MALLA REDDY UNIVERSITY

Common to CSE / CSE(IOT) / IT

COURSE STRUCTURE

I Year B. Tech – I Semester

S No	Subject Code	Subject	L	T	P	C	Max. Marks	
							INT	EXT
1	MR20-1HS0101	English	2	0	0	2	40	60
2	MR20-1BS0101	Mathematics – I	3	1	0	4	40	60
3	MR20-1ES0101	Basic Electrical and Electronics Engineering	3	0	0	3	40	60
4	MR20-1BM0161	Financial Institutions, Markets and Services	3	0	0	3	40	60
5	MR20-1ES0102	Programming for Problem Solving	3	0	0	3	40	60
6	MR20-1HS0132	Foreign Language - French	1	1	0	1	40	60
7	MR20-1HS0131	English Language Communication Skills Lab	-	0	2	1	40	60
8	MR20-1ES0131	Basic Electrical and Electronics Engineering Lab	-	0	3	1.5	40	60
9	MR20-1ES0132	Programming for Problem Solving Lab	-	0	3	1.5	40	60
		TOTAL	**15**	**2**	**8**	**20**	**360**	**540**

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MR20-1HS0101

L/T/P/C
2/-/-/2

ENGLISH

INTRODUCTION

Thes yllabus focuses on the communication skills through the selected excerpts' support as resources for the students to develop the appropriate skills. The lessons stimulate discussions, debates and help in comprehending the content effectively. The main objective is on language skills enhancement through nurturing ideas and implementing them.

COURSE OBJECTIVES:

Students will be able:

1. To enhance their lexical and grammatical skills.
2. To develop reading competencies for academic and competitive requirements.
3. To write effectively to meet professional needs.
4. To hone the speaking proficiency and effective listening skills.
5. To improve character traits and interpersonal skills.

UNIT-1:Poem: Weare Indians firstby Dr.Prashanth Bhatt

Reading – Reading and its importance, techniques of effective reading.

Writing - Phrases, clauses and sentences & Paragraph Writing

Expansion of Proverbs "Action speaks louder than words"

Speaking – Role plays and Informal Conversations.

Grammar – Parts of Speech, Parsing. Vocabulary – Word formation: Affixations and Root words.

UNIT-2: TheCutoff byChetanBhagat

Reading – Techniques for effective comprehension(Comprehension Practice Tests).
Writing – Techniques for writing precisely and Punctuations
Speaking - Small Talk and Extempore speaking.
Grammar – Question tags and Subject-verb agreement.
Vocabulary – Homophones, Homographs, Homonyms and Loan Words.

UNIT-3: SatyaNadella'sEmailtoEmployeesonFirstDayasCEO

Reading – Skimming and scanning (Comprehension Practice Tests).
Writing - Formal, Informal Letters and E-mails.
Speaking – Group Discussions.
Grammar – Modals and Tenses.
Vocabulary - Synonyms, Antonyms &Phrasal verbs.

UNIT-4:RhetoricalSpeeches intheplayJuliusCaesar

Reading - Intensive and extensive reading (Comprehension Practice Tests).

Writing – Note making, Note Taking.

Speaking - Presentations &Public Speaking.

Grammar – Active and passive voice.

Vocabulary - One-word substitutes.

UNIT-5: Soft Skills-Adaptability, First things first, Goal Setting & Career Planning.

Reading – Reading Comprehension passages.

Writing – Essay Writing

Speaking - Debates.

Grammar – Conditional sentences.

Vocabulary – Technical vocabulary.

REFERENCE BOOKS

1. *Practical English Usage* by Michael Swan.OUP.1995.
2. *On Writing Well* by William Zinsser, Harper Resource Book. 2001.
3. *Communication Skills* by Sanjay Kumar and PushpaLata. Oxford University Press.2011.
4. *Technical Communication* by Meenakshi Raman, Sangeeta Sharma. Oxford University Press. 2016.
5. *Cornerstone Developing Soft Skills* by Robert M. Sherfield. Pearson India. Fourth edition.2011.
6. *Cambridge Advanced Learner's Dictionary* by Cambridge Publication. Fourth edition. 2013.
7. *Exercises in Spoken English*. Parts. I-III.CIEFL, Hyderabad. Oxford University Press.

COURSE OUTCOMES:

Students will have attained to:

1. Construct grammatically correct sentences with appropriate vocabulary.
2. Speak fluently and accurately in formal and informal situations.
3. Analyze, interpret and synthesize a diverse range of concepts through better comprehension of the text.
4. Make effective presentations.
5. Adhere to ethical norms of scientific communication through soft skills

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MATHEMATICS –I

COURSE OBJECTIVES:

1. The concept of a Rank of the matrix and applying the concept to know the consistency and solving the system of linear equations.
2. The concept of Eigen values, Eigen vectors and Diagonalization.
3. The maxima and minima of functions of single and several variables.
4. The Applications of first order ordinary differential equations and methods to solve higher order differential equations.

UNIT–I: Matrix Theory

Introduction, Rank of a Matrix – Echelon form, Normal form, Consistency of system of Linear equations (Homogeneous and Non–Homogeneous), Gauss Elimination, Linear dependence and independence of vectors, Eigen values and Eigen vectors and their properties (without proof), Cayley-Hamilton theorem (without proof), Diagonalization of a matrix.

