. The teacher will add additional comments.
Unit III	The students will be divided into a group of three to five depending on the class size. Each group will visit inclusive schools to study the creation and management of inclusive classrooms and prepare a brief report including recommendations for improving inclusive classrooms. They will present the report in the classroom followed by discussion.
Unit IV	The teacher will use the group discussion method to make the teaching learning method more learner-centered. The students will perform literature review of the textbook and share it with their friends. The teacher will add additional comments.
Unit V	The students will be divided into groups and certain topics will be assigned to them. Each group will prepare a brief paper on paradigm shift in SNE or future of SNE from learning difficulty point of view in Nepal or cross-diversity, and present it in the class preferably using multimedia projector. The presentation will be followed by discussion and supplemented by teacher's comments.

5. Evaluation

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5.1 Internal Assessment (40%)

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• Second assessment (School visit and report submission)	10 marks
• Third assessment (Written examination)	10 marks
Total	40 marks

5.2 Semester/Final Examination (60%)

The Examination Division, Dean's Office, Faculty of Education will conduct the semester/final examination at the end of each semester. The distribution of marks for the types of questions to be asked in final examination is as follows:

• Objective type questions (10 multiple choice items x 1 marks)	10 marks
• Short answer questions (6 questions with 2 or-questions x 5 marks)	30 marks
• Long answer questions (2 questions with 1 or-question x 10 marks)	20 marks
Total marks	60

6. Recommended Books and Reference Materials

6.1 Recommended Books

Hoffman, E. (2001). *Inclusive thinking and acting: Intercultural communication and management of diversity in social work and practice*

Tom E.C. S., Edward A. P., James R.P. P., & Carol A. D. (2011). *Teaching students with special needs in inclusive settings* (6th Edition). Pearson Education Inc.PHI Learning Private Ltd. (For unit III)

Thomas, G., Walker, D., & Webb, J. (1998). *The making of the inclusive school*. London & New York: Routledge (For unit III & V)

Topping, K. & Maloney, S. (2005). *Inclusive education*. London & New York: Routledge. (For unit III)

Westwood, P. (2003). *Commonsense methods for children with special educational needs: Strategies for the regular classroom* (4th Edition). London & New York: Routledge Falmer. (For unit IV)

6.2 Reference Materials

Burrello, L., Lashley, C., & Beatty, E.E. (2001). *Educating all students together: How school leaders create unified systems*. London: Corwin Press, Inc. Sage Publications. (For unit I)

Clark, C., Dyson, A. & Milward, A. (1995). *Towards inclusive schools?* London: David Fulton Publishers Ltd. (For Unit I)

Deschenes, C., Ebeling, D. & Sprague, J. (1999). *Adapting the curriculum in inclusive classrooms*. New York: National Professional Resources. (For unit IV)

Evans, P & Vema, V. (Eds.) (1990). *Special education past, present and future*. The Falmer Press.

Heward, W. L. (2013). *Exceptional children: An introduction to special education* (10th Edition). Delhi: Pearson Education, Inc. (For unit V)

Nepali Education

- क. नेपा.शि. ५१५ : भाषाविज्ञान
- ख. नेपा.शि. ५१६ : नेपाली आख्यान र नाटक
- ग. नेपा. शि. ५१७ : पूर्वीय र पाश्चात्य समालोचना
- घ. नेपा. शि. ५१८ : प्रायोगिक भाषाविज्ञानका प्रमुख क्षेत्र

नेपा.शि. ५१५: भाषाविज्ञान
पाठ्यांश सङ्ख्या : नेपा.शि. ५१५
तह : एम.एड.
सेमेस्टर : पहिलो

पाठ्यांश प्रकृति : सैद्धान्तिक
क्रेडिट आवर : ३
पाठ्यघन्टा : ४८

१. पाठ्यांश परिचय

यो पाठ्यांश त्रिभुवन विश्वविद्यालय (त्रिवि), शिक्षाशास्त्र सङ्कायअन्तर्गत सेमेस्टर प्रणालीमा आधारित स्नातकोत्तर तह (एम. एड.) को पहिलो सेमेस्टरमा नेपाली शिक्षा विषयमा विशिष्टीकरण गर्न चाहने विद्यार्थीहरूका लागि तयार पारिएको हो । यस पाठ्यांशबाट भाषा र भाषाविज्ञान, ध्वनिविज्ञान, वर्णविज्ञान, रूपविज्ञान, वाक्यविज्ञान, अर्थविज्ञान एवम् तत्सम्बन्धी ज्ञान तथा सक्षमता विकासको अपेक्षा गरिएको छ ।

२. साधारण उद्देश्य

यस पाठ्यांशको अध्ययनपश्चात् विद्यार्थीहरू निम्नलिखित उद्देश्यहरू हासिल गर्न सक्षम हुने छन् :

- भाषा र भाषाविज्ञानसँग परिचित हुन,
- ध्वनिविज्ञान र यसका शाखाहरूको वर्णन गर्न,
- ध्वनि उत्पादन प्रक्रिया र ध्वनिहरूको वर्गीकरण गर्न,
- वर्णसिद्धान्त र वर्णविश्लेषण प्रक्रिया वर्णन गर्न,
- नेपाली भाषाका वर्णहरूको व्याख्या गर्न,
- रूपविश्लेषण तथा रूपायन प्रक्रियासँग परिचित हुन,
- सन्धिविज्ञानसम्बन्धी ज्ञान र क्षमताको अभिवृद्धि गर्न,
- भाषाका वाक्यताराएवक विशेषताहरू पहिचान गर्न,
- अर्थविश्लेषणका सिद्धान्तसँग परिचित भई भाषिक अर्थविश्लेषण गर्न ।

३. विशिष्ट उद्देश्य र पाठ्यविषय

विशिष्ट उद्देश्य	पाठ्यविषय
एकाइ एक : भाषा र भाषाविज्ञान (६)	
<ul style="list-style-type: none"> • भाषाको परिचय दिन, • भाषाका विशेषताहरूको वर्णन गर्न, • मानव र मानवेतर प्राणी (पशुपन्धी) को सम्प्रेषण व्यवस्थामा पाइने अन्तर बताउन, • भाषाविज्ञानको परिचय दिई यसका विशेषता बताउन, • भाषाविज्ञानका क्षेत्रहरूको परिचय दिन, • भाषाविज्ञानको उपयोगिता बताउन, • भाषाविज्ञान र भाषाशिक्षणको सम्बन्ध देखाउन। 	<p>१.१ भाषाको परिचय</p> <p>१.२ भाषाका विशेषताहरू</p> <p>१.३ मानव र मानवेतर प्राणीको सम्प्रेषण व्यवस्थामा पाइने अन्तर</p> <p>१.४ भाषाविज्ञानको परिचय र विशेषता</p> <p>१.५ भाषाविज्ञानका क्षेत्र</p> <p>१.६ भाषाविज्ञानको उपयोगिता</p> <p>१.७ भाषाविज्ञान र भाषाशिक्षणको सम्बन्ध</p>
एकाइ दुई : ध्वनिविज्ञान र वर्णविज्ञान (१०)	
<ul style="list-style-type: none"> • ध्वनिविज्ञानको परिचय दिन, • ध्वनिविज्ञानका शाखाहरूको वर्णन गर्न, • ध्वनि अवयवहरूको सचित्र वर्णन गर्न, • ध्वनि उत्पादन प्रक्रियाको वर्णन गर्न, • भाषिक ध्वनिहरूको पहिचान, वर्गीकरण र वर्णन गर्न, • खण्डीय ध्वनि र तदन्तर्गतका स्वर र व्यञ्जन ध्वनिको परिचय दिन, • खण्डेतर ध्वनि र तदन्तर्गतका मात्रा, अनुनासिकता, बलाधात र सुरको बयान गर्न, 	<p>२.१ ध्वनिविज्ञानको परिचय</p> <p>२.२ ध्वनिविज्ञानका शाखाहरू</p> <p>२.२.१ औच्चारिक ध्वनिविज्ञान</p> <p>२.२.२ सान्ध्यारिक ध्वनिविज्ञान</p> <p>२.२.३ श्रावणिक ध्वनिविज्ञान</p> <p>२.३ ध्वनि अवयवहरूको सचित्र वर्णन र ध्वनि उत्पादन प्रक्रिया</p> <p>२.४ ध्वनि उत्पादन प्रक्रिया</p> <p>२.५ ध्वनिहरूको पहिचान, वर्गीकरण र वर्णन</p> <p>२.५.१ खण्डीय ध्वनि</p> <p>२.५.२ खण्डेतर ध्वनि</p> <p>२.६ अन्तर्राष्ट्रिय ध्वनितात्त्विक वर्णमाला र तिनका</p>

<ul style="list-style-type: none"> अन्तर्राष्ट्रिय ध्वनितारीफेक वर्णमालाको परिचय दिई विशेषता बताउन, मानस्वरको परिचय दिन, प्रधान र गौण मानस्वरका विचको व्यतिरेक निर्धारण गर्न, वर्णविज्ञानको परिचय दिन, वर्ण, संवर्ण र लघुतम युग्मको अवधारणा स्पष्ट पार्न, वर्णविश्लेषण सिद्धान्तहरूको सोदाहरण चर्चा गर्न, वर्णविश्लेषण प्रक्रियाको व्याख्या गर्न, नेपाली भाषाका वर्णहरूको पहिचान, वर्गीकरण र वर्णन, विभेदक अभिलक्षणका आधारमा नेपाली वर्णहरूको पहिचान गर्न । 	<p>विशेषता</p> <p>२.७ मानस्वरको परिचय</p> <p>२.८ मानस्वरका प्रकार</p> <p>२.८.१ प्रधान मानस्वर</p> <p>२.८.२ गौण मानस्वर</p> <p>२.९ वर्णविज्ञानको परिचय</p> <p>२.१० वर्ण, संवर्ण र लघुतम युग्म</p> <p>२.११ वर्णविश्लेषण सिद्धान्त (व्यतिरेकी वितरण, परिपूरक वितरण, मुक्त परिवर्तन, तटस्थीकरण, ध्वन्यात्मक अनुरूपता, ढाँचागत समानता र मितव्ययिताको सिद्धान्त)</p> <p>२.१२ वर्णविश्लेषण प्रक्रिया</p> <p>२.१२ नेपाली भाषाका वर्णहरूको पहिचान, वर्गीकरण र वर्णन</p> <p>२.१३ विभेदक अभिलक्षणका आधारमा नेपाली वर्णहरूको पहिचान</p>
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एकाइ तीन : रूपविज्ञान (९)

<ul style="list-style-type: none"> रूपविज्ञानको परिचय दिन, रूपका विभिन्न प्रकारहरूलाई सोदाहरण चिनाउन, रूपविश्लेषणका पद्धतिहरूको सोदाहरण परिचय दिन, रूपविश्लेषणका सिद्धान्तहरूको चर्चा गर्न, रूपविश्लेषणसम्बन्धी अभ्यास गर्न, विभिन्न शब्दहरूको रूपायन प्रक्रिया बताउन, व्युत्पादनको परिचय दिन, व्युत्पादनमा सर्ग, समास र द्वित्व प्रक्रियाको सोदाहरण परिचय दिन, 	<p>३.१ रूपविज्ञानको परिचय</p> <p>३.२ रूपका प्रकार</p> <p>३.३ रूपविश्लेषणका प्रक्रिया र पद्धतिहरू</p> <p>३.४ रूपनिर्धारणका सैद्धान्तिक आधार</p> <p>३.५ रूपविश्लेषणको अभ्यास</p> <p>३.६ रूपायनका प्रक्रिया : (रूपायन कोटि र रूपसरणि)</p> <p>३.७ व्युत्पादन प्रक्रिया (सर्ग, समास र द्वित्व प्रक्रिया)</p>
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<ul style="list-style-type: none"> उदाहरणसहित वर्ग परिवर्तक र वर्ग अपरिवर्तक व्युत्पादनको चिनारी प्रस्तुत गर्न, रूपायन र व्युत्पादन प्रक्रियामा पाइने भिन्नता बताउन, आन्तरिक र बाह्य सन्धिको वर्णन गर्न, रूपध्वन्यात्मक परिवर्तनका नियमहरू बताउन। 	3.८ वर्ग परिवर्तक, उपवर्ग परिवर्तक र वर्ग अपरिवर्तक व्युत्पादन 3.९ रूपायन प्रक्रिया र व्युत्पादन प्रक्रियामा भिन्नता 3.१० सन्धिविज्ञान : आन्तरिक र बाह्य सन्धि 3.११ रूपध्वन्यात्मक परिवर्तनका नियमहरू
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एकाइ चार : वाक्यविज्ञान (१५)

