# The PROGRAMME STRUCTURE

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Year 1 Courses** | | | | | | | | | | | | | | | | | | | | | | | | |
| **Year 1 Semester 1 Courses (All Course are Core )** | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | **Name** | | | | | | **LH** | | | | | **TH** | | | | | **PH** | | | | **CH** | | **CU** |
| BIT7111 | | Computers Literacy | | | | | | 30 | | | | | - | | | | | 60 | | | | 60 | | 4 |
| BIT7112 | | Social media management | | | | | | 45 | | | | | - | | | | | - | | | | 45 | | 3 |
| BIT7113 | | Fundamentals of Mathematics | | | | | | 45 | | | | | 30 | | | | | - | | | | 60 | | 4 |
| BIT7114 | | Web Systems and Technologies | | | | | | 45 | | | | | - | | | | | 30 | | | | 60 | | 4 |
| BIT7115 | | Computer Ethics and Society | | | | | |  | | | | |  | | | | |  | | | |  | |  |
| BBA7114 | | Principles of English Language | | | | | | 30 | | | | | 30 | | | | |  | | | | 45 | | 3 |
|  | | **Total Semester Load** | | | | | |  | | | | |  | | | | |  | | | |  | | **18** |
| **Year 1 Semester 2 (All Course are Core)** | | | | | | | | | | | | | | | | | | | | | | | | |
| BIT7121 | | Data Mining and Warehousing | | | | | | 45 | | | | | - | | | | | - | | | | 45 | | 3 |
| BIT7122 | | Fundamentals of Programming | | | | | | 30 | | | | | - | | | | | 30 | | | | 45 | | 3 |
| BIT7123 | | Basic Statistics | | | | | | 45 | | | | | \_ | | | | | \_ | | | | 45 | | 3 |
| BIT7124 | | Management Information Systems | | | | | | 30 | | | | |  | | | | | 30 | | | | 45 | | 3 |
| BIT7125 | | Computer Networks and Data Communication | | | | | | 45 | | | | |  | | | | |  | | | | 45 | | 3 |
| BBA7122 | | Communication Skills and Public Relations | | | | | | 45 | | | | | - | | | | | - | | | | 45 | | 3 |
|  | | **Total Semester Load** | | | | | |  | | | | |  | | | | |  | | | |  | | **18** |
| **Year 1 Semester 2: Recess Term courses** | | | | | | | | | | | | | | | | | | | | | | | | | |
| **All course are electives – Chose One** | | | | | | | | | | | | | | | | | | | | | | | | | |
| BIT7131 | | | | IT Professional Training (Networks) | | | | 15 | | | | - | | | | 120 | | | | 75 | | | | 5 | |
| BIT7132 | | | | IT Professional Training (Database Mgt) | | | | 15 | | | | - | | | | 120 | | | | 75 | | | | 5 | |
|  | | | | **Total Recess Term Load** | | | |  | | | |  | | | |  | | | |  | | | | **5** | |
| **Year 2 Courses** | | | | | | | | | | | | | | | | | | | | | | | |
| **Year 2 Semester 1 (All Course are Core)** | | | | | | | | | | | | | | | | | | | | | | | |
| BIT7211 | | | Systems Security | | 45 | | | | - | | | | | | 30 | | | | 60 | | | | 4 |
| BIT7212 | | | Object Oriented Programming | | 30 | | | | - | | | | | | 60 | | | | 60 | | | | 4 |
| BIT7213 | | | Database Management Systems | | 45 | | | | - | | | | | | 30 | | | | 60 | | | | 4 |
| BIT714 | | | Operating Systems | | 60 | | | | - | | | | | | - | | | | 60 | | | | 4 |
| BIT7215 | | | Dynamic Websites | | 45 | | | | 30 | | | | | | - | | | | 60 | | | | 4 |
|  | | | **Total Semester Load** | |  | | | |  | | | | | |  | | | |  | | | | **20** |
| **Year 2 Semester 2 (3 Core Courses , 2 Elective Courses)** | | | | | | | | | | | | | | | | | | | | | | | |
| BBA7224 | | | Research Techniques | | 45 | | | | - | | | | | | 30 | | | | 60 | | | | 4 |
| BIT7222 | | | Systems Administration | | 30 | | | | 30 | | | | | | 30 | | | | 60 | | | | 4 |
| BIT7223 | | | Systems Analysis and Design | | 30 | | | | - | | | | | | 30 | | | | 45 | | | | 3 |
| BIT7224 | | | Event Driven Programming | | 30 | | | | \_ | | | | | | 60 | | | | 60 | | | | 4 |
| **ElectivesCourses (Chose 1)** | | | | | | | | | | | | | | | | | | | | | | | |
| BIT7225 | | | Enterprise Architecture | | 30 | | | | - | | | | | | 30 | | | | 45 | | | | 3 |
| BIT7226 | | | Multimedia Systems | | 30 | | | | - | | | | | | - | | | | 45 | | | | 3 |
|  | | | **Total Semester Load** | |  | | | |  | | | | | |  | | | |  | | | | **18** |
|  | | | **Year 2 Semester 2: Recess Term** | |  | | |  | | | | | | | |  | | | |  | | |  |
| BIT7231 | | | Industrial Training | | - | | | - | | | | | | | | 150 | | | | 75 | | | 5 |
|  | | | **Total Term Load** | |  | | |  | | | | | | | |  | | | |  | | | **5** |
| **Year 3 Courses** | | | | | | | | | | | | | | | | | | | | | | | |
| **Year 3 Semester 1 (3 Core Course , 2 electives Courses)** | | | | | | | | | | | | | | | | | | | | | | | |
| **Code** | | | | **Name** | **LH** | | | | **TH** | | | | **PH** | | | | | | **CH** | | | | **CU** |
| BIT7311 | | | | Principles of Software Engineering | 45 | | | | - | | | | 30 | | | | | | 60 | | | | 4 |
| BIT7312 | | | | Systems Audit and Forensics | 45 | | | | - | | | | 30 | | | | | | 60 | | | | 4 |
| BIT7313 | | | | Mobile Applications and Technologies | 30 | | | | - | | | | 30 | | | | | | 45 | | | | 3 |
| BBA7213 | | | | Management Theory and Practice | 45 | | | | 30 | | | | - | | | | | | 60 | | | | 4 |
| EBD 7111 | | | | Entrepreneurship and Innovation | 45 | | | | - | | | | 30 | | | | | | 60 | | | | 4 |
| **Electives Courses (Choose 1)** | | | | | | | | | | | | | | | | | | | | | | | |
| BIT7316 | | | | Marketing in the IT Sector | 30 | | | | - | | | | 30 | | | | | | 45 | | | | 3 |
| BIT7317 | | | | Human Computer Interaction | 30 | | | | - | | | | 30 | | | | | | 45 | | | | 3 |
|  | | | | **Total Semester Load** |  | | | |  | | | |  | | | | | |  | | | | **22** |
| **Year 2 Semester 2 Courses (All course are core)** | | | | | | | | | | | | | | | | | | | | | | | |
| BIT7321 | | | | IT Project | - | | | | | | - | | | | 150 | | | | 75 | | | | 5 |
| BIT7322 | | | | Database Programming | 45 | | | | | | - | | | | 30 | | | | 60 | | | | 4 |
| BIT7323 | | | | Enterprise Network Management | 30 | | | | | | - | | | | 30 | | | | 45 | | | | 3 |
| BIT7324 | | | | System Integration | 45 | | | | | | - | | | | 30 | | | | 60 | | | | 4 |
| BIT7325 | | | | Electronic Commerce | 45 | | | | | | - | | | | - | | | | 45 | | | | 3 |
|  | | | | **Total Semester Load** |  | | | | | |  | | | |  | | | |  | | | | **19** |
|  | | | | **Total Programme Load** |  | | | | | |  | | | |  | | | |  | | | | **120** |