UNIT–II: Differential Calculus–I

Mean value theorems: Rolle's theorem, Lagrange's Mean value theorem with their Geometrical Interpretation and applications, Cauchy's Mean value Theorem, Taylor's theorem with remainders, Taylor's and Maclaurin's expansions.

UNIT–III: Differential Calculus–II

Functions of several variables, Partial differentiation, Total differentiation, Change of variables – Jacobian's, Functional dependence and independence, Maxima and Minima of functions of several variables (2 and 3 variables) - Lagrange's method of multipliers, Taylors theorem for two variables.

UNIT–IV: First Order Ordinary Differential Equations

Geometric interpretation of solutions of first order ODE y' = f(x, y), Exact differential equations, Integrating factors, Linear and Bernoulli's equations, Applications– Orthogonal trajectories, Newton's Law of cooling, law of natural growth/decay.

UNIT–V: Higher Order Ordinary Differential Equations

Higher order linear differential equations with constant coefficients - Homogeneous and Non-homogeneous term of the type e^{ax}, $\sin ax$, $\cos ax$, x^k, $e^{ax}V$ and x^kV, Equations with Variable Coefficients: Cauchy's and Legender's differential equations, Method of variation of parameters, Applications: Electrical Circuits.

TEXT BOOKS

1. Advanced Engineering Mathematics by Kreyszig, John Wiley & Sons.
2. Higher Engineering Mathematics by B.S. Grewal, Khanna Publishers.
3. Advanced Engineering Mathematics by RK Jain & SRK Iyengar, Narosa Publishers.

REFERENCE BOOKS

1. Higher Engineering Mathematics by B.V. Ramana, Tata McGraw Hill.
2. Ordinary and Partial Differential Equations by M.D. Raisinghania, S. Chand Publishers.
3. Engineering Mathematics by N.P. Bali and Manish Goyal, Laxmi Publications.

COURSE OUTCOMES

After learning the concepts of this paper, the student will be able to

1. Analyze the solutions of the system of linear equations and find the Eigen values and Eigen vectors of a matrix, which are used to analyze the long-term behavior of any system.
2. Find the extreme values of functions of two variables with/without constraints.
3. Solve arbitrary order linear differential equations with constant coefficients.
4. Apply the concepts in solving physical problems arising in engineering.
5. Form a differential equation for typical engineering problems and hence can solve those higher order differential equations.

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MR20-1ES0102 3/-/-/3

PROGRAMMING FOR PROBLEM SOLVING

COURSE OBJECTIVES:

1. To understand the use of computer system in problem solving.
2. Enable the student to build program logic with algorithms and flowcharts.
3. Explain the features and constructs of C programming such as data types, expressions
4. Loops, arrays, strings and pointers.
5. To learn how to write modular Programs using Functions.
6. Understand the use of Structures, Unions and Files.

UNIT - I

Introduction to Computing – Computer Systems, Computing Environments, Computer Languages, Algorithms and Flowcharts, Steps for Creating and Running programs.
Introduction to C – History of C, Features Of C, Structure of C Program, Character Set,C Tokens-keywords, Identifiers, Constants, Data types, Variables.

UNIT-II

C Operators, Expressions, Precedence and Associativity, Expression Evaluation, Type conversion Statements- Selection Statements (Decision Making) – if and switch statements, Repetition statements (Loops)-while, for, do-while statements, other statements related to looping –break, continue, goto.

UNIT – III

Functions-Designing Structured Programs, Types of Functions- user defined functions, Standard Functions, Categories of functions, Parameter Passing techniques, Scope, Storage classes, Recursion-Recursive functions.

Arrays – Declaration and Initialization, Arrays with functions, Two dimensional arrays,Multi-dimensional arrays.

UNIT-IV

Strings – Declaration and Initialization, String Input / Output functions, Arrays of strings, String manipulation functions.

Pointers-Introduction, Definition and uses of pointers, Pointer variables, Pointer arithmetic, Pointers to Pointers, Pointers with Arrays, Pointers with Functions, Command line arguments.

Dynamic Memory Management functions: malloc (), calloc(), realloc() and free ()

UNIT-V

Structures and Unions - Introduction, Declaration and Initialization, Structure within a structure, Array of Structures, Pointer to Structure, Unions.

Files – Concept of a file, Streams, Text files and Binary files, Opening and Closing files, File input / output functions.

CASE STUDIES

CASE 1: Student & Employee Record System

The main features of this project include basic file handling operations given below

- Add Record
- List Record
- Modify Record
- Delete Record

CASE 2: Library Management System

This Project has 2 Modules

1. Librarian
2. Student

Librarian: A librarian can add, search, edit and delete books. This section is password protected. This means you need administrative credentials to log in as librarian.

Student: A Student can search for the book and check the status of the book if it is available. List of all features

that you can add to the project.

TEXT BOOKS:

1. Computer Science: A Structured Programming Approach Using C, B.A.Forouzan and R.F. Gilberg, Third Edition, Cengage Learning.
2. Mastering C, K.R.Venugopal, S R Prasad, Tata McGraw-Hill Education.

REFERENCE BOOKS:

1. The C Programming Language, B.W. Kernighan and Dennis M.Ritchie, PHI.
2. Programming for Problem Solving, E.Balagurusamy, McGraw-Hill Education.
3. C and Data structures – P. Padmanabham, Third Edition, B.S. Publications.
4. Programming in C, Ashok Kamthane. Pearson Education India.
5. Let us C ,YashwanthKanethkar, 17th Edition, BPB Publications.