<ul style="list-style-type: none"> वाक्यविज्ञानको परिचय दिन, पद, पदावली, उपवाक्य, वाक्य र सङ्कथनको परिचय दिन, पदावलीका शीर्ष र विशेषक छुट्याउन, उदाहरणसहित अन्तःकेन्द्रिक र बहिःकेन्द्रिक संरचनाको वर्णन गर्न, व्याकरणात्मक प्रकार्यको परिचय दिन, समतलीय संरचना र तहगत संरचनाको स्वरूप र उदाहरण प्रस्तुत गर्न, वाक्यका निकट घटकहरूको विश्लेषण गर्न र त्यसका सीमा उल्लेख गर्न, रूपान्तरण व्याकरणको परिचय दिन, चम्स्कीको रूपान्तरण व्याकरणका आधारभूत मान्यता प्रस्तुत गर्न, अनिवार्य र ऐच्छिक रूपान्तरण नियमको सोदाहरण व्याख्या गर्न, रूपान्तरण प्रक्रियालाई सोदाहरण चिनाउन, अवशेष र सञ्चलनको सोदाहरण परिचय दिन, पदावलीका मूल प्रतिवन्धनको व्याख्या गर्न, आश्रयकको अवधारणा प्रस्तुत गर्न, 	4.१ वाक्यविज्ञानको परिचय 4.२ पद, पदावली, उपवाक्य, वाक्य र सङ्कथनको परिचय 4.३ पदावलीका शीर्ष र विशेषक 4.४ अन्तःकेन्द्रिक र बहिःकेन्द्रिक संरचना 4.५ व्याकरणात्मक प्रकार्य 4.५.१ उद्देश्य 4.५.२ विधेय 4.५.३ कर्म 4.५.४ पूरक 4.६ तहगत तथा समतलीय संरचना 4.७ निकटघटक विश्लेषण र यसका सीमा 4.८ रूपान्तरण व्याकरणको परिचय 4.९ रूपान्तरण व्याकरणका आधारभूत मान्यता 4.१० रूपान्तरण नियम (अनिवार्य तथा ऐच्छिक)
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<ul style="list-style-type: none"> नेपाली भाषाका आधारभूत, सरल, संयुक्त र सन्निविष्ट वाक्यको परिचय दिन। 	<p>४.११ रूपान्तरण प्रक्रिया (अकरण, विध्यर्थक, सम्भावनार्थक तथा कर्मवाच्यान्तरण प्रक्रिया)</p> <p>४.११ अवशेष र सञ्चलन</p> <p>४.१२ पदावलीका मूल प्रतिबन्धन</p> <p>४.१३ आश्रयकको परिचय</p> <p>४.१४ आधारभूत, सरल, संयुक्त र सन्निविष्ट वाक्यहरू</p>
एकाइ पा“च : अर्थविज्ञान (८)	
<ul style="list-style-type: none"> अर्थविज्ञानको परिचय दिन, अर्थका व्याकरणात्मक, कोशीय, साहचर्यात्मक सन्दर्भपरक, धारणात्मक र सङ्घटनात्मक प्रकारको परिचय दिन, सङ्केत सिद्धान्तको अवधारणा प्रस्तुत गर्न, संरचनात्मक अर्थविज्ञानको परिचय दिई पर्यायवाची, अनेकार्थी, विपरीतार्थी, समावेशी, असमावेशी, समध्वन्यात्मक र समरूपात्मक शब्दमा पाइने अर्थ सम्बन्धको चर्चा गर्न, सन्निधान सिद्धान्तको अवधारणा प्रस्तुत गर्न, सोदाहरण सङ्घटकात्मक विश्लेषणको चिनारी दिन, उत्पादक अर्थविज्ञानको सैद्धान्तिक चर्चा गर्न <p>।</p>	<p>५.१ अर्थविज्ञानको परिचय</p> <p>५.२ अर्थका प्रकार</p> <p>५.२.१ व्याकरणात्मक अर्थ</p> <p>५.२.२ कोशीय अर्थ</p> <p>५.२.३ साहचर्यात्मक अर्थ</p> <p>५.२.४ सन्दर्भपरक अर्थ</p> <p>५.२.५ धारणात्मक अर्थ</p> <p>५.२.६ सङ्घटकात्मक अर्थ</p> <p>५.३ सङ्केत सिद्धान्त (सङ्केत त्रिकोण)</p> <p>५.४ संरचनात्मक अर्थविज्ञान र अर्थसम्बन्धहरू</p> <p>५.४.१ पर्यायवाची</p> <p>५.४.२ अनेकार्थी</p> <p>५.४.३ विपरीतार्थी</p>

	५.४.४ समावेशी
	५.४.५ असमावेशी
	५.४.६ समध्वन्यात्मक
	५.४.७ समरूपात्मक
	५.५ सन्निधान सिद्धान्त
	५.६ सझटकात्मक विश्लेषण
	५.७ उत्पादक अर्थविज्ञान

४. शिक्षण प्रविधि

यस पाठ्यांशको अध्ययन अध्यापनका क्रममा प्रत्येक एकाइमा आवश्यकताअनुसार व्याख्यान, प्रश्नोत्तर, छलफल तथा प्रस्तुतीकरण विधि र प्रक्रिया उपयोग गरिने छ। शिक्षणका क्रममा एकाइको प्रकृतिअनुरूप पाठ्यपुस्तक, सहायक पुस्तक, सन्दर्भ पुस्तक, पाठपत्र, तालिका र आरेखहरूको समेत उपयोग गरिने छ।

एकाइ एकमा निर्दिष्ट पाठ्यविषयको शिक्षणका क्रममा व्याख्यान, छलफल प्रश्नोत्तर, प्रदर्शन र खोज विधिको प्रयोग गर्ने। यस एकाइको अध्यापनका सिलसिलामा विद्यार्थीहरूलाई व्यक्तिगत कार्यका रूपमा निम्न कार्य गराउने :

- भाषाका विशेषताहरूको वर्णन
- मानव र मानवेतर प्राणीको सम्प्रेषण व्यवस्थामा पाइने अन्तरको व्याख्या

एकाइ दुईमा निर्दिष्ट पाठ्यविषयको शिक्षणका क्रममा व्याख्यान, छलफल प्रश्नोत्तर, प्रदर्शन र खोज विधिको प्रयोग गर्ने। यस एकाइको अध्यापनका सिलसिलामा विद्यार्थीहरूलाई व्यक्तिगत कार्यका रूपमा निम्नलिखित कार्य गराउने :

- ध्वनि उत्पादक अवयवहरूको सचित्र वर्णन
- वर्णविश्लेषणका सिद्धान्तहरूको सोदाहरण चर्चा
- विभेदक अभिलक्षणका आधारमा नेपाली वर्णहरूको वर्गीकरण र वर्णन

विद्यार्थीलाई एकाइ एक र दुईका उल्लिखित कार्यमध्ये कुनै एकमा व्यक्तिगत कार्य (अध्ययन पत्र लेखन) गर्न लगाउने । यो पहिलो प्रयोगात्मक कार्य हुने छ ।

एकाइ तीनमा निर्दिष्ट विषयवस्तुको शिक्षणका क्रममा व्याख्यान, छलफल, प्रश्नोत्तर र प्रदर्शन विधिको प्रयोग गर्ने । यस एकाइको अध्यापनका सिलसिलामा विद्यार्थीहरूलाई तोकिएका क्षेत्रमा सामूहिक कार्य (सामूहिक अध्ययन पत्र लेखन) गर्न लगाई कक्षामा प्रस्तुत गर्न लगाउने । यस कार्यका लागि निम्नलिखित शीर्षकहरू दिन सकिने :

- रूपविश्लेषणका पद्धति र सिद्धान्त
- निश्चित शब्द दिई रूपविश्लेषणका विभिन्न तरिकाद्वारा रूपको विश्लेषण
- आन्तरिक र बाह्य सन्धि
- रूपध्वन्यात्मक परिवर्तनका नियमहरू

एकाइ चारमा निर्दिष्ट विषयवस्तुको शिक्षणका क्रममा व्याख्यान, छलफल, प्रश्नोत्तर, प्रदर्शन र खोज विधिको प्रयोग गर्ने । यस एकाइको अध्यापनका सिलसिलामा विद्यार्थीहरूलाई तोकिएका क्षेत्रमा कार्य गर्न लगाई कक्षामा प्रस्तुत गर्न लगाउने । यस प्रयोजनका लागि निम्नानुसारका शीर्षकमा कार्य सम्पादन र प्रस्तुति गर्न गराउने :

- विभिन्न पद्धतिको उपयोगद्वारा प्रदत्त (दिइएका) वाक्यहरूको निकटघटक विश्लेषण
- रूपान्तरण व्याकरणका आधारभूत मान्यताहरूको वर्णन
- रूपान्तरणका अनिवार्य र ऐच्छिक नियमहरूको सोदाहरण चर्चा
- नेपाली भाषाका आधारभूत, सरल, संयुक्त र सन्निविष्ट वाक्यहरूको वर्णन

विद्यार्थीलाई एकाइ तीन र चारका उल्लिखित कार्यमध्ये कुनै एकमा सामूहिक कार्य (सामूहिक अध्ययन पत्र लेखन) गर्न लगाई कक्षामा प्रस्तुत गर्न लगाउनुपर्ने छ । उक्त प्रस्तुतिमा सहपाठी विद्यार्थी र शिक्षकद्वारा प्रश्न तथा टिप्पणी गरी उपयुक्त सुझाव प्रदान गर्न सकिने छ । यो दोस्रो प्रयोगात्मक कार्य हुने छ ।

एकाइ पाँचमा निर्दिष्ट विषयवस्तुको शिक्षणका क्रममा व्याख्यान, छलफल, प्रश्नोत्तर र प्रदर्शन विधिको प्रयोग गर्ने ।

५. मूल्याङ्कन प्रक्रिया

यस पाठ्यांशको मूल्यांकन प्रक्रिया दुई प्रकृतिको हुने छ :

(१) आन्तरिक मूल्यांकन

(२) बाह्य मूल्यांकन

५.१ आन्तरिक मूल्यांकन

आन्तरिक मूल्यांकनका लागि ४०% अंडकभार छुट्याइएको छ। उत्तर मूल्यांकनका लागि निर्दिष्ट प्रायोगिक कार्यअन्तर्गत रही विषय शिक्षकले निम्न आधारहरू अवलम्बन गर्नुपर्ने छ :

- | | | |
|-----|-------------------------|-----------|
| (क) | उपस्थिति | - ५ अंडक |
| (ख) | शिक्षण सिकाइमा सहभागिता | - ५ अंडक |
| (ग) | पहिलो आन्तरिक परीक्षा | - १० अंडक |
| (घ) | दोस्रो आन्तरिक परीक्षा | - १० अंडक |
| (ङ) | तेस्रो आन्तरिक परीक्षा | - १० अंडक |

आन्तरिक मूल्यांकनको विधि र प्रक्रिया निम्नानुसारको हुने छ :