**NOTE:**

**LH**=Lecture Hours

**PH**=Practical Hours

**TH**=Tutorial Hours

**CH**=Contact Hours

**CU**=Credit Unit

**1LH**=1CU

**1LH**=2PH=2TH=ICU

**15LH**=15CH=1CU

**30LH**=2CU

# Detailed Course Descriptions

## YEAR 1 SEMESTER 1 COURSES

**COURSE NAME: COMPUTER LITERACY**

**COURSE CODE: BIT 7111**

**LEVEL: Year 1 Semester 1**

**CREDIT UNITS: 4**

**CONTACT HOURS: 60**

**COURSEDESCRIPTION**

This course is designed to help the students understand how a computer works and to be able to use advanced features of the common application programs. It will be fundamental in aiding the students with the skills to use the computer and related gadgets to search for and document information as well as to enable smooth digital communication.

**COURSE OBJECTIVES**

By the end of this course, the student will be equipped with the skills to:

1. Use the computer to develop documents that can include presentations, assignments, academic articles, research papers, reports, etc.
2. Differentiate between the different components of a computer system like the hardware and software.
3. Appreciate advanced features of the Microsoft office suite programs e.g word processors, spreadsheets, presentations, databases and email applications.

**Course Learning Outcomes**

On completion of course, the student will be able to:

1. Use the computer to develop documents that can include presentations, assignments, academic articles, research papers, reports, etc.
2. Differentiate between the different components of a computer system like the hardware and software.
3. Apply advanced features of the Microsoft office suite programs e.g. spreadsheets, presentations, databases and web browsing and communications.

**Course Description**

**c: Introduction to Computers:** **5 Hrs**

Windows desktop, hardware components, software, menus, icons and Word Processing: mail merge, formatting and styling, editing, graphics, forms, import/export, objects, tables, columns, etc.

**Unit 2: Spreadsheets:** **8 Hrs**

Enhancing productivity, cells, worksheets, formulas, functions, macros, formatting, charts, Add-ins, analyzing financial and statistical data, import/exports, linkages with external databases.

**Unit 3: Presentations:** **7 Hrs**

Developing a presentation, textbooks, formatting, charts, graphics, animations, designs, special effects, conversion to Pdf. Image editing: Corel draw, Photo paint, MS paint, tool boxes, file conversions (bmp, jpeg, png) etc**.**

**Unit 4: Databases: 8 Hrs**

Tables, forms, reports, retrieval, querying, macros, linkages, relationships

**Unit 5: Web browsing and communications**: **8 Hrs**

Internet, browsers, WWW, search engines, web options, emails, outlook.

**Unit 6: Computer usages**:  **8 Hrs**

File management, formatting, back-up, viruses, basic security and safety techniques, Rebooting, remote log-in.

**Unit 7: Assembly of hardware:** **6 Hrs**

Cables, printers, mouse, CPUS, monitor, basic installations and configurations.

**Total Contact Hours:60 Hrs**

**Mode of Delivery**

Lectures, Practicals, Demonstrations, Peer discussions or Group work

**Mode of Assessment**

Continuous Assessment Tests 30%

Final Examination 70%

**Total 100%**

**References**

Hendrik, R., Kegel, P., Barth, S., Klaassen, R., & Wieringa, R. J. (2017). Computer Literacy Systematic Literature Review Method.

Morrison, C., Wells, D., & Ruffolo, L. (2014). *Computer literacy basics: A comprehensive guide to IC3*: Cengage Learning.

Parsons, J. J., & Oja, D. (2010). *Practical computer literacy*: Cengage Learning.

Seidel, R. J., Anderson, R. E., & Hunter, B. (2014). *Computer literacy: Issues and directions for 1985*: Academic Press.

**COURSE NAME** **SOCIAL MEDIA MANAGEMENT**

**COURSE CODE BIT 7112**

**COURSE LEVEL: Year 1 Semester 1**

**CREDIT UNITS: 4CU**

**CONTACT HOURS: 60 HRS**

Learning how to interact on various social media platforms is crucial in order to survive and thrive in this age of digital communication. In this course, a student will learn the ins and outs of social media platforms such as Facebook, Twitter, Pinterest, Google+, and more. You’ll also discover other types of social media you may not have been aware of and how to use them for your benefit—personally, academically, and eventually professionally as well.

**Course Objectives**

Students will be able to :

1. Clearly define social media.
2. Communicate a solid understanding of social media and how it has changed over time.
3. Identify the basic uses of social media.