COURSE OUTCOMES:

1. Understand a problem and build an algorithm/flowchart to solve it.
2. Define variables and construct expressions using C language.
3. Construct C programs using various conditional statements and loops.
4. Develop efficient, modular programs using functions.
5. Utilize arrays, structures and unions for storing and manipulating data.

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HUMAN VALUES AND PROFESSIONAL ETHICS

COURSE OBJECTIVES:

1. To help the students appreciate the essential complementarily between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
2. To facilitate the development of a holistic perspective among students towards life, profession and happiness, based on a correct understanding of the Human reality and the rest of Existence. Such a holistic perspective forms the basis of value-based living in a natural way.
3. To highlight plausible implications of such a holistic understanding in terms of ethical human conduct, trustful and mutually satisfying human behavior and mutually enriching interaction with Nature.

UNIT - I

Course Introduction - Need, Basic Guidelines, Content and Process for Value Education: Understanding the need, basic guidelines, content and process for Value Education.

Self-Exploration - what is it? - its content and process; 'Natural Acceptance' and Experiential Validation - as the mechanism for self-exploration. Continuous Happiness and Prosperity

A look at basic Human Aspirations- Right understanding, Relationship and Physical Facilities - the basic requirements for fulfillment of aspirations of every human being with their correct priority.

Understanding Happiness and Prosperity correctly - A critical appraisal of the current scenario. Method to fulfill the above human aspirations: understanding and living in harmony at various levels.

UNIT - II

Understanding Harmony in the Human Being - Harmony in Myself: Understanding human being as a co- existence of the sentient 'I' and the material 'Body'.

Understanding the needs of Self ('I') and 'Body' - Sukh and Suvidha. Understanding the Body as an instrument of 'I' (I being the doer, seer and enjoyer).

Understanding the harmony of I with the Body: Sanyam and Swasthya; correct appraisal of Physical needs, meaning of Prosperity in detail. Programs to ensure Sanyam and Swasthya.

UNIT - III

Understanding Harmony in the Family and Society - Harmony in Human - Human Relationship: Understanding harmony in the Family the basic unit of human interaction. Understanding values in human - human relationship; meaning of Nyaya and program for its fulfillment to ensure Ubhay-tripti; Trust (Vishwas) and Respect (Samman) as the foundational values of relationship.
Understanding the meaning of Vishwas; Difference between intention and competence.
Understanding the meaning of Samman, Difference between respect and differentiation; the other salient values in relationship.

Understanding the harmony in the society (society being an extension of family): Samadhan, Samridhi, Abhay, Sah-astiva as comprehensive Human Goals. Visualizing a universal harmonious order in society - Undivided Society (AkhandSamaj), Universal Order (SarvabhaumVyawastha) - from family to world family!

UNIT - IV

Understanding Harmony in the nature and Existence - Whole existence as Coexistence: Understanding the harmony in the Nature. Interconnectedness and mutual fulfillment among the four orders of nature - recyclability and self-regulation in nature.

Understanding Existence as Co-existence (Sah-astitva) of mutually interacting units in all-pervasive space. Holistic perception of harmony at all levels of existence.

UNIT - V

Implications of the above Holistic Understanding of Harmony on Professional Ethics: Natural acceptance of human values, Definitiveness of Ethical Human Conduct, Basic for Humanistic Education, Humanistic Constitution and Humanistic Universal Order. Competence in professional ethics:

a. Ability to utilize the professional competence for augmenting universal human order.
b. Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems.
c. Ability to identify and develop appropriate technologies and management patterns for above production systems.

TEXT BOOKS:

1. R. R. Gaur, R Sangal, G P Bagaria, 2009, A Foundation Course in Human Values and Professional Ethics.
2. Prof. K. V. Subba Raju, 2013, Success Secrets for Engineering Students, Smart Student Publications, 3rd Edition.

REFERENCE BOOKS:

1. Ivan IIlich, 1974, Energy & Equity, The Trinity Press, Worcester, and HarperCollins, USA
2. E. F. Schumancher, 1973, Small is Beautiful: a study of economics as if people mattered. Blond & Briggs, Britain.
3. A Nagraj, 1998 Jeevan Vidya ekParichay, Divya Path Sansthan, Amarkantak.
4. Sussan George, 1976, How the Other Half Dies, Penguin Press, Reprinted 1986, 1991.
5. P. L. Dhar, R. R. Gaur, 1990, Science and Humanism, Commonwealth Publishers.
6. A. N. Tripathy, 2003, Human Values, New Age International Publishers.
7. Subhas Palekar, 2000, How to practice Natural Farming, Pracheen(Vaidik) Krishi Tantra Shodh, Amravati.
8. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, Limits to Growth - Club of Rome's report, Universe Books.
9. E G Seebauer& Robert L.Berry, 2000, Fundamentals of Ethics for Scientists & Engineers, Oxford University Press.
10. M Govindarajan, S Natrajan& V. S Senthil kumar, Engineering Ethics (includingHumna Values), Eastern Economy Edition, Prentice Hall of India Ltd.