- (क) विषय शिक्षकले उपस्थितिको ५ अंडक तोकिएको न्यूनतम मापदण्डदेखि शतप्रतिशत हाजिरीका आधारमा ($\frac{३}{४}/\frac{५}{५}$ अंडक) प्रदान गर्ने छन्।
- (ख) कक्षा सहभागिताको ५ अंडकमध्ये सम्बन्धित विषय शिक्षकले विद्यार्थीको कक्षा कार्यकलापको मूल्यांकन गरी अंडक प्रदान गर्ने छन्।
- (ग) माथि उल्लेख गरिएको पहिलो प्रयोगात्मक कार्यलाई पहिलो आन्तरिक परीक्षाका रूपमा र दोस्रो प्रयोगात्मक कार्यलाई दोस्रो आन्तरिक परीक्षाका रूपमा मूल्यांकन गरिने छ।
- (घ) तेस्रो आन्तरिक परीक्षामा पाठ्यांशले तोकेको बाह्य मूल्यांकनको ढाँचाअनुसार ३० देखि ६० पूर्णांडकको लिखित सुधार परीक्षा लिई त्यसलाई १० मा रूपान्तर गरी अंडक प्रदान गर्नुपर्ने छ।

नोट : उल्लिखित सबै परीक्षामा विद्यार्थीहरू अनिवार्य रूपमा समावेश हुनुपर्ने छ । विषय शिक्षक/विभागले ती परीक्षाको अभिलेख राख्नुपर्ने छ ।

५.२ बाह्य मूल्यांकन

बाह्य मूल्यांकनका लागि ६०% अंडकभार छुट्याइएको छ । उत्तर मूल्यांकनका लागि त्रिवि शिक्षाशास्त्र सङ्काय, डिनको कार्यालयद्वारा सेमेस्टरको अन्त्यमा परीक्षा लिईने छ । सो परीक्षामा सोधिने प्रश्नको प्रकृति, ढाँचा र त्यसको अंडकभार निम्नानुसार हुने छ :

प्रश्नको प्रकृति	सोधिने प्रश्न सङ्ख्या	उत्तर दिनुपर्ने प्रश्न सङ्ख्या	प्रति प्रश्न छुट्याइएको अंडक	पूर्णांक
समूह 'क' : बहुवैकल्पिक प्रश्न	१०	१०	१	१०
समूह 'ख' : छोटो उत्तर आउने प्रश्न	८ (दुई ओटा वैकल्पिक प्रश्नसहित)	६	५	३०
समूह 'ग' : लामो उत्तर आउने प्रश्न	३ (एक वैकल्पिक प्रश्नसहित)	२	१०	२०

६. सान्दर्भ सामग्री

गौतम, देवीप्रसाद (२०५८), नेपाली रूपान्तरण व्याकरण, काठमाडौँ : चिरञ्जीवी घिमिरे ।

गौतम, देवीप्रसाद, रामनाथ ओझा र शिखिशरण सुवेदी (२०६७), सामान्य भाषाविज्ञान, काठमाडौँ : पिनाकल पब्लिकेसन ।

चम्स्की, नोम (ई. १९८४) वाक्यविज्ञानका सैद्धान्तिक पक्ष (अनु. रामनाथ सहाय), राजस्थान हिन्दी ग्रन्थ अकादमी : जयपुर ।

तिवारी, भोलानाथ (सन् २०१६), आधुनिक भाषाविज्ञान, दिल्ली : लिपि प्रकाशन ।

न्यौपाने, टड्कप्रसाद (२०५१), भाषाविज्ञानको रूपरेखा, काठमाडौँ : नेपाल बुक डिपो ।

न्यौपाने, टड्कप्रसाद, भण्डारी, पारसमणि, न्यौपाने, दीपक र घिमिरे, तुल्सीराम (२०६९), सामान्य भाषाविज्ञान, काठमाडौँ : सनलाइट पब्लिकेशन ।

पोखरेल, माधवप्रसाद (२०६४), नेपाली ध्वनिविज्ञान र नेपालका भाषाको ध्वनि परिचय, काठमाडौँ : भुङ्गीपुराण प्रकाशन ।

बन्धु, चूडामणि (२०४८), भाषाविज्ञान, काठमाडौँ : साभा प्रकाशन ।

भट्टराई र अन्य, (२०७२), सामान्य तथा प्रायोगिक भाषाविज्ञान, काठमाडौँ : आठराई प्रकशन ।

भुसाल, केशव (२०७१), सामान्य भाषाविज्ञान, काठमाडौँ : पाठशाला प्रकाशन ।

यादव, योगेन्द्रप्रसाद र रेग्मी, भीमनारायण, (२०५८), भाषाविज्ञान, कीर्तिपुर : न्यू हीरा बुक्स इन्टरप्राइजेज ।

नेपा.शि. ५१६: नेपाली आख्यान र नाटक

पाठ्यांश प्रकृति : सैद्धान्तिक

पाठ्यांश संख्या : नेपा.शि. ५१६

क्रेडिट आवर : ३

तह : एम.एड.

पाठ्यघन्टा : ४८

सेमेस्टर : पहिलो

१. पाठ्यांश परिचय

यो पाठ्यांश त्रिभुवन विश्वविद्यालय (त्रिवि), शिक्षाशास्त्र सङ्काय अन्तर्गत सेमेस्टर प्रणालीमा आधारित स्नातकोत्तर तह (एम. एड.) को पहिलो सेमेस्टरमा नेपाली शिक्षा विषयमा विशिष्टीकरण गर्न चाहने विद्यार्थीहरूका लागि तयार पारिएको हो । यस पाठ्यांशमा आधुनिक नेपाली साहित्यका कथा, उपन्यास, नाटक र एकाइकी विधा एवम् बालसाहित्यको सिद्धान्त, विकासक्रम, प्रमुख मोड तथा प्रवृत्ति एवम् प्रतिनिधि साहित्यकारहरूका निर्धारित कृतिहरूको विवेचनात्मक क्षमता विकासको अपेक्षा गरिएको छ ।

२. साधारण उद्देश्य

यस पाठ्यांशको अध्ययनपछि विद्यार्थीहरू निम्नलिखित उद्देश्यहरू हासिल गर्न सक्षम हुने छन् :

- नेपाली कथा, उपन्यास, नाटक र एकाइकीको सैद्धान्तिक परिचय दिन,
- नेपाली कथा, उपन्यास, नाटक र एकाइकीको विकासक्रम, प्रमुख मोडहरू, धारा तथा मूल प्रवृत्ति एवम् विशेषता बताउन,
- निर्धारित कथाकार, उपन्यासकार र नाटककारहरूको परिचय एवम् प्रवृत्तिहरू उल्लेख गर्न,
- निर्धारित कथा, उपन्यास, नाटक र एकाइकीको आस्वादन, बोध तथा विश्लेषण गर्न,
- निर्धारित कथा, उपन्यास, नाटक र एकाइकीको कृतिगत विवेचना गर्न,
- बाल साहित्यको सामान्य परिचय, स्वरूप तथा प्रवृत्तिको परिचय दिन,
- नेपाली बालसाहित्यको विकास प्रक्रियाको रेखाइकन गर्न,
- निर्धारित बालसाहित्यकार र तिनका कृतिहरूको विवेचना गर्न ।

३. विशिष्ट उद्देश्य तथा पाठ्यविषय

विशिष्ट उद्देश्य	पाठ्यविषय
एकाइ एक : कथासिद्धान्त तथा आधुनिक नेपाली प्रतिनिधि कथाकार र तिनका कथाहरू (१३)	
<ul style="list-style-type: none"> • कथाको परिचय दिन, • कथाको स्वरूप र तीव्रहरू बताउन, • कथाका आधारभूत तीव्रहरू उल्लेख गर्ने, • कथाको साहित्यका अन्य विधासँगको सम्बन्ध स्पष्ट पार्ने, • नेपाली कथाको विकासक्रम र प्रमुख कालगत प्रवृत्तिहरूको चर्चा गर्ने, (प्राथमिक र माध्यमिक कालको सामान्य परिचय मात्र) • आधुनिक नेपाली कथाका प्रमुख धारागत प्रवृत्तिहरू बताउन, • प्रमुख कथाकार (गुरुप्रसाद मैनाली, विश्वेश्वरप्रसाद कोइराला, इन्द्रबहादुर राई, पारिजात र मनु ब्राजाकी) को परिचय एवम् कथागत मुख्य विशेषताहरूको निरूपण गर्ने, • प्रमुख कथाकारका कथाको रचनाविधान अनुसार विश्लेषण गर्ने, 	<ul style="list-style-type: none"> १.१ कथाको सैद्धान्तिक परिचय <ul style="list-style-type: none"> १.१.१ कथाको परिचय १.१.२ कथाको स्वरूप १.१.३ कथाका तीव्रहरू १.१.४ कथाको साहित्यका अन्य विधा (निबन्ध, एकाइकी, जीवनी र उपन्यास) सँगको सम्बन्ध १.२ नेपाली कथाको विकासक्रम र कालगत प्रवृत्ति <ul style="list-style-type: none"> १.२.१ प्राथमिक काल १.२.२ माध्यमिक काल १.२.३ आधुनिक काल १.२.४ आधुनिक नेपाली कथाका प्रमुख धारागत प्रवृत्तिहरू १.३ निर्धारित कथाकारहरूको परिचय एवम् प्रवृत्तिगत मुख्य विशेषताको विवेचना र मूल्याङ्कन १.४ कथातीव र प्रवृत्तिका आधारमा निर्धारित कथाहरूको विश्लेषण १.५ निर्धारित कथाका विशिष्ट पद्धतिहरूको व्याख्या १.६ प्रमुख कथाकार र तिनका कथा : <ul style="list-style-type: none"> १.६.१ गुरुप्रसाद मैनाली : कर्तव्य

<p>निर्धारित कथाका विशिष्ट पड्कितहरूको व्याख्या गर्ने ।</p> <ul style="list-style-type: none"> निर्धारित कथाहरूको शैक्षणिक उपादेयता बताउन, 	<p>१.६.२ विश्वेश्वरप्रसाद कोइराला : श्वेतभैरवी १.६.३ इन्द्रबहादुर राई : खीर १.६.४ पारिजात : सालीको बलात्कृत आँसु १.६.५ मनु ब्राजाकी : गुरु, चेला र माकुराको जालो १.६.७ उपर्युक्त कथाहरूको शैक्षणिक उपादेयता</p>
<p style="text-align: center;">एकाइ दुई : उपन्यास सिद्धान्त र प्रमुख आधुनिक नेपाली प्रतिनिधि उपन्यासकार तथा तिनका उपन्यासहरू (१६)</p>	
<ul style="list-style-type: none"> उपन्यासको परिचय दिन, उपन्यासको परिभाषा बताउन, उपन्यासका आधारभूत तत्त्वहरू उल्लेख गर्ने, उपन्यासको अन्य विधासँगको सम्बन्ध देखाउन, नेपाली उपन्यासको विकासक्रम र प्रमुख कालगत प्रवृत्तिहरूको चर्चा गर्ने, (प्राथमिक र माध्यमिक कालको सामान्य परिचय मात्र) आधुनिक नेपाली उपन्यासका प्रमुख धारागत प्रवृत्तिहरू बताउन, प्रमुख उपन्यासकारहरू (लैनसिंह वाङ्देल, विश्वेश्वरप्रसाद कोइराला, धुवचन्द्र गौतम, नारायण ढकाल र राजव) को परिचय एवम् प्रवृत्तिगत मुख्य विशेषताहरूको विवेचना गर्ने, प्रमुख उपन्यासकारका उपन्यासको औपन्यासिक तत्त्वका आधारमा 	<p>२.१ उपन्यासको सैद्धान्तिक परिचय</p> <p>२.१.१ उपन्यासको परिचय</p> <p>२.१.२ उपन्यासको परिभाषा</p> <p>२.१.३ उपन्यासका तीव्रहरू</p> <p>२.१.४ उपन्यासको साहित्यका अन्य विधा (कथा, नाटक र महाकाव्य) सँगको सम्बन्ध</p> <p>२.२ नेपाली उपन्यासको विकासक्रम र कालगत प्रवृत्ति</p> <p>२.२.१ प्राथमिक काल</p> <p>२.२.२ माध्यमिक काल</p> <p>२.२.३ आधुनिक काल</p> <p>२.२.४ आधुनिक नेपाली उपन्यासका प्रमुख धारागत प्रवृत्तिहरू</p> <p>२.३ निर्धारित उपन्यासकारहरूको परिचय एवम् प्रवृत्तिगत मुख्य विशेषताको विवेचना र मूल्यांकन</p> <p>२.४ उपन्यास तीव्रका आधारमा निर्धारित उपन्यासहरूको विश्लेषण</p> <p>२.५ निर्धारित उपन्यासका विशिष्ट पड्कितहरूको व्याख्या</p> <p>२.६ केही प्रमुख उपन्यासकार र तिनका उपन्यास :</p>