**Learning outcomes:**

At the end of this course, students will be able to:

1. Identify and apply appropriate use guidelines and security features for each network.
2. Identify strategies for achieving academic and professional goals using each platform.
3. Identify and use security features for each platform

**Course Content**

**Unit 1:**  Understanding social media I **6 hours**

* Understanding social media II
* Self-presentation and
* identity management

**Unit 2:** Credibility and deception **6 hours**

* Privacy
* anonymity
* Social relationships
* discussion ties I

**Unit 3:** Social relationships & discussion ties II **6 hours**

* Social networks
* Social analytics I
* Social analytics II
* Social influence

**Unit 4:** Social capital **6 hours**

* Virtual communities
* Civic engagement
* Political participation
* Social mobilization and protests

**Unit 5:** Algorithmic social reality **6 hours**

* The filter bubble
* Social media users
* Ethics of social media research

**Unit 6:** Social media in organizations **5 hours**

* + News and information diffusion
  + Traditional media and social media

**Unit 7:** Social Media Past & Present **10 hours**

* Two Social Media Giants: Facebook and Twitter
* Social Media Rising Stars: LinkedIn, Google+, and Pinterest
* The Outcasts of Social Media: Blogs, Videos, Wikis, and More
* “Social” of Social Media: How Social Media Can Be Used for Interpersonal Communication.

**Unit 8:** Social Media and Marketing **5 hours**

* Social Media and Academics
* Social Media and the Workforce

**Unit 9:** Practical **10 hours**

**Total contact hours 60 hours**

|  |  |  |  |
| --- | --- | --- | --- |
| **Mode of Delivery** | |  |  |
| Lectures, Group work | |  |  |
| **Course Assessment** | |  |  |
| • | Tests | 20% |  |
| • | Assignments | 20% |  |
| • | Examination | 60% |  |

**PASS MARK 50%**

**Suggested Study Materials**

Easley, D., & Kleinberg, J. (2010). Networks, Crowds, and Markets: Reasoning About a Highly Connected World. New York, NY: Cambridge University Press.

Ellison, N. B., & boyd, d. (2013). Sociality through social network sites. In W. H.Dutton (Ed.), Oxford Handbook of Internet Studies (pp. 151-172). Oxford, UK: Oxford University Press

Carr, C. T., & Hayes, R. A. (2015). Social Media: Defining, Developing, andDivining. Atlantic Journal of Communication, 23(1), 46-65.

Hargittai, E., & Hsieh, Y.-l. P. (2011). From dabblers to omnivores: A typology of social network site usage. In Z. Papacharissi (Ed.), A networked self: Identity,community, and culture on social network sites (pp. 39-58). New York, NY

Routledge(2011). Social Networks 2.0. In M. Consalvo & C. Ess (Eds.),The handbook of Internet studies (pp. 384-405). Malden, MA

Blackwell Publishing boyd, d. (2011). Social network sites as networked publics: Affordances,

dynamics, and implications. In Z. Papacharissi (Ed.), A networked self: Identity,community, and culture on social network sites (pp. 39-58). New York, NY: Routledge.

Baym, N. (2015).Personal connections in the digital age(2ndEd.). Malden, MA: Polity Press. Ch.2 Making new media make sense.

Marwick, A. E., & boyd, d. (2011). I tweet honestly, I tweet passionately: Twitterusers, context collapse, and the imagined audience. New media & society,

**COURSE NAME: FUNDAMENTALS OF MATHEMATICS**

**COURSE CODE: BIT 7113**

**LEVEL: Year 1 Semester 1**

**CREDIT UNITS: 3**

**CONTACT HOURS: 60**

**Course Description**

This course will introduce the students to basic mathematical concepts that are commonly applied in personal, business, financial and other computer applications.

**Course Objectives**

This course will enable the students to:

1. Be familiar with mathematical concepts and their application in computer based applications
2. Identify major problems that can be solved using mathematical techniques.
3. Develop a rational for decision making based on mathematical solutions.
4. Use graphical representation of mathematical concepts e.g graphs, trees, venn diagrams e.t.c
5. Be familiar with amortization and construction of schedules.

**Learning outcomes**

By the end of this course, the student will be able to:

1. Apply mathematical concepts to their applications in computer based applications
2. Interpret mathematical solutions.
3. Construct graphical representations of mathematical concepts e.g graphs, trees, venn diagrams e.t.c
4. Computer loan amortization and schedules.

**Detailed Course Description**

1. Number operations: clock arithmetic, indices, sequences, series **6 Hrs**
2. Functions: quadratic equations, roots, maxima and minima, curves, applications **8 Hrs**
3. Financial mathematics: percentages, inverse percentages, interests (simple, compound), loan amortization.  **10 Hrs**
4. Counting: permutations, combinations **4 Hrs**
5. Matrices: addition, multiplication, inverse and determinants, applications **8 Hrs**
6. Set theory: sub sets, operations (union, intersection, complement), applications **6 Hrs**
7. Graph theory: definitions, types, paths, applications **6 Hrs**
8. Trees: definitions, types (rooted, ordered, binary), paths, applications **6 Hrs**
9. Practical: Spreadsheets, financial software **6 Hrs**

**Total Contact Hours 60 Hrs**

**Mode of Delivery**

Lectures, Tutorials, Practical, Peer discussions, Demonstrations

**Course Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Boyer, R. S., & Moore, J. S. (2014). *A computational logic handbook: Formerly notes and reports in computer science and applied mathematics*: Elsevier.

Rosen, K. H. (2007). Discrete mathematics and its applications. *AMC, 10*, 12.

Smirnov, V. I. (2014). *A course of higher mathematics* (Vol. 62): Elsevier.

Yang, X.-S. (2014). *Introduction to computational mathematics*: World Scientific Publishing Co Inc.

**COURSE NAME: WEB SYSTEMS AND TECHNOLOGY**

**Course Code: BIT7114**

**LEVEL: Year 1 Semester 1**

**CREDIT UNITS: 4**

**CONTACT HOURS: 60**

**Course Description**

This course provides knowledge on the basics of the Internet, its origin, how it is managed, organized and used. It also teaches learners how to develop websites using contemporary tools and techniques.