Relevant CDs, Movies, Documentaries & Other Literature:

1. Value Education website, http://www.uptu.ac.in
2. Story of Stuff, http://www.storyofstuff.com
3. Al Gore, An Inconvenient Truth, Paramount Classics, USA.
4. Charle Chaplin, Modern Times, United Artists, USA.
5. IIT Delhi, Modern Technology - the Untold Story.

COURSE OUTCOMES:

1. The students will be able to obtain happiness and prosperity in their life.
2. They will develop harmony at all levels.
3. They can have satisfying human behavior throughout their life

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3/-/-/3

MR20-1ES0101

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE OBJECTIVES

1. To introduce the concepts of electrical circuits and its components.
2. To analyze electrical circuits using basic laws and Network Theorems.
3. To study and understand the different types of DC and AC machines.
4. To introduce the concepts of diodes, rectifiers and Bipolar junction transistor.
5. To understand basic number systems, binary codes and logic gates.

UNIT-I

Electrical Circuits: Basic definitions, Types of elements, Basic Circuit Components, Ohm's Law, Series & Parallel Resistive networks, Kirchhoff's Laws, Star-delta and delta-star transformations.

Network Theorems: Superposition Theorem, Thevenin's Theorem and Norton's Theorem.

UNIT-II

DC Machines: Dc Generator: Construction and Principle of operation, EMF equation, DC Motor: Construction and Principle of operation, Torque equation and Speed control of DC shunt motor-Flux and armature voltage control methods.

UNIT-III

AC Machines: Construction and Principle of operation of single-phase transformers, EMF equation. Construction and Principle of operation of induction motor. Construction, Principle of operation of Alternator (elementary treatment only).

UNIT–IV

Electronic Devices and Circuits: P-N Junction diode and its characteristics, Zener diode and its characteristics, P-N junction diode as a rectifier - Half Wave Rectifier, Full Wave Rectifier (center-tapped), Ripple Factor. Bipolar Junction transistor- Symbol, Construction and operation.

UNIT-V

Digital Electronics: Number Systems, Base Conversion Methods, Complements of Numbers, Binary Codes - Binary Coded Decimal, Unit Distance Code, Digital Logic Gates (AND, NAND, OR, NOR, EX-OR, EX-NOR).

TEXT BOOKS

1. Basic Electrical Engineering, Abhijit Chakrabarti, Sudiptanath, Chandram Kumar Chanda,Tata- McGraw-Hill.
2. Basic concepts of Electrical Engineering, PS Subramanyam, BS Publications.
3. Electronic Devices and Circuits, S.Salivahanan, N.Suresh Kumar, A.Vallavaraj,Tata McGraw-Hill companies.
4. M. Morris Mano, Digital Design, 3rd Edition, Prentice Hall of India Pvt. Ltd., 2003 /PearsonEducation (Singapore) Pvt. Ltd., New Delhi,2003.

REFERENCE BOOKS:

1. Basic Electrical Engineering, T.K.Nagasarkar and M.S. Sukhija, Oxford University Press.
2. Basic Electrical Engineering by D.P.Kothari, I.J. Nagrath, McGraw-Hill.
3. Millman's Electronic Devices and Circuits,J. Millman, C.C.Halkias, and Satyabrata Jit, TataMcGraw-Hill companies.

COURSE OUTCOMES

After going through this course, the student gets a thorough knowledge on

1. Basic concepts of electrical circuits and its components.
2. Solving the Electrical circuits using basic laws and network theorems.
3. Different types of DC and AC machines.
4. Various Diodes, Rectifiers and Bipolar junction transistor.
5. Different types of number systems, base conversion methods and logic gates.

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3/-/-/3

MR20-1BM0161
FINANCIAL INSTITUTIONS, MARKETS AND SERVICES

COURSE OBJECTIVES

1. To expose students towards a clear understanding of Financial Markets in India, their operations and relevant development.
2. To lay foundation and equip them with the knowledge of Financial Services, related institutions and their functions.
3. Deep learning of the operations of financial markets, regulators and the stakeholders.

UNIT- I

Introduction to Indian Financial System: -

Meaning, Functions, Structure & Components of Indian Financial System, Financial System & Economic Growth, Indicators of Financial Development, Financial Sector Reforms in India & Recent Development of Indian Financial System

UNIT-II

Financial Regulatory Authorities:-

Regulators of Indian Financial System: The Reserve Bank of India (RBI)- Organization, Objectives, Functions And Monetary Policy; Securities and Exchange Board of India (SEBI)- Organization, Objectives & Functions; Insurance Regulatory And Development Authority Of India (IRDAI)- Organization, Objectives & Functions

Pension Fund Regulatory Authority of India (PFRDA) - Organization, Objectives & Functions.

UNIT-III

Financial Institutions:

Introduction, Meaning of Financial Institutions; Types of Financial Institutions And Their Roles, Commercial Banking- Objectives And Functions, Public And Private Sector Bank, Cooperative Banks- objectives And Functions, International Banking, NPA, Risk Management In Banking And Banking Innovations, NBFCs: Concept, Growth And Prospects.

UNIT–IV

Financial Markets:

Introduction, Meaning, Functions of Financial Markets: Money market, Money Markets Treasury Bill (TB), Certificates of Deposits (CD), Commercial Bills (CB). Financial Instruments Meaning and Concept. Capital Market: Primary and Secondary Markets: Organization and Structure, Listing, Trading and Settlement, SEBI and Regulations of Primary and Secondary Markets. Stock Exchange concept.