<p>विश्लेषण गर्न,</p> <ul style="list-style-type: none"> • निर्धारित उपन्यासका विशिष्ट पडक्तिहरूको व्याख्या गर्न, • निर्धारित उपन्यासहरूको शैक्षणिक उपादेयता देखाउन, 	<p>२.६.१ लैनसिंह बाडेल : लडगाडाको साथी</p> <p>२.६.२ विश्वेश्वरप्रसाद कोइराला : हिटलर र यहुदी</p> <p>२.६.३ धुवचन्द्र गौतम : भीमसेन -४ को खोजी</p> <p>२.६.४ नारायण ढकाल : प्रेतकल्प</p> <p>२.६.५ राजव : एटलान्टिक स्ट्रिट</p> <p>२.६.६ उपर्युक्त उपन्यासहरूको शैक्षणिक उपादेयता</p>
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एकाइ तिन : नाटक सैद्धान्त, प्रमुख आधुनिक नेपाली नाटककार र तिनका नाटक (१३)

<ul style="list-style-type: none"> • नाटकको परिचय दिन, • नाटकको परिभाषा बताउन, • नाटकका आधारभूत तत्त्वहरू उल्लेख गर्न, • नाटकको अन्य विधासँगको सम्बन्ध देखाउन, • नेपाली नाटकको विकासक्रम र प्रमुख कालगत प्रवृत्तिहरूको चर्चा गर्न, • आधुनिक नेपाली नाटकका प्रमुख धारागत प्रवृत्तिहरू बताउन, • एकाइकीको सैद्धान्तिक परिचय दिन, • नेपाली एकाइकीको विकासक्रम बताउन, • प्रमुख नाटककार (बालकृष्ण सम, गोपालप्रसाद रिमाल, गोविन्द गोठाले सरुभक्त र गोपाल पराजुली) को परिचय एवम् प्रवृत्तिगत मुख्य विशेषताहरू बताउन, • प्रमुख नाटक र एकाइकीका कथावस्तु, भाव, विचार, चरित्र, परिवेश, द्वन्द्व, भाषाशैली, रड्गमञ्च विधान, संरचना तथा शिल्प पक्षको 	<p>३.१ नाटकको सैद्धान्तिक परिचय</p> <p>३.१.१ नाटकको परिचय</p> <p>३.१.२ नाटकका तीव्रहरू</p> <p>३.१.३ नाटकको साहित्यका अन्य विधा (उपन्यास र महाकाव्य) सँगको सम्बन्ध</p> <p>३.२ नेपाली नाटकको विकासक्रम र कालगत प्रवृत्ति</p> <p>३.२.१ प्राथमिक काल</p> <p>३.२.२ माध्यमिक काल</p> <p>३.२.३ आधुनिक काल</p> <p>३.३ आधुनिक नेपाली नाटकका प्रमुख धारागत प्रवृत्तिहरू</p> <p>३.४ एकाइकीको सैद्धान्तिक परिचय</p> <p>३.५ नेपाली एकाइकीको विकासक्रम</p> <p>३.६ निर्धारित नाटककारहरूको परिचय एवम् प्रवृत्तिगत मुख्य विशेषताको विवेचना र मूल्याङ्कन</p> <p>३.७ नाट्यतत्त्व र प्रवृत्तिका आधारमा निर्धारित नाटकहरूको विश्लेषण</p> <p>३.८ निर्धारित नाटकका विशिष्ट पडक्तिको व्याख्या</p> <p>३.९ केही प्रमुख नाटक तथा एकाइकीको विश्लेषण</p> <p>३.९.१ बालकृष्ण सम : मुटुको व्यथा</p> <p>३.९.२ गोपालप्रसाद रिमाल : यो प्रेम !</p> <p>३.९.३ गोविन्द गोठाले : आत्मदर्शन</p> <p>३.९.४ सरुभक्त : असमय अमौसम</p>
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<p>पहिचान गर्न,</p> <ul style="list-style-type: none"> • प्रमुख नाटक र एकाइकीका विशिष्ट पञ्चितहरूको व्याख्या गर्न । (प्राथमिक र माध्यमिक कालको सामान्य परिचय मात्र) • निर्धारित उपन्यासहरूको शैक्षणिक उपादेयता देखाउन, 	<p>३.९.५ गोपाल पराजुली : गोलार्द्धका दुई छेउ ३.९.६ उपर्युक्त नाटक, एकाइकीको शैक्षणिक उपादेयता</p>
एकाइ चार : बालसाहित्य सिद्धान्त र बालसाहित्यिक कृतिहरू (६)	
<ul style="list-style-type: none"> • बालसाहित्यको परिचय दिन, • नेपाली बालसाहित्यको स्वरूप र प्रवृत्तिको संक्षिप्त चिनारी दिन, • नेपाली बालसाहित्यको विकास प्रक्रिया बताउन, • बालसाहित्यका कोणबाट बालकृतिहरू (पानीको थोपा, मलाई पुस्तक मनपर्छ र स्माइल प्लिज) को अध्ययन, विश्लेषण र मूल्यांकन गर्न, • बाल साहित्यकारहरूको परिचय र प्रवृत्ति ठम्याउन, • प्रमुख बालसाहित्यिक कृतिहरूको कृति समीक्षा गर्न,। (प्राथमिक र माध्यमिक कालको सामान्य परिचय मात्र) • भाषाशिक्षण र बालसाहित्यको सम्बन्ध देखाउन, 	<p>४.१ बालसाहित्यको परिचय ४.२ नेपाली बालसाहित्यको स्वरूप र प्रवृत्ति ४.३ नेपाली बालसाहित्यको विकास प्रक्रिया ४.४ बाल साहित्यका कोणबाट निर्धारित कृतिहरूको अध्ययन ४.४.१ कविताराम : पानीको थोपा ४.४.२ रमेश विकल : मलाई पुस्तक मनपर्छ ४.४.३ विनय कसजु : स्माइल प्लिज ४.४.४ उपर्युक्त बालसाहित्यिक कृतिहरूको शैक्षणिक उपादेयता ४.५ भाषाशिक्षण र बालसाहित्यको सम्बन्ध</p>

४. शिक्षण प्रविधि

यस पाठ्यांशको अध्ययन अध्यापनका क्रममा प्रत्येक एकाइमा आवश्यकताअनुसार व्याख्यान, प्रश्नोत्तर, छलफल तथा प्रस्तुतीकरण विधिको उपयोग गरिने छ । एकाइको प्रकृतिअनुरूप पाठ्यपुस्तक, सहायक पुस्तक, सन्दर्भ पुस्तक, पाठपत्र, तालिका र आरेखहरूको उपयोग गरिने छ ।

एकाइ एकमा

- १) आधुनिक नेपाली कथाका प्रमुख धारागत प्रवृत्तिगत टिप्पणी गर्न लगाउने ।
- २) गुरु, चेला र माकुराको जालो र बेकर स्ट्रिटका दुई आँखा कथाबाट विशिष्ट पञ्चितहरू छानेर कक्षामा प्रस्तुत गर्न लगाउने ।
- ३) विद्यार्थीहरूलाई लघु कथा लेख्न लगाई व्यक्तिगत वा समूहगत रूपमा छलफल गर्न लगाउने ।

एकाइ दुईमा

- १) आधुनिक नेपाली उपन्यासका प्रमुख धारागत प्रवृत्ति टिप्पणी गर्न लगाउने
- २) भीमसेन -४ को खोजी, पूर्वतिर, एटलान्टिक स्ट्रिटबाट विशिष्ट पञ्चितहरू छानेर कक्षामा प्रस्तुत गर्न लगाउने ।
(एकाइ एक र दुईलाई पहिलो प्रयोगात्मक कार्यका रूपमा लिइने छ ।)

एकाइ तीनमा

- १) असमय अमौसम, आत्मदर्शन (एकाइकी), र गोलार्द्धका दुई छेउ नाटकबाट विद्यार्थीहरूलाई ससाना समूह बनाई कृति समीक्षा गर्न लगाउने ।
- २) मञ्चित नाकट प्रत्यक्ष अवलोकन गराएर वा विद्यार्थी स्वयम्भाई मञ्चन गर्न लगाएर त्यसको बारेमा व्यक्तिगत वा समूहगत रूपमा छलफल गराउने ।

एकाइ चारमा

- पानीको थोपा, मलाई पुस्तक मन पर्छ र स्माइल प्लिज बालसाहित्यबाट समूहगत रूपमा कृति समीक्षा गर्न लगाउने ।
(एकाइ तीन र चारलाई दोस्रो प्रयोगात्मक कार्यका रूपमा लिइने छ ।)

५. मूल्यांकन प्रक्रिया

यस पाठ्यांशको मूल्यांकन प्रक्रिया दुई प्रकृतिको हुने छ :

(१) आन्तरिक मूल्यांकन

(२) बाह्य मूल्यांकन

५.१ आन्तरिक मूल्यांकन

आन्तरिक मूल्यांकनका लागि ४०% अंडकभार छुट्याइएको छ। उक्त मूल्यांकनका लागि निर्दिष्ट प्रायोगिक कार्यअन्तर्गत रही विषय शिक्षकले निम्न आधारहरू अवलम्बन गर्नुपर्ने छ :

- | | | |
|-----|-------------------------|-----------|
| (क) | उपस्थिति | - ५ अंडक |
| (ख) | शिक्षण सिकाइमा सहभागिता | - ५ अंडक |
| (ग) | पहिलो आन्तरिक परीक्षा | - १० अंडक |
| (घ) | दोस्रो आन्तरिक परीक्षा | - १० अंडक |
| (ङ) | तेस्रो आन्तरिक परीक्षा | - १० अंडक |

आन्तरिक मूल्यांकनको विधि र प्रक्रिया निम्न अनुसारको हुने छ :

- (क) विषय शिक्षकले उपस्थितिको ५ अंडक तोकिएको न्यूनतम मापदण्डदेखि शतप्रतिशत हाजिरीका आधारमा ($\frac{३}{४}/\frac{५}{५}$ अंडक) प्रदान गर्ने छन्।
- (ख) कक्षा सहभागिताको ५ अंडकमध्ये सम्बन्धित विषय शिक्षकले विद्यार्थीको कक्षा कार्यकलापको मूल्यांकन गरी अंडक प्रदान गर्ने छन्।
- (ग) माथि उल्लेख गरिएको पहिलो प्रयोगात्मक परीक्षालाई पहिलो आन्तरिक परीक्षाका रूपमा र दोस्रो प्रयोगात्मक परीक्षालाई दोस्रो आन्तरिक परीक्षाका रूपमा मूल्यांकन गरिने छ।

(घ) तेस्रो आन्तरिक परीक्षामा पाठ्यांशले तोकेको बाह्य मूल्यांकनको ढाँचाअनुसार ३० देखि ६० पूर्णांकको लिखित सुधार परीक्षा लिई त्यसलाई १० मा रूपान्तर गरी अंडक प्रदान गर्नुपर्ने छ ।

नोट : उल्लिखित सबै परीक्षामा विद्यार्थीहरू अनिवार्य रूपमा समावेश हुनुपर्ने छ । विषय शिक्षक/विभागले ती परीक्षाको अभिलेख राख्नुपर्ने छ ।

५.२ बाह्य मूल्यांकन

बाह्य मूल्यांकनका लागि ६०% अंडकभार छुट्याइएको छ । उक्त मूल्यांकनका लागि त्रि. वि. शिक्षाशास्त्र सङ्काय, डिनको कार्यालयद्वारा सेमेस्टरको अन्त्यमा परीक्षा लिईने छ । सो परीक्षामा सोधिने प्रश्नको प्रकृति, ढाँचा र त्यसको अंडकभार निम्नानुसार हुने छ :

प्रश्नको प्रकृति	सोधिने प्रश्न सङ्ख्या	उत्तर दिनुपर्ने प्रश्न सङ्ख्या	प्रतिप्रश्न छुट्याइएको अंडक	पूर्णांक
समूह 'क' : बहुवैकल्पिक प्रश्न	१०	१०	१	१०
समूह 'ख' : छोटो उत्तर आउने प्रश्न	८ (दुई ओटा वैकल्पिक प्रश्नसहित)	६	५	३०
समूह 'ग' : लामो उत्तर आउने प्रश्न	३ (एक वैकल्पिक प्रश्नसहित)	२	१०	२०

६ पाठ्यपुस्तक तथा सन्दर्भ सामग्री

आचार्य, सुषमा (२०५८), लैनसिंह बाङ्देलका औपन्यासिक कृतिको मूल्यांकन, काठमाडौँ :
पदमकुमार आचार्य ।

उपाध्याय, केशवप्रसाद (२०३२), रिमाल व्यक्ति र कृति, ललितपुर : साभा प्रकाशन ।

उपाध्याय, केशवप्रसाद (२०४५), बालकृष्ण समको दुःखान्त नाट्यचेतना, काठमाडौँ : ने.रा.प्र.प्र.