**Course Objectives**

This course aims to enable students to:

1. Explain the structure, governance and management of the Internet.
2. Explore website development tools and techniques.
3. Acquire skills of developing a website.

**Learning outcomes**

By the end of this course, the student will be able to:

1. Appreciate the governance, management and structure of the Internet.
2. Use website development tools and techniques.
3. Design and construct a website.
4. Publish and manage a website.

**Detailed Course Description**

1. Internet basics: browsers, the WWW, internet services, internet providers, internet administration, protocols. **3 Hrs**
2. Website design: concepts, hyperlinks, tables, images, audio, video, animations, forms, frames, text, layouts. 6 hours
3. HTML: concepts, lists, definitions, colors, backgrounds and events. **3 Hrs**
4. CSS: concepts, selectors, dependants, tabs, sites **3 Hrs**
5. Website management: Publishing, installations, web servers and administration, security. **3 Hrs**
6. Tools: Java script, PHP, XML, VB scripts, SQL **6 Hrs**
7. Back-end: connection with database, storage, retrieval  **6 Hrs**
8. Practical **30 Hrs**

**Total Contact Hrs60**

**Mode of Delivery**

Lectures, Practical, peer discussions and demonstrations

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Davies, J., Studer, R., & Warren, P. (2006). *Semantic Web technologies: trends and research in ontology-based systems*: John Wiley & Sons.

Duckett, J. (2008). *Beginning Web programming with HTML, XHTML, and CSS*: John Wiley & Sons.

Duckett, J. (2014). *Web Design with HTML, CSS, JavaScript and jQuery Set*: Wiley Publishing.

Nolan, D., & Lang, D. T. (2014). *XML and web technologies for data sciences with R*: Springer.

**COURSE NAME: PRINCIPLES OF ENGLISH LANGUAGE**

**COURSE CODE: BBA7114**

**LEVEL: YEAR ONE SEMESTER ONE**

**CREDIT UNITS: 3**

**CONTACT HOURS: 45**

**Course Description**

This course is designed for students who have a solid foundation in phonetics, phonogy and morphology which are parts of knowing a language. Knowing a language also means being able to put words together to form sentences and to express thought appropriately. Syntax in this unit provides the learners with knowledge to form sentences and to express thought appropriately . The unit introduces the student to the high level of linguistic analysis. It analyses the basic concepts in semantics and familiarizes the students with the fundamentals of language usage and rules for combining the meaning in a clear and simple manner.

**Course Objectives**

The objective of this course is to:

1. Demonstrate an understanding of English grammar
2. Demonstrate an understanding of English morphology
3. Analyze and explain the nature and internal structure of words.
4. Distinguish and apply word formation processes.
5. Transfer the knowledge to the understanding and appreciation of other languages.

**Course Learning Outcomes**

By the end of this course, students should be able to;

* Demonstrate an understanding of English grammar
* Analyze and explain the nature and internal structure of words.
* Distinguish and apply word formation processes.
* Transfer the knowledge to the understanding and appreciation of other languages.
* Transfer the knowledge to the usage of English language

**Detailed Course Description**

**Unit 1: Grammar in General**

1. **Parts of speech**
2. verbs, nouns
3. adverbs, adjectives
4. conjunctions, pronouns
5. interjections
6. prepositions
7. **Tenses/aspects**
8. Present continuous
9. Present
10. pass simple
11. past continuous
12. Past participle, future.
13. **The Difference Between Clause and Phrase**

**i)** Sentence structures-simple

* compound, negative, in derogative, affirmative
* Punctuation

**ii)** Passive and active voices

* Spelling and pronunciation
* Direct and indirect speech

**Unit 2: Morphology**

1. **Introduction to Morphology**
2. Definition of Morphology
3. Definition of Morpheme
4. Distinction between Morpheme, Morph, Allomorph
5. Criteria for determining Morpheme
6. Determinate versus Indeterminate words
7. **Categorization of Morphemes**
8. Free versus Bound Morphemes
9. Prefixes versus Suffixes
10. Inflectional affixes versus Derivational Affixes

**Unit 3: Affixes**

1. **Inflectional Affixes**
2. Inflectional Affixes
3. Plural affixes
4. Gender affixes
5. Comparative and Superlative Affixes
6. Characteristic aspects of inflectional Affixes
7. **Derivational Affixes**
8. Nominalisers
9. Adjectivalisers
10. Adverbalisers
11. Verbalisers
12. aspects of Derivational Affixes

**Unit 4: The structure of Words**

1. Difference between Root, Base / Stem and Affix
2. Types of words – simple, complex and compound words
3. Representing the internal structure of words on structure trees.

**Unit 5: Word Formation Processes**

1. **Affixation**
2. Prefixation versus Suffixation
3. Simple versus multiple affixation
4. Types of prefixes – negative prefixes, locative prefixes, prefixes of number, prefixes of degree or size, prefixes of attitude, reversatives, prefixes of time and order, pejorative prefixes etc.
5. Types of suffixes – class maintaining suffixes, class.
6. changing suffixes, Occupational suffixes, Diminutive and
7. feminine suffixes, status suffixes
8. **Compounding**
9. Types of compounds for example Noun compounds, verb compounds, Adverb compounds, Adjective compounds.
10. Endocentric versus Exocentric compounds
11. The concept of a Head word in a compound word
12. Characteristic aspects of English compounds
13. Presenting the internal structure of compounds on structure trees
14. **Other Word Formation Process**
15. Blending
16. Clipping
17. Word coinage
18. Echoism
19. Reduplication
20. Acronyms

**vii)** Borrowing

**Viii)** Conversion (Zero Derivation)

**Unit 6:Word Classes**

1. Noun
2. Pronoun
3. Verb
4. Adjective
5. Adverb
6. preposition

**vii).**Exclamation

**viii).**Determiners

**Unit 7: Sentence Type and Variety**

1. Sentences according to structure
2. simple sentence
3. compound sentence
4. complex sentence
5. Sentences according to function
6. A statement

**vii)**A question

**viii)**A command

**ix)** Exclamation

**Unit 8:Complement Options**

1. complement options for verbs
2. complement options for other categories
3. complement clauses

**Unit 9:Transformation and Movement**

1. Rules of transformation
2. Movement in Yes- No Questions
3. Deep structure and surface structure
4. Wh-Movement

**Unit 10:Introduction to Semantic**

1. Lexical and grammatical word and meaning
2. Semantic relations
3. Among word
4. Among sentences
5. Speech acts
6. Theories of semantics

**Vii).**Relationship between Syntax and Semantics

**MODE OF DELIVERY**

* Lectures
* Reading assignments
* Practical assignments
* Field trips
* Documentaries
* Essay writing

**INSTRUCTIONAL MATERIALS AND / OR EQUIPMENT**

* Whiteboard and Markers
* Flip Charts
* LCD Projectors
* CDs, DVDs and Tapes]

**COURSE ASSESSMENT**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Fromkin and Rodman (1983). An Introduction To Language Holt, Rinehart and Winston, Holt- Saunders Japan.