UNIT-V

Financial services:

Financial services: Introduction, Meaning and function of Financial Services, Fee Based and Fund Based Services,

Meaning and Concept of Merchant Banking, Venture Capital Financing, Investment and Mutual Fund, Credit Rating and Stock Broking and Leasing.

REFERENCE BOOKS:

1. Clifford Gomez, Financial Markets Institutions and Financial Publications, PHI Publishers
2. Gordon and Natarajan,11th Edition, Financial Markets and Services, Himalaya Publishing House.
3. Frank.J.Fabozzi& Franco Modigliani, Foundations of Financial Markets and Institutions, 3/e, Pearson Education Asia, 2002(latest edition)
4. Bhole L M, "Financial Institutions and Services", Tata McGraw Hill Publications. 3rd Ed. 1999(latest edition only).
5. LM Bhole, Financial Institutions and Markets, TMH 5. Meir Kohn, Financial Institutions and Markets, Oxford.
6. Bhalla, V. K. (2004). Managing International Investment and Finance. New Delhi, Anmol.
7. Saunders, Anthony, Cornett, Marcia Millon (5th ed., 2005). Financial Institutions Management Tata McGraw Hill.
8. Bhall, L.M. (4th ed., 2004). Financial Institutes & Markets. Tata McGraw Hill.

COURSE OUTCOMES

1. Clear understanding of the operation of financial markets.
2. Indulgence in financial investments based on the knowledge gained on financial services.
3. Comprehend the various policy changes and economic news at national and international level.

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MR20-1ES0132 -/-/3/1.5

PROGRAMMING FOR PROBLEM SOLVING LAB

COURSE OBJECTIVES:

1. Familiarity with the C programming environment.
2. Systematic introduction to programming constructs
3. Learning basic concepts of C through illustrative examples and small exercises
4. Understanding concept of Arrays, Strings and Structures with examples
5. Perform basic operations on Files.

Week1:

A. Write a C program to find sum and average of three numbers
B. Write a program to calculate simple interest for a given P, T, and R (SI = P*T*R/100)

Week2:

A. Write a program to swap two variables values with and without using third variable
B. Write a program to find the roots of a quadratic equation.

Week3:

A. Write a program to find the sum of individual digits of a given positive integer.
B. Write a program, which takes two integer operands and one operator from the user, performs the operation and then prints the result. (Consider the operators +,-,*, /, % and use Switch Statement)

Week4:

A. Write a program to find both the largest and smallest number in a list of integers. B. Write a program to find the sum of integer array elements using pointers

Week5:

A. Write a program to perform addition of two matrices.
B. Write a program to perform multiplication of two matrices.

Week6:

A. Write a program to find the length of the string using Pointer.
B. Write a program to count the number of lines, words and characters in a given text

Week7:

A. Write a program to find factorial of a given integer using non-recursive function and recursive function. B. Write program to find GCD of two integers using non-recursive function and recursive function.

Week8:

A. Write a program using user defined functions to determine whether the given string is palindrome or not. B. Write a Program to swap the values of two variables using
i) Call by Value ii) Call by Reference

Week9:

A. Write a program to find the sum of integer array elements using pointer, use dynamic memory allocation to allocate memory.
B. Write a program to perform subtraction of two matrices, Design functions to perform read, display and subtract

Week10:

A. Write a program to create a structure named book and display the contents of a book. B. Write a Program to Calculate Total and Percentage marks of a student using structure.

Week11:

A. Write a program that uses functions to perform the following operations:
i) Reading a complex number
ii) Writing a complex number
iii) Addition of two complex numbers iv) Multiplication of two complex numbers
B. Write a program to reverse the first n characters in a file.
(Note: The file name and n are specified on the command line.).

Week12:

A. Write a program to copy the contents of one file to another.
B. Write a program to merge two files into a third file (i.e., the contents of the first file followed by those of the second are put in the third.

COURSE OUTCOMES:

1. Translate mathematical expressions to C notation using operators.
2. Develop C programs using loops and nested loops.
3. Construct custom functions for solving problems using modular approach.
4. Solve problems related to arrays and strings.
5. Use structures and unions for storing dissimilar data items.

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L/T/P/C

MR20-1ES0131 -/-/3/1.5

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING LAB

COURSE OBJECTIVES:

1. Verify the basic electrical circuit laws and theorems.
2. Determine the characteristics of dc and ac machines.
3. Plot the V-I characteristics of PN junction Diode and its applications.
4. Plot the input and output characteristics of Transistor in CB and CE configurations.
5. Study and verify the logic gates.

LIST OF EXPERIMENTS:

1	**Demonstration:** Safety precautions, measuring instruments, switchgear, Earthing and Cut-out sections of electrical machines.
2	Verification of KCL and KVL for DC Circuits.
3	Verification of Thevenin's Theorem.
4	Verification of Norton's Theorem.
5	Verification of Superposition Theorem.
6	P-N Junction Diode Characteristics.
7	Zener Diode Characteristics.
8	Half–Wave Rectifier with and without Filter.
9	Full-Wave Rectifier with and without Filter.
10	Input and Output Characteristics of Transistor in CB Configuration.
11	Study of Logic gates.
12	Introduction to Microprocessor/controller.