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उपाध्याय, केशवप्रसाद (२०५५), दुःखान्त नाटकको सूजनपरम्परा, काठमाडौँ : ने.रा.प्र.प्र. ।

उपाध्याय, केशवप्रसाद (२०५९), नेपाली नाटक तथा रहगमञ्च उद्भव र विकास, काठमाडौँ : विद्यार्थी पुस्तक भण्डार ।

एटम, नेत्र (२०६१), समालोचनाको स्वरूप, ललितपुर : साभा प्रकाशन ।

ओझा, रामनाथ (२०६७), उपन्यास सिद्धान्त र नेपाली उपन्यास, काठमाडौँ : पिनाकल पब्लिकेसन ।

कविताराम (२०३८), पानीको थोपा, ललितपुर : साभा प्रकाशन । (एकाइ ४ का लागि)

कसजु, विनय (२०६६), स्माइल प्लिज, काठमाडौँ, बालसंसार । (एकाइ ४ का लागि)

कोइराला, विश्वेश्वरप्रसाद (२०७३), श्वेतभैरवी, काठमाडौँ : लिपि बुक्स प्रा. लि. । (एकाइ १ का लागि)

कोइराला, विश्वेश्वरप्रसाद (२०४०), हिटलर र यहुदी, काठमाडौँ : साभा प्रकाशन । (एकाइ २ का लागि)

गोठाले, गोविन्द (२०३४), भोको घर, काठमाडौँ : साभा प्रकाशन । (एकाइ ३ का लागि)

गौतम, धुवचन्द्र (२०६१), भीमसेन ४ को खोजी, नेपालगञ्ज : मध्यपश्चिमाञ्चल साहित्य संस्कृति कला प्रतिष्ठान । (एकाइ २ का लागि)

गौतम, नरहरि (२०६९), नाटक समालोचना, पोखरा : स्वयम् ।

गौतम, नरहरि (२०६९), नाट्य विमर्श, पोखरा : स्वयम् ।

ढकाल, नारायण (२०६५), प्रेतकल्प, काठमाडौँ : साभा प्रकाशन । (एकाइ २ का लागि)

नेपाल, घनश्याम (२०६१) आख्यानका कुरा, काठमाडौँ : एकता बुक्स ।

नेपाली भाषाशिक्षा विभाग, सम्प्रेषण, अड्क १-७ ।

पराजुली, गोपाल (२०३१), गोलार्द्धका दुई छेउ, काठमाडौँ : साभा प्रकाशन ।

प्रधान, कृष्णचन्द्रसिंह (२०३७), नेपाली उपन्यास र उपन्यासकार, ललितपुर : साभा प्रकाशन ।

पारिजात (२०४३), साल्नीको बलात्कृत आँसु, काठमाडौँ : साहित्य सन्ध्या परिवार । (एकाइ १ का लागि)

बराल, ईश्वर (२०२९), भ्यालबाट, ललितपुर : साभा प्रकाशन ।

बराल, ऋषिराज (२०६५), उपन्यासको सौन्दर्य शास्त्र, ललितपुर : साभा प्रकाशन ।

बराल, कृष्णहरि र नेत्र एटम (२०५६), उपन्यास सिद्धान्त र नेपाली उपन्यास, ललितपुर : साभा प्रकाशन ।

बाङ्देल, लैनसिह (२००८), लडगडाको साथी, कलकत्ता : जसवीर तामाड । (एकाइ २ का लागि)

ब्राजाकी, मनु (२०५२), भविष्य यात्रा, ललितपुर : साभा प्रकाशन । (एकाइ १ का लागि)

भट्टराई, गोविन्दराज (२०६१), आख्यानको उत्तरआधुनिक पर्यावलोकन, काठमाडौँ : रत्नपुस्तक भण्डार ।

मैनाली, गुरुप्रसाद (२०६०), नासो, काठमाडौँ : साभा प्रकाशन । (एकाइ १ का लागि)

राई, इन्द्रबहादुर (२०२८), कथास्था, ललितपुर : साभा प्रकाशन । (एकाइ १ का लागि)

राई, इन्द्रबहादुर (२०३१), नेपाली उपन्यासका आधारहरू, ललितपुर : साभा प्रकाशन ।

रिमाल, गोपालप्रसाद (२०१५), यो प्रेम †, ललितपुर : साभा प्रकाशन । (एकाइ ३ का लागि)

विकल, रमेश (२०६३), मलाई पुस्तक मनपर्छ, काठमाडौँ : बुक प्यालेस । (एकाइ ४ का लागि)

शर्मा, तारानाथ (२०३९), नेपाली साहित्यको इतिहास, काठमाडौँ : सहयोगी प्रकाशन ।

शर्मा, तारानाथ (२०३९) सम र समका कृति, ललितपुर : साभा प्रकाशन ।

शर्मा, मोहनराज (२०५६), समकालीन समालोचना : सिद्धान्त र प्रयोग, काठमाडौँ : ने.रा.प्र.प्र. ।

शर्मा, शरदचन्द्र (२०५०), माध्यमिक नेपाली गद्याख्यान, काठमाडौँ : ने.रा.प्र.प्र. ।

श्रेष्ठ, दयाराम र मोहनराज शर्मा (२०४६), नेपाली साहित्यको सङ्क्षिप्त इतिहास, काठमाडौं : साभा प्रकाशन ।

श्रेष्ठ, दयाराम, सम्पा. (२०३९), पच्चस वर्षका नेपाली कथा, काठमाडौं : ने.रा.प्र.प्र. ।

सम, बालकृष्ण (२०६७), मुटुको व्यथा, काठमाडौं : साभा प्रकाशन । (एकाइ ३ का लागि)

सरुभक्त (२०५४), असमय अमौसम, काठमाडौं : भारद्वाज प्रकाशन । (एकाइ ३ का लागि) ।

सुवेदी, राजेन्द्र (२०५६), नेपाली उपन्यास परम्परा र प्रवृत्ति, काठमाडौं : भूमिका प्रकाशन ।

नेपा. शि. ५१७: पूर्वीय र पाश्चात्य समालोचना

पाठ्यांश प्रकृति : सैद्धान्तिक

पाठ्यांश संख्या : नेपा. शि. ५१७

क्रेडिट आवर : ३

तह : एम. एड.

पाठ्यघन्टा : ४८

सेमेस्टर : पहिलो

१. पाठ्यांश परिचय

यो पाठ्यांश त्रिभुवन विश्वविद्यालय (त्रिवि), शिक्षाशास्त्र सङ्कायअन्तर्गत सेमेस्टर प्रणालीमा आधारित स्नातकोत्तर तह (एम. एड.) को पहिलो सेमेस्टरमा नेपाली शिक्षा विषयमा विशिष्टीकरण गर्न चाहने विद्यार्थीहरूका लागि तयार पारिएको हो। यस पाठ्यांशबाट पूर्वीय समालोचनाअन्तर्गत काव्यको परिभाषा, काव्यहेतु र प्रयोजन, शब्दशक्ति, रससिद्धान्त र ध्वनिसिद्धान्त, अलड्कार, रीति र वक्रोक्तिसिद्धान्त; पाश्चात्य समालोचनाअन्तर्गत परिष्कारवाद, स्वच्छन्दतावाद, यथार्थवाद, अतियथार्थवाद, विसङ्गतिवाद, उत्तर आधुनिकतावाद; पाश्चात्य समालोचना प्रणालीअन्तर्गत नीतिपरक समालोचना प्रणाली, समाजपरक समालोचना प्रणाली, लैझिगिक र पर्यावरणीय समालोचना प्रणाली एवम् तत्सम्बन्धी प्रायोगिक कार्यको क्षमता विकासको अपेक्षा गरिएको छ।

२. साधारण उद्देश्य

यस पाठ्यांशको अध्ययनपछि विद्यार्थीहरू निम्नलिखित उद्देश्यहरू हासिल गर्न सक्षम हुने छन् :

- पूर्वीय साहित्य सिद्धान्तहरूको परिचय दिन,
- पूर्वीय साहित्यका सिद्धान्तको समीक्षा गर्न,
- पाश्चात्य साहित्यका प्रमुख वादहरूको विश्लेषण गर्न,
- पाश्चात्य साहित्य सिद्धान्तका प्रमुख समालोचना प्रणालीको विवेचना गर्न,
- पूर्वीय र पाश्चात्य समालोचना सिद्धान्तका आधारमा प्रायोगिक कार्य गर्न।

३. विशिष्ट उद्देश्य र पाठ्यविषय

विशिष्ट उद्देश्य	पाठ्यविषय
एकाइ एक : पूर्वीय साहित्यमा काव्य र शब्दशक्ति (४)	
<ul style="list-style-type: none"> • काव्यको परिचय दिन, • काव्यहेतुको जानकारी दिन, • काव्यको प्रयोजन उल्लेख गर्न, • शब्दशक्तिको परिचय र प्रकारबारे बताउन। 	१.१ काव्यको परिचय १.२ काव्यहेतु १.३ काव्य प्रयोजन १.४ शब्दशक्ति (अभिधा, लक्षणा र व्यञ्जना)
एकाइ दुई : रससिद्धान्त र ध्वनिसिद्धान्त (८)	
<ul style="list-style-type: none"> • रसको अर्थ र परिभाषा बताउन, • रस सामग्रीको चर्चा गर्न, • रससूत्रको व्याख्यासम्बन्धी मतमतान्तर उल्लेख गर्न, • रसको साधारणीकरणबारे बताउन, • रसका प्रकारहरू उल्लेख गर्न, • रससिद्धान्तको समीक्षाबारे बताउन, • ध्वनिसिद्धान्तको परिचय दिन, • ध्वनिसिद्धान्तका प्रमुख स्थापना उल्लेख गर्न, • ध्वनिको वर्गीकरण गर्न, • ध्वनिसिद्धान्तको समीक्षा गर्न। 	२.१ रससिद्धान्त २.१.१ रसको अर्थ र परिभाषा २.१.२ रस सामग्री २.१.३ रससूत्रको व्याख्या २.१.४ रसको साधारणीकरण २.१.५ रसका प्रकार २.१.६ रससिद्धान्तको समीक्षा २.२ ध्वनिसिद्धान्त २.२.१ ध्वनिको अर्थ र परिभाषा २.२.२ ध्वनिसिद्धान्तका प्रमुख स्थापना २.२.३ ध्वनिको वर्गीकरण <ul style="list-style-type: none"> ● रसध्वनि ● अलङ्कार ध्वनि ● वस्तुध्वनि २.२.५ ध्वनिसिद्धान्तको समीक्षा
एकाइ तीन : अलङ्कार सिद्धान्त, रीतिसिद्धान्त र वकोक्तिसिद्धान्त (१२)	
<ul style="list-style-type: none"> • अलङ्कारको अर्थ र परिभाषा बताउन, • अलङ्कार सिद्धान्तका प्रमुख मान्यता उल्लेख गर्न, 	३.१.१ अलङ्कारको अर्थ र परिभाषा ३.१.२ अलङ्कार सिद्धान्तका प्रमुख मान्यता ३.१.३ अलङ्कारका भेद