Aronuff, Mark (1976). Word Formation in Generative Grammar. Linguistic Inquiry Monograph M.I.T Press Cambridge, Mass

Marchand, Hans (1969). The Categories and Types of Present- Day English Word – Formation, 2nd ed. C.H. Beck’sche Verlagsbuchhandlung Munich.

Mathews, P.H (1976). Morphology: An Introduction to the Theory of Word Structure Cambridge University Press Cambridge England.

Crystal, D. (1987). *The Cambridge Encyclopedia of Language*. Cambridge. Press Syndicate.

Fromkin, V., Rodman, R., Hyams, N., (2003). *An Introduction toLanguage.* (7thed). U.S.A. Maple Vail Printers.

O’Grady, W., Dobrovolsky, M., Katamba, F., (1990).*Contemporary Linguistics:An Introduction.* Hong Kong. Oxford University Press.

Carnie, A. (2002). *Syntax: A Generative Introduction*. Malden. Blackwell Publishers.

Palmer, F. R. (1994). *Grammatical Roles and Relations*. New York. Cambridge University Press.

Radford, A. (1997). *Syntax: A minimalist Introduction*. New York: Cambridge University Press

Warriner E. John, (1988). *English – composition and grammar* (fifth edition): New York: Harcourt Brace Jovanovich Inc.

Fromkin V., Rodman R.,et al, (2001). *An introduction to language*, second Canadian edition, Thomson Canada limited, Canada

## **YEAR 1 SEMESTER 2 COURSES**

**DATA MINING AND WAREHOUSING**

**COURSE NAME: Data Mining and Warehousing**

**COURSE CODE: BIT 7111**

**LEVEL: Year 1 Semester 2**

**CREDIT UNITS: 3**

**CONTACT HOURS: 45**

**Course Description:**

The course is Marjory lecture based with some laboratory sessions however with no internship required.

**Course Objective**:

The Objectives of this course are to:

1. Make students understand the role and operation of data warehouses
2. Equip students with skills of developing data warehouses
3. Equip students with skills of maintaining existing data warehouses
4. Equip students with skills of manipulating data warehouses to generate information for business decision making
5. Explain how data warehousing combined with good business intelligence can increase a company’s bottom line.

**Course Learning Outcomes:**

1. After successfully completing this course, students should be able to:
2. Distinguish between on-line transaction processing (OLTP) and online analytical processing (OLAP), and the relationship between these concepts and business intelligence, data warehousing and data mining
3. Create a simple data warehouse (“data mart”)
4. Describe how structured, semi-structured, and unstructured data are all essential elements of enterprise information and knowledge management. In this context, the students will learn the principles of enterprise search
5. Describe the components of a data warehouse and different forms of business intelligence that can be gleaned from a data warehouse and how that intelligence can be applied toward business decision-making.

**Detailed Course Content**:

Building on the transactional database understanding gained in during the pre-requisite courses, this course will cover topics such as;

**Unit 1:** Data warehouse concepts: partitioning, granularity, record of source, and metadata                                                                                    6 Hours

**Unit 2:**       Building viable decision support environments.                 6 Hours

**Unit 3:**    Architect development                                                    5 Hours

**Unit 4:** Use of operational data stores, and transactional systems        6 Hours

**Unit 5:**      Data migration and integration                                        5 Hours

**Unit 6:** On-line analytic processing                                                     5 Hours

**Unit 7:**         ROLAP vs MOLAP                                                         5 Hours

**Unit 8:** Data mining.                                                              7 Hours

**Teaching-learning Methods:**

Ø  Interactive lectures

Ø  Class presentations

Ø  Mini Project work.

**Teaching-learning Materials:**

* Whiteboard and Markers
* Flip Charts
* LCD Projectors
* CDs, DVDs, and Tapes
* Laptop

**COURSE NAME: Fundamentals of Programming**

**COURSE CODE: BIT 7122**

**LEVEL: Year 1 Semester 2**

**CREDIT UNITS: 3**

**CONTACT HOURS: 45**

**Course description**

The course provides a strong base in the principles and practice of programming. A high-level programming language is used to explain the principles of programming and provide students with hands on practical skills.

**Course Objectives**

The course aims to provide students with:

1. Knowledge about the various programming languages
2. Knowledge and skills in programming.
3. Knowledge in planning and organization of programming projects
4. Techniques of evaluating syntactic and semantic correctness of a computer program

**Learning Outcomes**

Upon completion of the course, the students should be able to:

1. Practice with a programming language.
2. Apply knowledge and skills in programming concepts
3. Plan and organize programming projects
4. Evaluate syntactic and semantic correctness of a computer program

**Detailed Course Description**

1. Introduction to programming languages **4 Hrs**
2. Program structure **2 Hrs**
3. Variables and Operators  **2 Hrs**
4. Conditional statements **4 Hrs**
5. Looping statements **4 Hrs**
6. Arrays and strings **4 Hrs**
7. Functions **4 Hrs**
8. Advanced data types **4 Hrs**
9. Pointers **4 Hrs**
10. Dynamic memory allocation and dynamic structures **4 Hrs**
11. Working with files **2 Hrs**
12. Practical sessions **7 Hours**

**Total Contact Hours 45**

**Mode of Delivery**

Lectures, Practical, group work and demonstrations

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Kernighan, B. W., & Ritchie, D. M. (2006). *The C programming language*.

King, K. N. (2008). *C programming: a modern approach*: WW Norton & Company.