Note: Minimum of 10 experiments are to be completed

COURSE OUTCOMES:

1. Understand the basic circuit laws and theorems.
2. Understand the basic constructional details of dc and ac machines.
3. Plot the V-I characteristics of PN junction Diode.
4. Plot the input and output characteristics of Transistor in CB and CE configurations.
5. Realize the various logic gates.

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MR20-1HS0131
ENGLISH LANGUAGE COMMUNICATION SKILLS LAB

The Language Lab focuses on the production and practice of sounds of the English language and familiarizes the students with its use in everyday situations and contexts.

COURSE OBJECTIVES:

1. To facilitate computer-assisted multi-media instruction enabling individualized and independent language learning.
2. To sensitize students to the nuances of English speech sounds, word accent, intonation and rhythm.
3. To bring about a consistent accent and intelligibility in students' pronunciation of English by providing an opportunity for practice in speaking.
4. To improve the fluency of students in spoken English and neutralize their Mother Tongue Influence.
5. To train students to use language appropriately for public speaking.

English Language Communication Skills Lab has two parts:

I. Computer Assisted Language Learning (CALL)
II. Interactive Communication Skills (ICS)

UNIT –I

CALL Lab: Introduction to Phonetics
ICS Lab: Ice-Breaking Activity and JAM Session

UNIT –II

CALL Lab: Pronunciation: Past Tense Markers and Plural Markers and Syllable
ICS Lab: Situational Dialogues and Role Plays

UNIT–III

CALL Lab: Word Stress and Intonation
ICS Lab: Describing Objects / Situations / People

UNIT –IV

CALL Lab: Identifying the Topic, Context and Specific Piece of Information
ICS Lab: Group Discussion

UNIT –V

CALL Lab: Listening for Global Comprehension & Movie Review
ICS Lab: Debate

ELCS Lab:

1. Computer Assisted Language Learning (CALL) Lab:

The Computer aided Language Lab for 60 students with 60 systems, one master console, LAN facility and English language software meant for self-study by learners.

System Requirement (Hardware component):
Computer network with LAN with minimum 60 multimedia systems with the following specifications:
i) P –IV Processor a) Speed–2.8GHZ b)RAM–
512MB Minimum c)Hard Disk–80GB
ii)Headphones of High quality

2. Interactive Communication Skills (ICS) Lab:
A Spacious room furnished with movable chairs and audio-visual aids with a Public Address System, a T.V., a Digital Stereo–Audio & Video System, Camcorder, etc.

COURSE OUTCOMES:
Students will have attained to:

1. To listen actively, speak fluently and write accurately.
2. To speak with clarity and confidence reducing MTI and enhancing Employability Skills.
3. To demonstrate better understanding of nuances of English Language.
4. To communicate intelligibly at work place.
5. To plan and present ideas explicitly.

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FOREIGN LANGUAGE – FRENCH

INTRODUCTION:

In view of the growing importance of foreign languages as a communication tool in some countries of the world, French has been identified as one of the most popular languages after English. As a result, French program is introduced to develop the linguistic and communicative skills of engineering students and to familiarize them to the French communication skills. This course focuses on basic oral skills.

COURSEOBJECTIVES:

1. To inculcate the basic knowledge of the French language.
2. To hone the basic sentence constructions in day to day expressions for communication in their vocation.
3. To form simple sentences that aids in day-to-day communication.
4. To prepare the students towards DELF A1.
5. To develop in the student an interest towards learning languages.

Scope of this French programme : to address the communicative needs of our students with limited vocabulary in selected standard situations.
Objective of this French programme : to provide the students with the basic linguistic tools necessary to interact with their immediate environment seen through the prism of an intuitively habitual situations.

Unité- nom de leçon	Communication	Contenu / Vocabulaire	Grammaire	Durée	Date
Unité : - 1: **Les Fondamentaux de la Langue Française**	**Learning outcome :** The student will be able to : 1) Greet in the language. 2) Talk about French language family, French culture & civilisation. 3) Use the French Alphabet, Phonetics, French accents. 4) Identify the gender of nouns. 5) Name the days of the week, months of the year. 6) Count till 30. 7) Use subject pronouns + conjugated verbs to make basic sentences.				
	Contexte historique. Leçons de motivation.	***Les premiers contacts, Pourquoi le Français? Le Français est-il utile? La Francophonie, vidéos,..***	***Le monde Francophone, - L'histoire de la langue Française, Arbre Généalogique de la langue Française.***	1h	

	1.1) Les salutations	Comment saluer? Phrases de départ; Au revoir, À plus tard, …	À + adverbe de temps; À + demain,		Pratique : exercices oraux
	1.2) La politesse	Merci, Pardon, S'il vous plaît,…	Phonétique, prononciation		
	1.3) L'Alphabet Français	De A à Z. Voyelles et consonnes	Phonétique, prononciation		
	1.4) Les accents Français	Aigu, Grave, Circonflexe, Tréma, Cédille.	Méthode d'utilisation, exemples,..		
	1.5) Les jours de la semaine	De Lundi à Dimanche	Phonétique, prononciation	**1h**	
	1.6) Les mois de l'année	De Janvier à Décembre.	Phonétique, prononciation		
	1.7) Les nombres	De 0 à 30 Les chiffres jusqu'un 1-50 Les cardinal et normal	Phonétique, prononciation		
	1.8) Les articles definis et indefinis : Le genre: Le nom/ Le sujet	Le stylo, Le cahier, Le crayon, Exception: Le livre/ visage/village/collège/ collègue/cartable. La gomme/piscine/cantine/ plage/règle/ville/trousse, … Exception: La maison/nuit/ photo/moto	Les articles définis et indéfinis; Le, la, l', les, un, une, des. Identifier le gendre de noms	**1h**	
	1.9) Le pronom personnel ; le sujet et COD.	Comprendre les sujets / COD/ les noms etc.	Le pronom personnel: Le sujet, COD 1ère personne singulier,…	**1h**	