<ul style="list-style-type: none"> • शब्दालङ्कार र अर्थालङ्कारका भेदहरू बताउन, • साहित्यमा अलङ्कारको महत्त्व बताउन, • रीतिको अर्थ र परिभाषा बताउन, • रीतिसिद्धान्तका प्रमुख मान्यताहरूको वर्णन गर्न, • रीतिका भेदहरू उल्लेख गर्न, • रीतिसिद्धान्तको समीक्षा गर्न, • वक्रोक्तिको अर्थ र परिभाषा बताउन, • वक्रोक्तिवादका प्रमुख मान्यताहरूको चर्चा गर्न, • लोकशैलीको परिचय दिन, • वक्रशैली र लोकशैलीको फरक बताउन, • वक्रोक्तिका प्रकारहरू उल्लेख गर्न, • वक्रोक्ति सिद्धान्तको समीक्षा गर्न । 	<ul style="list-style-type: none"> • शब्दालङ्कार : अनुप्रास, यमक र श्लेष • अर्थालङ्कार : उपमा, रूपक, उत्प्रेक्षा, दृष्टान्त, अतिशयोक्ति, समासोक्ति, अर्थान्तरन्यास, स्वभावोक्ति <p>३.१.४ साहित्यमा अलङ्कारको महत्त्व</p> <p>३.२ रीतिसिद्धान्त</p> <p>३.२.१ रीतिको अर्थ र परिभाषा</p> <p>३.२.२ रीतिसिद्धान्तका प्रमुख मान्यता</p> <p>३.२.३ रीतिको भेदहरू : वैदर्भी, गौडी र पाञ्चाली</p> <p>३.२.४ रीतिसिद्धान्तको समीक्षा</p> <p>३.३ वक्रोक्ति सिद्धान्त</p> <p>३.३.१ वक्रोक्तिको अर्थ र परिभाषा</p> <p>३.३.२ वक्रोक्तिसिद्धान्तका प्रमुख मान्यता</p> <p>३.३.३ लोकशैलीको परिचय</p> <p>३.३.४ वक्रशैली र लोकशैली</p> <p>३.३.४ वक्रोक्तिका प्रकार : वर्णविन्यास वक्रता, पदपूर्वार्द्ध वक्रता, पदपरार्द्ध वक्रता, वाक्यवक्रता, प्रकरण वक्रता, प्रबन्ध वक्रता</p> <p>३.३.५ वक्रोक्ति सिद्धान्तको समीक्षा</p>
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एकाइ चार : प्रमुख साहित्यिक वादहरू (१०)

<ul style="list-style-type: none"> • परिष्कारवादका आधारभूत मान्यता बताउन, • परिष्कारवादका शक्ति र सीमा उल्लेख गर्न, • नेपाली साहित्यमा परिष्कारवादको प्रयोगको स्थिति पहिल्याउन, • स्वच्छन्दतावादका आधारभूत मान्यताहरू 	<p>४.१ परिष्कारवाद</p> <p>४.१.१ परिष्कारवादको प्रारम्भ र विकास</p> <p>४.१.१ परिष्कारवादका आधारभूत मान्यता</p> <p>४.१.२ परिष्कारवादको समीक्षा</p> <p>४.१.३ नेपाली साहित्यमा परिष्कारवादी</p>
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<ul style="list-style-type: none"> • विसङ्गतिवादका शक्ति र सीमाहरू बताउन, • नेपाली साहित्यमा विसङ्गतिवादको प्रयोगको स्थिति पहिल्याउन, • उत्तर आधुनिकतावादको पृष्ठभूमि र विकासको चर्चा गर्न, • उत्तर आधुनिकतावादका मूलभूत मान्यताहरू बताउन, • आधुनिकता, आधुनिकतावाद र उत्तर आधुनिकतावादको बारेमा बताउन, • उत्तर आधुनिकतावादका शक्ति र सीमा बताउन, • नेपाली साहित्यमा उत्तर आधुनिकतावादको प्रयोग र प्रभावको समीक्षा गर्न । 	<p>५.१.१ विसङ्गतिवादका आधारभूत मान्यता</p> <p>५.१.२ विसङ्गतिवादको समीक्षा</p> <p>५.१.३ नेपाली साहित्यमा विसङ्गतिवादी मान्यताको प्रयोगको</p> <p>५.३ उत्तर आधुनिकतावाद</p> <p>५.३.१ उत्तर आधुनिकतावादको पृष्ठभूमि र विकास</p> <p>५.३.२ उत्तर आधुनिकतावादका मूलभूत मान्यता</p> <p>५.३.३ आधुनिकता र उत्तर आधुनिकतावाद</p> <p>५.३.४ उत्तर आधुनिकतावादको समीक्षा</p> <p>५.३.५ नेपाली साहित्यमा उत्तर आधुनिकतावादी मान्यताको प्रयोग</p>
<p>एकाइ छ : नीतिपरक, समाजपरक, लैड्गिक र पर्यावरणीय समालोचना प्रणाली (१०)</p> <ul style="list-style-type: none"> • नीतिपरक समालोचना प्रणालीको विकासका क्रममा देखा परेका मान्यताहरूको उल्लेख गर्न, • नीतिपरक समालोचनाका आधारभूत मान्यताहरू उल्लेख गर्न, • नीतिपरक समालोचनाका शक्ति र सीमा बताउन, • समाजपरक समालोचनाको पृष्ठभूमि र विकास प्रक्रिया उल्लेख गर्न, • समाजपरक समालोचना प्रणालीका आधारभूत मान्यताहरूको चर्चा गर्न, • लैड्गिक समालोचनाको पृष्ठभूमि र विकास बताउन, • लैड्गिक समालोचनाका प्रमुख मान्यता र 	<p>६.१ नीतिपरक समालोचना प्रणाली</p> <p>६.१.१ नीतिपरक समालोचना प्रणालीको परिचय र विकास</p> <ul style="list-style-type: none"> • प्लेटोको नीतिवादी मान्यता • कलावाद विरुद्धको नीतिवादी स्थापना • मानवता तथा नवमानवतावादको नीतिपरक अवधारणा <p>६.१.२ नीतिपरक समालोचना प्रणालीका आधारभूत मान्यता</p> <p>६.१.३ नीतिपरक समालोचनाको समीक्षा</p> <p>६.२ समाजपरक समालोचना प्रणाली</p> <p>६.२.१ समाजपरक समालोचनाको परिचय र विकास</p>

<ul style="list-style-type: none"> उपलब्धि बताउन, • पर्यावरणीय समालोचनाको परिचय, विकास र मान्यता बताउन, 	<ul style="list-style-type: none"> ● टेनको क्षण, जाति र पर्यावरणसम्बन्धी स्थापना ● मार्क्स, कडबेल र जर्ज लुकाजका समाजपरक स्थापना <p>६. २. २ समाजपरक समालोचना प्रणालीका आधारभूत मान्यता</p> <p>६. ३ लैड्गिक समालोचना</p> <p>६. ३. १ लैड्गिक समालोचनाको परिचय</p> <p>६. ३. २ लैड्गिक समालोचनाका प्रमुख मान्यता</p> <p>६. ३. ३ लैड्गिक समालोचनाको उपलब्धि</p> <p>६. ४. पर्यावरणीय समालोचना</p> <p>६. ४. १ पर्यावरणीय समालोचनाको परिचय र विकास</p> <p>६. ४. २ पर्यावरणीय समालोचनाका प्रमुख मान्यता</p>
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४. शिक्षण प्रविधि

यस पाठ्यांशको अध्ययन अध्यापनका क्रममा प्रत्येक एकाइमा आवश्यकताअनुसार व्याख्यान, प्रश्नोत्तर, छलफल तथा प्रस्तुतीकरण विधिको उपयोग गरिने छ । एकाइको प्रकृतिअनुरूप पाठ्यपुस्तक, सहायक पुस्तक, सन्दर्भपुस्तक, पाठपत्र, तालिका र आरेखहरूको उपयोग गरिने छ ।

एकाइ एकमा विद्यार्थीलाई शब्दशक्ति : अभिधा, लक्षणा र व्यञ्जनाका बारेमा समूहगत छलफल गराउने ।

एकाइ दुईमा विद्यार्थीलाई रसका प्रकार र ध्वनि सिद्धान्तसम्बन्धी समीक्षा गर्न लगाई कक्षा प्रस्तुति र टिप्पणी गर्न लगाउने ।

एकाइ तीनमा अलड्कार र रीतिका भेद तथा वक्रोक्तिका प्रकारसम्बन्धी तथा गोष्ठीपत्र लेखन गराई कक्षामा प्रस्तुत गर्न लगाउने ।

आन्तरिक परीक्षाको प्रयोजनका लागि पहिलो प्रयोगात्मक कार्यमा शिक्षकले व्यक्तिगत वा समूहगत रूपमा एकाइ एक, दुई र तीनबाट पूर्वीय साहित्य सिद्धान्तका आधारमा नेपाली साहित्यका विभिन्न विधाका कृतिहरूको समीक्षा गर्न लगाई कक्षामा प्रस्तुत गर्न लगाउने ।

एकाइ चारमा नेपाली साहित्यमा परिष्कारवादी, स्वच्छन्दतावादी, यथार्थवाद, प्रगतिवाद र अतियथार्थवादको प्रयोग खोजी कक्षामा प्रस्तुत गर्न लगाउने ।

एकाइ पाँचमा नेपाली साहित्यमा विसङ्गतिवादी मान्यताको प्रयोग एवम् उत्तर आधुनिकतावादको प्रभाव र स्वरूप : द्वितीय सोतमा आधारित अध्ययनपत्र लेखन गराउने ।

एकाइ छमा विद्यार्थीलाई व्यक्तिगत वा सामूहिक रूपमा आधुनिक नेपाली साहित्यमा क्षण, जाति र पर्यावरण, लैड्गिक प्रयोगको खोजी तथा विश्लेषण गर्न लगाउने ।

आन्तरिक परीक्षाको प्रयोजनका लागि दोस्रो प्रयोगात्मक कार्यमा शिक्षकले व्यक्तिगत वा समूहगत रूपमा एकाइ चार, पाँच र छबाट पाश्चात्य साहित्य सिद्धान्तका आधारमा नेपाली साहित्यका विभिन्न विधाका कृतिहरूको समीक्षा गर्न लगाई कक्षामा प्रस्तुत गर्न लगाउने ।

५. मूल्याङ्कन प्रक्रिया

यस पाठ्यांशको मूल्याङ्कन प्रक्रिया दुई प्रकृतिको हुने छ :

(१) आन्तरिक मूल्याङ्कन

(२) बाह्य मूल्याङ्कन

५.१ आन्तरिक मूल्याङ्कन

आन्तरिक मूल्याङ्कनका लागि ४०% अड्कभार छुट्याइएको छ । उक्त मूल्याङ्कनका लागि निर्दिष्ट प्रायोगिक कार्यअन्तर्गत रही विषय शिक्षकले निम्न आधारहरू अवलम्बन गर्नुपर्ने छ :

(क)	उपस्थिति	- ५ अड्क
(ख)	शिक्षण सिकाइमा सहभागिता	- ५ अड्क
(ग)	पहिलो आन्तरिक परीक्षा	- १० अड्क
(घ)	दोस्रो आन्तरिक परीक्षा	- १० अड्क
(ङ)	तेस्रो आन्तरिक परीक्षा	- १० अड्क