Nvidia, C. (2011). C programming guide version 4.0. *Nvidia Corporation*.

Sanderson, S. (2014). *C Programming: C Programming Language Guide For Beginners (Written By A Software Engineer)-Volume 1*: CreateSpace Independent Publishing Platform.

**COURSE NAME: BASIC STATISTICS**

**COURSE CODE:BIT 7123**

**LEVEL: Year 1 Semester 2**

**CREDIT UNITS: 3**

**CONTACT HOURS: 45**

**Course Description**

This is an introductory statistics course designed for students with limited statistics and mathematics background. It enables students understand basic statistical analysis.

**Course Objectives**

This course aims to enable students to:

1. Organize, analyze, interpret, summarize the data in a useful and informative manner.
2. Calculate measures of central tendency and dispersion.
3. Calculate and interpret regression and correlation tests
4. Estimate the population mean.

**Learning Outcomes**

By the end of this course, the student should be able to:

1. Use simple graphical techniques to perform preliminary analysis of data.
2. Use counting rules to solve permutation and combination problems associated with probability.
3. Interpret results of measures of central tendency and dispersion.
4. Apply and interpret binomial and normal distributions.
5. Test hypothesis on the mean of a normal population.

**Detailed Course Description**

**Unit 1: Introduction**   **4Hrs**

Definitions, population, samples, variables, types of statistics, uses of statistics

**Unit 2: Measures** **12Hrs**

Measures of central tendencies (mean, median, mode, e.t.c), dispersion and variation (variance, standard deviation)

**Unit 3: Probability** **12Hrs**

Population, sampling, variables, Random experiments and events.

**Unit 4: Distributions: 5Hrs**

Discrete, continuous (binomial, normal)

**Unit 5: Correlations and regressions 5Hrs**

**Unit 6: Scatter diagram** **3Hrs**

Spearman’s rank correlation coefficient, Pearson, Kendall, chi square etc.

**Unit7: Computer-aided statistical analysis.**  **4 Hrs**

Shortcuts, binary numbers

**Total Contact Hours: 45Hrs**

**Mode of Delivery**

Lectures, Tutorials, Practical, Group discussions

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Anderson, D., Sweeney, D., & Williams, T. (2014). *Modern business statistics with Microsoft Excel*: Nelson Education.

Berenson, M., Levine, D., Szabat, K. A., & Krehbiel, T. C. (2012). *Basic business statistics: Concepts and applications*: Pearson higher education AU.

Bowerman, B. L., O'Connell, R. T., Murphree, E., Huchendorf, S. C., & Porter, D. C. (2003). *Business statistics in practice*: McGraw-Hill/Irwin New York.

Newbold, P., Carlson, W., & Thorne, B. (2012). *Statistics for business and economics*: Pearson.

Siegel, A. (2016). *Practical business statistics*: Academic Press.

**COURSE NAME: MANAGEMENT INFORMATION SYSTEMS**

**COURSE CODE:BIT 7124**

**LEVEL: Year 1 Semester 2**

**CREDIT UNITS: 3**

**CONTACT HOURS: 45**

**Course description**

This course introduces important Management Information Systems (MIS) concepts. It surveys information systems technologies and their role in supporting a wide range of organizational functions including administrative operations, decision making, strategic initiatives, and corporate philosophies. The course also provides a managerial perspective on the use, design, and evaluation of information systems.

**Course objectives**

The objectives of this course are:

* 1. To introduce students to management information systems concepts with the aim of providing a strong foundation for more practical and applied work.
  2. To provide students with analytical and practical skills required to work with management information systems in organizations.

**Learning outcomes:**

By the end of this course, students should be able to:

* 1. Explain the use of management information systems for improving organization performance
  2. Explain the role and functioning of management information systems in organizations
  3. Examine some of the implications of using management information systems
  4. Describe several types of information systems used in business (for example transaction processing systems, decision support systems, etc) and the opportunities and challenges they represent
  5. Describe key areas of information systems management, namely: development, operations, and use.
  6. Understand the role of a non-IS person in shaping the development, management, and use of information systems in organizations.

**Detailed Course Description**

**Unit 1:**Fundamental concepts of management information systems **3Hrs**

**Unit 2:**Information and managerial decision making **3Hrs**

Information strategy, Models of decision making

**Unit 3:**Management information systems development **9Hrs**

**Unit4:**Management information systems development methodologies **24Hrs**

1. Types of Management information systems
2. Decision support systems
3. Transaction processing systems other types

**Unit 5:**Global information systems **6Hrs**

**Total Contact Hours: 45hrs**

**Mode of Delivery**

Lectures, Tutorials, Practical, Group discussions

**Course Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Galliers, R. D., & Leidner, D. E. (2014). *Strategic information management: challenges and strategies in managing information systems*: Routledge.

Hardcastle, E. (2008). *Business Information Systems*: Bookboon.

Laudon, K. C., & Laudon, J. P. (2016). *Management information system*: Pearson Education India.

Peppard, J., & Ward, J. (2016). *The strategic management of information systems: Building a digital strategy*: John Wiley & Sons.

Sousa, K., & Oz, E. (2014). *Management information systems*: Nelson Education.

**COURSE NAME: COMPUTER NETWORKS & DATA COMMUNICATION**

**COURSE CODE: BIT7125**

**LEVEL: Year 1 Semester 2**

**COURSE UNIT: 4**

**CONTACT HOURS: 60**

**Course description**

This course will introduce students to computer networks and data communications. The course addresses the concepts of computer networks and how they are applied in the day to day work of organizations, data communications highlighting how data and communication relate with signals during transmission within the domain of computer networks.

**Course Objectives**

The objectives of the course are to

* 1. Introduce the students to computer networks, data communication concepts and their application in organizations
  2. Enable students appreciate the different concepts in different communication models, for example the OSI and other models.
  3. Introduce students’ different forms of data and signal transmission
  4. To learn the difference between the OSI model, TCP/IP architectural model and the three-layer model.

**Learning Outcomes**

At the end of this course students should be able to

* 1. Define and differentiate between computer networks and data communication
  2. Explain the different forms of media used in communications, outline the there advantage and disadvantages over the other.
  3. Illustrate computer networking skills and explain the modes of data and media transmissions.