	1.10) La conjugaison	Verbes Être, Avoir, Faire, Aller, Aimer, S'appeler, habiter/ vouloir/ pouvoir/	Le présent de l'indicatif: Verbes réguliers et irréguliers (5 groupes)	**1h**	
	1.11) Formation des phrases	a) Lucie est étudiante. Elle est étudiante. b) Lucie a une trousse. Elle a une trousse. c) J'ai un cartable. Voilà le cartable. Paul a un crayon. Voici le crayon de Paul. Voici une règle. C'est la règle de Roland. Voici des stylos. Ce sont des stylos de Sylvie. d) Lokesh fait du vélo/ski/sport / vaisselle/ cuisine/ faire la lessive Sunitha vais à Paris. Paul aime la musique. La fille s'appelle Pooja. Elle habite à Kukatpally. Ravi connaît/ aide Pooja. Praveen veut du thé/café/pain/lait. Manisha peut danser.	Syntaxe: Phrases affirmatives; Sujet + verbe + COD, Définition: Sujet, Verbe, le complément d'objet direct. Articles contractés: de + le = du, à + le = au Phrases avec "Faire"	**2h**	**From (Homework/ Project/Assignement/Class Assessment) Project: PPt/ conventional presentation: Give personal opinion about the advantages and disadvantages of technology; not more than 100 words (UNIT TEST)**
Unité 2: Les Rencontres.	Learning outcome : The student will be able to : 1) Make acquaintance 2) Write/Talk about oneself, family and friends. 3) Write/Talk about professions. 4) Understand basic information on an invitation 5) Tell the time. 6) Introduce one's best friend. 7) Describe one's house				**From**

	2.1) Se présenter	Qui suis-je? Nom, l'âge, adresse, préférences, … Je tu il/elle/on, nous vous ils/elles	Formation des phrases avec le troisième personne –pour introduire les personnes.	**1h**	
	2.2) Faire connaissance	Comment vous appelez-vous? Où habitez-vous?,…	Dialogue: conversation de base entre deux étrangères/ personnes…	**1h**	
	2.3) Les professions / Les métiers	Médecin, professeur, architecte/ ingénieur/informaticien/ commerçant/homme d'affaires/ femme au foyer/fonctionnaire/,….	Masculin et féminin (genre) de professions/ quelques exceptions..	**1h**	
	2.4) Les relations familiales/ Presenter sa famille + professions	La famille La famille compose /recompose	L'adjectif possessifs- mon,ma,mes	**1h**	
	2.5) interroger quelque choses, qqn personne- c'est qui …..? qu'est-ce que c'est ?	Qui est-ce? Nom, l'âge, adresse, les choses	Les adjectives démonstratives Les mots interrogative/ formations des questions. Phrases interrogatives: 1) Verbe + Sujet + COD? 2) Pronom intrrgtv + verbe + sujet? Quel -->"Which/What. Quand? ---> "When" Comment--> How/What" Combien? -> "How much"	**2h**	

			Combien de? ----> “How many” Que?-----> “What” Qu’est-ce que? ---> “What” Quoi?--------> “What” Où? ----------> “Where” Qui?----------> “Who” À quelle heure? ----> “At what time” Pourquoi?-----> “Why”		
	2.6) La négation	Les expressions négatives	Ne .. pas Ne ….personne etc.	**1h**	
	2.7) Quelle heure est-il?	L’heure	Les expressions du temps- Etre à l’heure/ en avance/en retard	**1h**	
	2.8) Présenter son meilleur(e) ami(e)/ famille / Decriver son/sa meilleu/e ami/e (L’apparence physique) Décrivez sa maison	La description- La personnalité/caractère Gros, mince, grand, petit de taille, yeux, visage, cheveux, … L’apparence physique, … Couleur, forme, taille, Adjectifs de caractère: gentille, heureux,…	Les adjectives	**1h**	**To (Unit test) & assignment / Project: PPt/ conventional presentation on. Give personal opinion on the advantages and dangers of the internet; not more than 100 words**
Unité 3: Le monde autour de moi	**Learning outcome :** The student will be able to : 1) Describe one’s classroom, schoolbag house, bedroom. 2) Talk about one’s city. 2) Give and understand directions. 3) Book a room at a youth hostel, camping, bus/ train/ plane ticket.				**From**
	3.1) Décriver sa salle de classe/ Parler de son cartable	Dans, Il y a, Fenêtre, porte, lit, table, ordinateur, (Les meubles), stylos, crayons,	Il y a, Préposition de lieu: dans, devant, derrière,…	**1h**	