आन्तरिक मूल्यांकनको विधि र प्रक्रिया निम्नअनुसारको हुने छ :

- (क) विषय शिक्षकले उपस्थितिको ५ अड्क तोकिएको न्यूनतम मापदण्डदेखि शतप्रतिशत हाजिरीका आधारमा (३/४/५ अड्क) प्रदान गर्ने छन् ।
- (ख) कक्षा सहभागिताको ५ अड्कमध्ये सम्बन्धित विषय शिक्षकले विद्यार्थीको कक्षा कार्यकलापको मूल्यांकन गरी अड्क प्रदान गर्ने छन् ।
- (ग) माथि उल्लेख गरिएको पहिलो प्रयोगात्मक परीक्षालाई पहिलो आन्तरिक परीक्षाका रूपमा र दोस्रो प्रयोगात्मक परीक्षालाई दोस्रो आन्तरिक परीक्षाका रूपमा मूल्यांकन गरिने छ ।
- (घ) तेस्रो आन्तरिक परीक्षामा पाठ्यांशले तोकेको बाह्य मूल्यांकनको ढाँचाअनुसार ३० देखि ६० पूर्णांकको लिखित सुधार परीक्षा लिई त्यसलाई १० मा रूपान्तर गरी अड्क प्रदान गर्नुपर्ने छ ।

नोट : उल्लिखित सबै परीक्षामा विद्यार्थीहरू अनिवार्य रूपमा समावेश हुनुपर्ने छ । विषय शिक्षक/विभागले ती परीक्षाको अभिलेख राख्नुपर्ने छ ।

५.२ बाह्य मूल्यांकन

बाह्य मूल्यांकनका लागि ६०% अड्कभार छुट्याइएको छ । उक्त मूल्यांकनका लागि त्रि. वि. शिक्षाशास्त्र सङ्काय, डिनको कार्यालयद्वारा सेमेस्टरको अन्त्यमा परीक्षा लिईने छ । सो परीक्षामा सोधिने प्रश्नको प्रकृति, ढाँचा र त्यसको अड्कभार निम्नानुसार हुने छ :

प्रश्नको प्रकृति	सोधिने प्रश्न सङ्ख्या	उत्तर दिनुपर्ने प्रश्न सङ्ख्या	प्रतिप्रश्न छुट्याइएको अंक	पूर्णाङ्क
समूह 'क' : बहुवैकल्पिक प्रश्न	१०	१०	१	१०
समूह 'ख' : छोटो उत्तर आउने प्रश्न	८ (दुई ओटा वैकल्पिक प्रश्नसहित)	६	५	३०
समूह 'ग' : लामो उत्तर आउने प्रश्न	३ (एक वैकल्पिक प्रश्नसहित)	२	१०	२०

६. सन्दर्भ सामग्री

अधिकारी, इन्ड्रविलास (२०६१), पश्चिमी साहित्य सिद्धान्त, काठमाडौँ : साभा प्रकाशन।

उपाध्याय, केशवप्रसाद (२०५९), साहित्य प्रकाश, (दोस्रो संस्क.) काठमाडौँ : साभा प्रकाशन।

ओभा, रामनाथ (२०७६), पूर्वीय र पाश्चात्य समालोचना, काठमाडौँ : करुधरा पब्लिकेसन।

खनाल, राजेन्द्र (२०७५), लैडिगिक समालोचना : सिद्धान्त र प्रयोग, काठमाडौँ : सनलाइट पब्लिकेसन।

गायकवाड, ज्ञानराज-काशीनाथ, पाश्चात्य साहित्य सिद्धान्त और विविधवाद, कानपुर : साहित्य रत्नालय।

गुप्त, शान्तिस्वरूप, पाश्चात्य काव्यशास्त्र के सिद्धान्त, नई दिल्ली : अशोक प्रकाशन।

गौतम, कृष्ण, (मिन), उत्तराध्युनिक जिज्ञासा, काठमाडौँ : भृकुटी प्रकाशन।

गौतम, कृष्ण, मिन), अनेक रूप अनेक पठन, काठमाडौँ : साभा प्रकाशन।

गौतम, देवीप्रसाद, (२०४९), प्रगतिवाद : परम्परा र मान्यता, काठमाडौँ : मुना गौतम।

जैन, रवीन्द्रकुमार, (मिन), साहित्यालोचन के सिद्धान्त, नई दिल्ली : नेसनल पब्लिसिड हाउस।

जोशी, कुमारबहादुर (२०५१), पाश्चात्य साहित्यका प्रमुख वाद, ललितपुर : साभा प्रकाशन।

त्रिपाठी, वासुदेव (२०३०), पाश्चात्य समालोचनाको सैद्धान्तिक परम्परा, (भाग- २), काठमाडौँ : साभा प्रकाशन ।

पोखरेल, केशवराज (२०७७), पूर्वीय र पाश्चात्य समालोचना, काठमाडौँ : सनलाइट पब्लिकेशन ।

भट्टराई, रामप्रसाद (२०७८), पूर्वीय र पाश्चात्य समालोचना, काठमाडौँ : शुभकामना प्रकाशन ।

भट्टराई, गोविन्दराज (२०६४) उत्तरआधुनिक विमर्श, काठमाडौँ : मोर्डन बुक्स ।

भण्डारी, पारसमणि र माधवप्रसाद पौडेल (२०६१), साहित्यशास्त्र र नेपाली समालोचना, काठमाडौँ : विद्यार्थी पुस्तक भण्डार ।

भारद्वाज, मैथिलीप्रसाद, पाश्चात्य काव्यशास्त्र के सिद्धान्त, चण्डीगढ़ : हरियाणा साहित्य अकादमी ।

शर्मा, ऋषिराम (२०७०), नेपाली रस परिचय, काठमाडौँ : जुगल प्रकाशन ,

शर्मा, ऋषिराम (२०७०), नेपाली अलड्कार विमर्श, इन्द्रा अर्याल, काठमाडौँ : जुगल प्रकाशन

शर्मा, मोहनराज (मिन), आधुनिक तथा उत्तरआधुनिक पाठक मैत्री समालोचना, काठमाडौँ : क्वेस्ट प्रकाशन ।

शर्मा, मोहनराज (२०५५), समकालीन समालोचना : सिद्धान्त र प्रयोग, काठमाडौँ : नेपाल राजकीय प्रज्ञा प्रतिष्ठान ।

श्रेष्ठ, ईश्वरकुमार (२०५४), पूर्वीय तथा पाश्चात्य वाद र प्रणाली, ललितपुर : साभा प्रकाशन ।

सुवेदी, अभि (२०३०), पाश्चात्य काव्यसिद्धान्त, ललितपुर : साभा प्रकाशन ।

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पाठ्यांश संख्या :	नेपा. शि. ५१८	क्रेडिट आवर :	३
तह :	एम. एड.	पाठ्यघन्टा :	४८
सेमेस्टर :	पहिलो		

१. पाठ्यांश परिचय

यो पाठ्यांश त्रिभुवन विश्वविद्यालय (त्रिवि), शिक्षाशास्त्र सङ्कायअन्तर्गत सेमेस्टर प्रणालीमा आधारित स्नातकोत्तर तह (एम. एड.) को पहिलो सेमेस्टरमा नेपाली शिक्षा विषयमा विशिष्टीकरण गर्न चाहने विद्यार्थीहरूका लागि तयार पारिएको हो। यस पाठ्यांशबाट विद्यार्थीहरूमा प्रायोगिक भाषाविज्ञानका प्रमुख क्षेत्रअन्तर्गत पर्ने सङ्कथन विश्लेषण, शैलीविज्ञान, कोशविज्ञान, अनुवादविज्ञान र प्रकरणार्थ विज्ञानसँग सम्बद्ध सैद्धान्तिक तथा प्रयोगिक क्षमता विकासको अपेक्षा गरिएको छ।

२. साधारण उद्देश्य

यस पाठ्यांशको अध्ययनपछि विद्यार्थीहरू निम्नलिखित कुरामा सक्षम हुने छन् :

- प्रायोगिक भाषाविज्ञानका आधारभूत अवधारणाको परिचय दिन,
- सङ्कथन विश्लेषणको सैद्धान्तिक अवधारणासहित सम्बद्धक र सम्बद्धनको स्वरूप बताउन,
- शैलीविज्ञानको सैद्धान्तिक अवधारणासहित शैलीविश्लेषण प्रक्रियाहरू उजागर गर्न,
- कोशविज्ञानको सैद्धान्तिक अवधारणा, कोशका प्रकार तथा कोश निर्माणप्रक्रियाको सिंहावलोकन गर्न,
- अनुवाद अध्ययनको परिचय दिई यसका प्रयोजन, प्रकार, समस्या र शैक्षणिक उपयोगिताको औचित्य पुष्टि गर्न,
- प्रकरणार्थविज्ञानको परिचय दिई वाकिक्याका प्रकार उल्लेख गर्न।

३. विशिष्ट उद्देश्य र पाठ्यविषय

विशिष्ट उद्देश्य	पाठ्यविषय
एकाइ एक : प्रायोगिक भाषाविज्ञानको परिचय (५)	

<ul style="list-style-type: none"> प्रायोगिक भाषाविज्ञानको परिचय दिन, प्रायोगिक भाषाविज्ञानको पृष्ठभूमि र विकासक्रम प्रस्तुत गर्ने, प्रायोगिक भाषाविज्ञानका सीमित र व्यापक क्षेत्र औल्याउन, प्रायोगिक भाषाविज्ञानको उपयोगिता बताउन। 	<ul style="list-style-type: none"> १.१ प्रायोगिक भाषाविज्ञानको पृष्ठभूमि र विकासक्रम १.२ प्रायोगिक भाषाविज्ञानका क्षेत्र <ul style="list-style-type: none"> १.२.१ सीमित क्षेत्र १.२.२ व्यापक क्षेत्र १.३ प्रायोगिक भाषाविज्ञानको उपयोगिता
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एकाइ दुई : सङ्कथन विश्लेषण (८)

<ul style="list-style-type: none"> सङ्कथनको परिचय दिन, कथ्य सङ्कथन र लेख्य सङ्कथनको भिन्नता देखाउन, सङ्कथनका तत्त्वहरूको व्यापार गर्ने, सम्बद्धक (कोहेजन) र सम्बद्धन (कोहेरेन्स) को भूमिका चर्चा गर्ने, सङ्कथन विश्लेषणको शैक्षणिक उपयोगिता बताउन, कुनै लिखित वा मौखिक सामग्रीको सङ्कथन विश्लेषण गर्ने। 	<ul style="list-style-type: none"> २.१ सङ्कथनको परिचय २.२ कथ्य सङ्कथन र लेख्य सङ्कथन २.३ सङ्कथनका तत्त्वहरू २.४ सम्बद्धक (कोहेजन) र सम्बद्धन (कोहेरेन्स) को भूमिका २.५ सङ्कथन विश्लेषण र भाषाशिक्षण २.६ लिखित वा मौखिक सामग्रीको सङ्कथन विश्लेषणको अभ्यास
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एकाइ तीन : शैलीविज्ञान (९)

<ul style="list-style-type: none"> सामान्य शैलीविज्ञान र साहित्यिक शैलीविज्ञानको तुलना गर्ने, शैलीविज्ञानको विकास प्रक्रिया बताउन, शैलीका उपकरण पहिल्याई विश्लेषण गर्ने, शैली विश्लेषण प्रक्रियाको वर्णन गर्ने, कुनै नमुना सामग्री लिई शैली विश्लेषणको अभ्यास गर्ने, शैलीविज्ञानको भाषाशिक्षणमा प्रयोग बताउन। 	<ul style="list-style-type: none"> ३.१ सामान्य शैलीविज्ञान र साहित्यिक शैलीविज्ञान ३.२ शैलीविज्ञानको परम्परा र विकास ३.३ शैली विश्लेषण प्रक्रिया <ul style="list-style-type: none"> ३.३.१ विकल्पन र चयन ३.३.२ अग्रभूमि निर्माण ३.३.२.१ विचलन ३.३.२.२ समानान्तरता ३.४ शैली विश्लेषणको अभ्यास ३.५ शैलीविज्ञान र भाषाशिक्षण
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एकाइ चार : कोशविज्ञान (१०)