**Detailed Course Description**

**Unit 1:**Introduction to Data Communications **4 Hrs**

**Unit 2:** Data Transmission **3 Hrs**

**Unit 3:** Transmission Media **6 Hrs**

**Unit 4:** Signals, antennas and communication **3 Hrs**

**Unit 5:** OSI, TCP/IP and Three Layer Model **6 Hrs**

**Unit 6:** Digital Data Communication Techniques **6 Hrs**

**Unit 7:** Multiplexing **3 Hrs**

**Unit 8:** Duplex and simplex communications **3 Hrs**

**Unit 9:** LAN, WAN, MAN and PAN 6 Hrs

Unit 10: Internetworking  **20 Hrs**

**Total Contact Hours: 60 Hrs**

**Mode of delivery**

Lecturers, groups, seminars, tutorials

**Model of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Comer, D. E. (2008). *Computer networks and internets*: Prentice Hall Press.

DeCusatis, C. (2013). *Handbook of fiber optic data communication: a practical guide to optical networking*: Academic Press.

Hayes, J. (2013). *Modeling and analysis of computer communications networks*: Springer Science & Business Media.

Mir, N. F. (2014). *Computer and communication networks*: Pearson Education.

Stallings, W., & Manna, M. M. (1997). *Data and computer communications* (Vol. 6): Prentice hall Englewood Cliffs, NJ.

White, C. (2015). *Data communications and computer networks: a business user's approach*: Cengage Learning.

**COURSE NAME: COMMUNICATION SKILLS AND PUBLIC RELATIONS**

**COURSE CODE: BBA 7122**

**LEVEL: Year 1 Semester 2**

**CREDIT UNITS: 3**

**CONTACT HOURS: 45**

**COURSE description**

Communication is the most important skill in the life; we spend most of our working hours communicating. In the modern world skill at communicating technical concepts is sometimes just as important as having the technical skills themselves.This course develops students' skills in both the written and verbal communication of technical concepts. In addition, the general communication skills that are fundamental to getting and keeping a job are taught. This course provides students with the knowledge and skills to communicate professionally on many levels including writing; speaking; conducting meetings; giving presentations and interpersonal dialogues; and using electronic media. The course helps to highlight the nature, dynamics and the process of communication in the context of organizations. It involves the practical steps to become effective in communicating. The course encourages student learning with a range of interesting teaching techniques including guest lecturers and group presentations.

**Course Objectives**

**The objective of this course is to provide students with communication skills to enable them to;**

1. Understand the conceptual framework of communication
2. Explain the importance of effective communication.
3. Acquire practical communication skills.
4. Communicate effectively

**Expected learning outcomes**

**By the end of this course, students should be able to:**

1. Understand the conceptual framework of communication
2. Explain the importance of effective communication.
3. Increase your ability to communicate with intention, develop effective listening skills,
4. Choose optimal communication channels and strategies.
5. Improve group communication skills to make effective presentations, facilitate useful meetings, and write clear communications.
6. Acquire practical skills to communicate in crisis times

**Detailed Course Description**

**Unit 1: Introduction to Communication**

1. Definition, meaning and nature of communication
2. Communication channels
3. objectives of communication
4. Purpose of Communication
5. Process of Communication
6. Importance of Communication in Business
7. Differences between Technical and General Communication
8. Barriers to Communication
9. Measures to Overcome the Barriers to Communication  **3hrs**

**Unit 2: Types of Communication**

1. Types of Communication
2. Verbal Communication

* Importance of verbal communication
* Advantages of verbal communication
* Advantages of written communication

1. Significance of Non-verbal Communication **3hrs**

**Unit 3: Listening Skills:**

1. Listening Process
2. Classification of Listening
3. Purpose of Listening
4. Common Barriers to the Listening Process
5. Measures to Improve Listening
6. Listening as an Important Skill in Work Place. **2hrs**

**Unit 4: Language for Communication**

1. Language and Communication
2. General Principles of Writing
3. Improving Writing Skills
4. Essentials of good style
5. Expressions and words to be avoided
6. Grammar and Usage **3hrs**

**Unit 5: Communication in Organizations:**

1. Internal Communication
2. Stake Holders in Internal Communication
3. Channels of Internal Communication
4. External Communication
5. Stake Holders in External Communication
6. Channels of External Communication. **3hrs**

**Unit 6: Communication Network**

1. Scope and Types of Communication Network
2. Formal and Informal Communication Network
3. Upward Communication
4. Downward Communication
5. Horizontal Communication
6. Diagonal Communication. **2hrs**

**Unit 7: Writing Business Letter**

1. Importance of Business Letters
2. Difference between Personal and Business Letters
3. Structure and Format of Business Letters
4. Types of Business Letters. **2hrs**

**Unit 8:*Writing Memos, Circulars and Notices:***

1. What is a Memo?
   * Principles of précis writing
   * Approaches to memo writing
   * Characteristics of a memo
   * Guidelines for writing memos
   * Language and writing style of a memo
   * Format of a Memo; Circulars
   * Guidelines for writing a circular
   * Languages and writing style of a circular
   * Format of a circular
2. Notices

* Purpose
* Format
* Important points to remember while writing a notice **3hrs**

**Unit 9: Report Writing:**

1. Features of Writing a Good Report;
2. Purpose of Report Writing;
3. Difference between Business Report and Engineering Report

* -Characteristics of writing a good report
* -Importance of communication in report writing

1. Guidelines for Report Writing
2. Steps in Report Writing
3. Structure of Report
4. Types of Reports and Different Formats. **4hrs**

**Unit 10: Writing E-Mail**

1. Principles of E-mail
2. E-mail Etiquette
3. Overcoming Problems in E-mail Communication. **2hrs**

**Unit 11: Oral Communication Skills:**

1. Oral Business Presentation

* Purpose
* Audience
* Locale

1. Steps in Making a Presentation

* Research and planning
* Structure and style-Preparation
* Presentation

1. Delivering a Presentation. **3hrs**

**Unit 12: Meetings:**

1. Types of Meetings
2. Importance of Business Meetings
3. Different Types of Business Meetings
4. Conducting Meetings

* Selecting participants
* Developing agendas
* Opening meetings
* Establishing ground rules for meetings
* Time management
* Evaluations of meeting process
* Evaluating the overall meeting
* Closing meetings