		trousse, livres, cahiers,….			
	3.2) Décrivez sa maison/ sa chambre/	Dans, Il y a, Fenêtre, porte, lit, table, ordinateur, rez-de-chaussée, étages, salon, immeuble, pièces, garde-robe, canapé, (Les meubles),….	Il y a, Préposition de lieu: dans, devant, derrière,…	**1h**	
	3.3) Parler de sa ville	Dans, il y a, grande, belle, ville, environ, à peu près, habitants, culture, activités commerciales, tourisme, clima, cuisine, autochtones gentils et accueillants,…	Il y a, Les adjectives de quantité beaucoup de/ peu de/ etc…. Les loisirs- les sports, la vacance tc.	**1h**	
	3.4) Donnez les directions en ville	À gauche, À droite, Tout droit, Traverser le pont/ rond-point/ carrefour	les points cardinaux: Nord, sud, Est, L'ouest	**1h**	
	3.5) réservez une chambre a l'hôtel / réservez un site dans un camping/ un billet de train/d'avion	Vocab- Au téléphone -Au guichet unique/ au comptoir - Au marche - Demander le prix		**1h**	**To (Midterm 1 Exam:**
Unité 4: Activités sociales. (Orientations sociales)	**Learning outcome :** The student will be able to : 1) Write/Talk about daily routine. 2) Express wishes. 3) Write/Talk about leisure activities and hobbies.				**From**
	4.1) La routine / La vie quotidienne	Se réveiller, se laver, prendre le petit-déjeuner, le déjeuner, moyen de transport, le cours, la cantine, manger, du pain, du riz, de la pizza,	Conjugaison des verbes pronominaux: se réveiller, se lever, se laver, s'habiller, …	**1h**	

		crudités, du gâteau, faire ses devoirs, balader, randonnées, promenade du soir, se coucher,	Conjugaison du Pronom réfléchi: se; Je me, Tu te, Il se,..		
	4.3) Exprimer ses vœux/ sa volonté	Je veux du café Je ne veux pas de café J'aime/ adore/ préfère le café/ vouloir/ pouvoir/ Commande la nourriture au restaurant	Articles partitifs: de + le = du, de+la=de la, de+le/la+voyelle =de l'…	**1h**	
	4.4) Mon passe-temps/ Mon temps libre/ Mes loisirs	Activités du weekend/ Activités de loisirs: se balader, faire une promenade dans la nature, faire une randonnée dans la nature, nager, faire les courses, faire les achats, aller au cinéma, … Qu'est-ce que vous aimez faire pendant votre temps libre/le weekend	Pendant le weekend, Expressions avec "faire" Comparaison: plus….que Les conjonctions: mais, où, et, donc, or, ni, car. Les adverbes: Souvent, quelquefois, parfois, rarement	**1h**	**To (Unit test) & Assignment/ Project: PPT/Conventional presentation: talk about your plan after college/ your passion**
Unité 5: Notre environnement (orientation dans l'espace et dans le temps : Où et quand)	**Learning outcome :** The student will be able to : 1) Write/Talk about seasons. 2) Give opinion about aspects of contemporary lifestyle. 3) Write e-mails, post cards, invitations. 4) Give opinion about the benefits and dangers of technology.				**From**
	5.1) Les saisons -parler des saisons.	L'été, L'e printemps, L'automne, L'hiver: froid, chaud, chaleureux, il y a du soleil, du tonnerre, des éclairs, des	En hiver, Il fait, il y a du soleil,..	**1h**	

		tempêtes, il y a du brouillard,…			
	5.2) La vie d'aujourd'hui : Donner son avis.	- La vie en ville et en campagne, selon vous/ À votre avis/ Les vacances, sont-elles importantes ? Quant à moi/ de mon point de vue/ Quelles sont le bénéfices et dangers de la technologie/ Internet?	Comparaison: plus….que Les conjonctions: mais, où, et, donc, or, ni, car. Les adverbes: Souvent, quelquefois, parfois, rarement	**2h**	
	5.3) Des correspondants /es	- Ecriver/composer/ rediger un courriel/ e-mail/ invitation/ carte postale -Laisser un message a un/e ami/e	Le present de l'indicatif Le futur proche : Aller + Infinitif	**2h**	
	5.4) Projets d'avenir	Parler de son rêve/ son avenir	Le futur proche : Aller + Infinitif	**1h**	
Révision / Sommaire	Contenu de ce qui a été faite Durant le semestre				**To (Unit test) & Assignment/Project: PPT/conventional presentation: Do you prefer Life in the city and life in the county side(village)**
					(Midterm 2 exam:
Les formalités des préparatifs	Activités diverses: compréhension écrites,				-

d'examen final.	exercices écrite, Accentuer sur les concepts principaux et les mots clés.				
Examen final			Bonne chance		**(External Exam starts)**

REFERENCE BOOKS:

1. Apprenons le Français 1& 2, New Saraswati House, 2015.
2. A propos, A1, Langers International, 2010.
3. Easy French Step-by-step by Myrna Bell Rochester.
4. Ultimate French Beginner-Intermediate (Coursebook) By Livid Language.
5. Ã L'Aventure: An Introduction to French Language and Francophone Cultures by Evelyne Charvier-Berman, Anne C. Cummings.

COURSE OUTCOMES:

1. The students will be able to communicate in French at A1 level.
2. The student will have an advantage in the competitive job market.
3. This course benefits the graduates when pursuing study opportunities in the countries where French is the official languag.