<ul style="list-style-type: none"> • कोशविज्ञानको परिचय दिन, • कोशका प्रकार र तिनका विशेषता बयान गर्न, • कोशनिर्माण योजना र सामग्री सङ्कलन प्रक्रिया बताउन, • कोशको पूर्वभाग, मूलभाग र उत्तरभागको परिचय दिई कोशको स्वरूप बताउन, • कोश सम्पादन प्रक्रियाको परिचय दिन, • शीर्ष शब्दहरूको प्रविष्टि गर्न, • उच्चारण निर्देश, स्रोत निर्देश, व्युत्पत्ति तथा व्युत्पादन निर्देश र व्याकरण निर्देश गर्न, • अर्थ निर्देशका प्रमुख विधिहरू पत्ता लगाउन, • नेपाली कोशको परम्परा र विकासक्रम प्रस्तुत गर्न, • नेपाली कोश निर्माणका समस्याहरू औल्याउन, • कोशको शैक्षणिक महCEव बताउन, • कोश र भाषाशिक्षणको अन्तरसम्बन्ध देखाउन, • नमुना शब्दकोश निर्माण गर्न। 	<p>४.१ कोशविज्ञानको परिचय</p> <p>४.२ कोशका प्रकार र तिनका विशेषता</p> <p>४.३ कोशनिर्माण योजना र सामग्री सङ्कलन प्रक्रिया</p> <p>४.४ कोशको स्वरूप र कोश सम्पादन प्रक्रिया</p> <p>४.४.१ पूर्वभाग, मूलभाग र उत्तरभाग</p> <p>४.४.२ शीर्ष शब्दहरूको प्रस्तुति</p> <p>४.४.३ उच्चारण निर्देश, स्रोत निर्देश, व्युत्पत्ति तथा व्युत्पादन निर्देश, व्याकरण निर्देश,</p> <p>४.४.४ अर्थ निर्देशका प्रमुख विधिहरू</p> <p>४.५ नेपाली कोशको परम्परा र विकास</p> <p>४.६ नेपाली कोश निर्माणका समस्या</p> <p>४.७ भाषाशिक्षणमा कोशको उपयोग</p> <p>४.८ शब्दकोश निर्माणको अभ्यास</p>
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एकाइ पाँच : अनुवाद अध्ययन (१०)

<ul style="list-style-type: none"> • अनुवादको परिचय दिई यसको प्रयोजन बताउन, • अनुवादका गुणहरू बताउन, • क्याटफोर्ड, नाइडा र न्युमार्कका अनुवादसम्बन्धी मान्यता प्रस्तुत गर्न, • अनुवादका प्रकारहरूको परिचय दिन, • अनुवादका प्रक्रियाहरूको वर्णन गर्न, • अनुवादका समस्याहरू औल्याउन, • अनुवादको शैक्षणिक उपयोगिता बताउन, • कुनै भाषिक सामग्री लिई नेपाली भाषामा अनुवाद गर्ने अभ्यास गर्ने। 	<p>५.१ अनुवादको परिचय र प्रयोजन</p> <p>५.२ अनुवादका गुणहरू र यसको आदर्श स्थिति</p> <p>५.३ क्याटफोर्ड, नाइडा र न्युमार्कका अनुवादसम्बन्धी मान्यता</p> <p>५.४ अनुवादका प्रकार</p> <p>५.६ अनुवादका प्रक्रियाहरू</p> <p>५.७ अनुवादका समस्या</p> <p>५.८ अनुवाद र भाषाशिक्षण</p>
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५.९ अनुवादको अभ्यास	
एकाइ ६ : प्रकरणार्थ विज्ञान (७)	
<ul style="list-style-type: none"> • प्रकरणार्थ विज्ञानको परिचय दिन, • प्रकरणार्थ विज्ञानका आधारभूत अवधारणा प्रस्तुत गर्ने, • वाकिक्याको सैद्धान्तिक स्वरूप औल्याउन, • सहयोगात्मक सिद्धान्तका बारेमा वर्णन गर्ने, • भाषाशिक्षण र प्रकरणार्थ विज्ञानको सम्बन्ध स्थापित गर्ने । 	६.१ प्रकरणार्थ विज्ञानको परिचय ६.२ प्रकरणार्थ विज्ञानका आधारभूत अवधारणा ५.२.१ निर्देशन र सन्दर्भन ५.२.२ प्रतिज्ञाप्ति र पूर्वधारणा ५.२.३ निहितार्थ र अभिव्यञ्जना ६.३ वाकिक्या सिद्धान्त ६.४ सहयोगात्मक सिद्धान्त ६.५ भाषाशिक्षणमा प्रकरणार्थ विज्ञानको प्रयोग

४. शिक्षण प्रविधि

यस पाठ्यांशको अध्ययन अध्यापनका क्रममा प्रत्येक एकाइमा आवश्यकताअनुसार व्याख्यान, प्रश्नोत्तर, छलफल तथा प्रस्तुतीकरण विधि र प्रक्रिया उपयोग गरिने छ । एकाइको प्रकृतिअनुरूप पाठ्यपुस्तक, सहायक पुस्तक, सन्दर्भ पुस्तक, पाठपत्र, तालिका र आरेखहरूको उपयोग गरिने छ ।

एकाइ एकमा प्रायोगिक भाषाविज्ञानको क्षेत्र र उपयोगितामा व्यक्तिगत कक्षा प्रस्तुति गर्न लगाउने ।

एकाइ दुईमा लिखित वा मौखिक सामग्रीको सङ्कथन विश्लेषणको सामूहिक परियोजना कार्य गर्न लगाउने ।

एकाइ तीनमा सामान्य शैलीविज्ञान, साहित्यिक शैलीविज्ञान एवम् शैली विश्लेषण प्रक्रियाको व्यक्तिगत कक्षा प्रस्तुति गर्न लगाउने ।

एकाइ चारमा सामूहिक रूपमा नमुना शब्दकोश निर्माणको अभ्यास गराउने । आन्तरिक परीक्षाको प्रयोजनका लागि यो पहिलो प्रयोगात्मक कार्य हुने छ ।

एकाइ पाँचमा व्यक्तिगत वा सामूहिक रूपमा नेपाली भाषामा र अन्य भाषा वा भाषिकाबाट अनुवादको अभ्यास गराउने । आन्तरिक परीक्षाको प्रयोजनका लागि यो दोस्रो प्रयोगात्मक कार्य हुने छ ।

एकाइ छमा प्रकरणार्थ विज्ञानमा व्यक्तिगत कार्य गर्न लगाई कक्षा प्रस्तुति गर्न लगाउने ।

५. मूल्यांकन प्रक्रिया

यस पाठ्यांशको मूल्यांकन प्रक्रिया दुई प्रकृतिको हुने छ :

(क) आन्तरिक मूल्यांकन

(ख) बाह्य मूल्यांकन

५.१ आन्तरिक मूल्यांकन

आन्तरिक मूल्यांकनका लागि ४०% अङ्कभार छुट्याइएको छ। उक्त मूल्यांकनका लागि निर्दिष्ट प्रायोगिक कार्यअन्तर्गत रही विषय शिक्षकले निम्न आधारहरू अवलम्बन गर्नुपर्ने छ :

- | | | |
|-----|-------------------------|-----------|
| (क) | उपस्थिति | - ५ अङ्क |
| (ख) | शिक्षण सिकाइमा सहभागिता | - ५ अङ्क |
| (ग) | पहिलो आन्तरिक परीक्षा | - १० अङ्क |
| (घ) | दोस्रो आन्तरिक परीक्षा | - १० अङ्क |
| (ङ) | तेस्रो आन्तरिक परीक्षा | - १० अङ्क |

आन्तरिक मूल्यांकनको विधि र प्रक्रिया निम्नानुसारको हुने छ :

- | | |
|-----|--|
| (क) | विषय शिक्षकले उपस्थितिको ५ अङ्क तोकिएको न्यूनतम मापदण्डदेखि शतप्रतिशत हाजिरीका आधारमा ($\frac{3}{4}/\frac{5}{5}$ अङ्क) प्रदान गर्ने छन्। |
| (ख) | कक्षा सहभागिताको ५ अङ्कमध्ये सम्बन्धित विषय शिक्षकले विद्यार्थीको कक्षा कार्यकलापको मूल्यांकन गरी अङ्क प्रदान गर्ने छन्। |
| (ग) | माथि उल्लेख गरिएको पहिलो प्रयोगात्मक परीक्षालाई पहिलो आन्तरिक परीक्षाका रूपमा र दोस्रो प्रयोगात्मक परीक्षालाई दोस्रो आन्तरिक परीक्षाका रूपमा मूल्यांकन गरिने छ। |
| (घ) | तेस्रो आन्तरिक परीक्षामा पाठ्यांशले तोकेको बाह्य मूल्यांकनको ढाँचाअनुसार ३० देखि ६० पूर्णाङ्कको लिखित सुधार परीक्षा लिई त्यसलाई १० मा रूपान्तर गरी अङ्क प्रदान गर्नुपर्ने छ। |

नोट : उल्लिखित सबै परीक्षामा विद्यार्थीहरू अनिवार्य रूपमा समावेश हुनुपर्ने छ। विषय शिक्षक/विभागले ती परीक्षाको अभिलेख राख्नुपर्ने छ।

५.२ बाह्य मूल्यांकन

बाह्य मूल्यांकनका लागि ६०% अड्कभार छुट्याइएको छ। उक्त मूल्यांकनका लागि त्रिवि, शिक्षाशास्त्र सङ्काय, डिनको कार्यालयद्वारा सेमेस्टरको अन्त्यमा परीक्षा लिइने छ। सो परीक्षामा सोधिने प्रश्नको प्रकृति, ढाँचा र त्यसको अड्कभार निम्नानुसार हुने छ:

प्रश्नको प्रकृति	सोधिने प्रश्न सङ्ख्या	उत्तर दिनुपर्ने प्रश्न सङ्ख्या	प्रतिप्रश्न छुट्याइएको अड्क	पूर्णांक
समूह 'क' : बहुवैकल्पिक प्रश्न	१०	१०	१	१०
समूह 'ख' : छोटो उत्तर आउने प्रश्न	८ (दुई ओटा वैकल्पिक प्रश्नसहित)	६	५	३०
समूह 'ग' : लामो उत्तर आउने प्रश्न	३ (एक वैकल्पिक प्रश्नसहित)	२	१०	२०

६. सन्दर्भ सामग्री

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एसर, आर.ई. (१९९४ ई.), द इनसाइक्लोपिडिया अफ ल्याङ्गवेज एन्ड लिड्गिविस्टक्स, इंग्लैन्ड : पर्गामन प्रेस

।

खनाल, राजेन्द्र (२०७७), प्रायोगिक भाषाविज्ञानका प्रमुख क्षेत्र, काठमाडौँ : सनलाइट पब्लिकेसन।

ग्रान्ट, नेभाइल (१९८८ ई.), मोकिङ द मोस्ट अफ योर टेक्स्टबुक, लन्डन : लडम्यान।

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नुनान, डेविड, (सन् १९९७ ई.), सिलेबस डिजाइन, अक्सफोर्ड : अक्सफोर्ड युनिभर्सिटी प्रेस।

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बेल, रोजर टि. (१९८१ ई.), एन इन्ट्रोडक्सन टु अप्लाइड लिङ्गिविस्टिक्स : एप्रोचेज यान्ड मेथड्स, लन्डन : बि.टि. बास्टफोर्ड ।

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।

भट्टराई, गोविन्दराज (२०६४), अनुवाद अध्ययन परिचय, (अनु. बलराम अधिकारी), काठमाडौँ : रत्न पुस्तक भण्डार, (मौलिक कृति प्रकाशित सन् २०००) ।

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