1. Common Mistakes Made at Meetings. **4hrs**

**Unit 13: Reading Skills**

1. Reading Skill
2. Purpose of Reading
3. Types of Reading
4. Techniques for Effective Reading. **2hrs**

**Unit 14: Employment Communication: Resume**

1. Contents of Good Resume
2. Guidelines for Writing Resume
3. Different Types of Resumes
4. Reason for a Cover Letter to Apply for a Job-Format of Cover Letter
5. Different Types of Cover Letters **2hrs**

**Unit 15: Employment Communication – Job Interview**

1. Importance and Factors Involving Job Interview
2. Characteristics of Job Interview
3. Job Interview Process
4. Job Interview Techniques- Manners and etiquettes to be maintained during an interview
5. Sample Questions Commonly **3hrs**

**Unit 16: Public Relations and corporate communications**

1. Defining corporate communication
2. different perspectives of corporate communication
3. crisis communication and issue management
4. publicity
5. evaluation of public relations effectiveness
6. press release and articles
7. corporate identity and brand image **4hrs**

**Total contact hours 45hrs**

**MODE OF DELIVERY**

* Teaching
* Reading assignments
* Group presentation

**INSTRUCTIONAL MATERIALS AND / OR EQUIPMENT**

* Whiteboard and Markers
* Flip Charts
* LCD Projectors
* CDs, DVDs and Tapes

**COURSE ASSESSMENT**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Ghosh, M. (2012). *Business Communication Skills*: Pearson Education India.

Hargie, O. (2006). *The Handbook of Communication Skills*: Routledge.

Jones, L., & Alexander, R. (2000). *New International Business English Updated Edition Teacher's Book: Communication Skills in English for Business Purposes* (Vol. 3): Cambridge university press.

Kurtz, S., Silverman, J., & Draper, J. (2016). *Teaching and learning communication skills in medicine*: CRC press.

Locker, K. O., & Kaczmarek, S. K. (2009). *Business communication: Building critical skills*: McGraw-Hill Higher Education New York, NY.

Carol M. L & Debbie D. D(2002). Business Communication. 13th ed South – Western, a division of Thomson learning USA.

Mary Ellen G.(2000). Business communication process and product 3rd ed USA

Pamels. A & Teeanna. R (2004) Business communication design: Creativity, strategies and solutions. MC Graw Hill USA**.**

RaymondV. L & Marie E. F (2002). Basic business communication: skills for empowering the internet generation 9th ed MC Graw Hill USA.

## **YEAR 2 SEMESTER 1 COURSES**

**COURSE NAME: Systems Security**

**COURSE CODE: BIT7211**

**LEVEL: Year 2 Semester 1**

**CREDIT UNITS: 4**

**CONTACT HOURS: 60**

**Course Description**

This course unit will focus on training students in the area of systems security. The course looks at the basic concepts of securing systems for organizations and individuals including day- to-day work of troubleshooting security related issues for organizations.

**Course objectives**

This course aims to enable students to:

1. Identify contemporary threats to information security
2. Identify contemporary solutions to information security (tools and techniques)
3. Prevent and mitigate the threats to information security.

**Learning outcomes**

At the end of the course students should be able to:

1. Define the principles, techniques of an information systems security
2. Analyze and Explain the issues that affect and or attack and information systems of organizations
3. Identify threats in organization systems and device means of control and prevention
4. Formulate and or produce an information security policy
5. Enforce security policy in an organization

**Detailed Course Description**

**Unit 1:**Introduction: data security concepts, examples **3 Hrs**

**Unit 2:**Threats: viruses, defacements, spoofing, spamming, social engineering and any other computer crimes **8 Hrs**

**Unit 3:**Controls: access controls, integrity controls, policies, protocols (HTTPS, IPSec) **8 Hrs**

**Unit 4:**Tools and Techniques: Biometrics, forensics, cryptography, watermarking, recovery, authentication **10 Hrs**

**Unit 5: Bring your own device (BYOD):** BYOD security overview, Devices at work vs. devices for work the need for BYOD security, Example elements of a BYOD policy, Evaluating technology capabilities, The need for BYOD security, Considering BYOD security solutions, developing a bring your own device policy, Using BYOD security solutions to manage your policy, Other BYOD security measures, The challenges of BYOD security, BYOD pros and cons.

**Unit 5:** Risk analysis: disaster preparedness, planning and management, hazards, responses **8 Hrs**

**Unit 6:**Social issues: Ethical issues, legal implications, professional code of conduct. **8 Hrs**

**Total Contact Hours 45**

**Mode of Delivery**

Lectures, Practical, Demonstrations, Group work

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Harris, S. (2010). *CISSP all-in-one exam guide*: McGraw-Hill, Inc.

Knapp, K. J., Marshall, T. E., Kelly Rainer, R., & Nelson Ford, F. (2006). Information security: management's effect on culture and policy. *Information Management & Computer Security, 14*(1), 24-36.

Merkow, M. S., & Breithaupt, J. (2014). *Information security: Principles and practices*: Pearson Education.

Tittle, E., Stewart, J. M., & Chapple, M. (2006). *CISSP: Certified information systems security professional study guide*: John Wiley & Sons.

**COURSE NAME: Object Oriented Programming**

**COURSE CODE: BIT 7212**

**LEVEL: Year 2 Semester 1**

**CREDIT UNITS: 4**

**CONTACT HOURS: 60**

**Course Description**

The object-oriented programming paradigm has been used in many projects to build complex software systems. This course provides students with the opportunity to acquire skills for building software based on the object-oriented programming paradigm. C++ and/or Java are some of the languages used in this course.

**Course Objectives**

The course aims to enable students to:

1. Understand and use the Object Orientation Paradigm for software development
2. Develop software using a programming language like C++ and/or Java
3. Understand the use of basic Java features in a working program
4. Understand the use of the following advanced features of inheritance, encapsulation, overloading, polymorphism, abstract classes and interfaces in a program
5. Develop knowledge in the use of GUI-based event-driven programming in a working program assignment utilizing GUI components, event-listeners and event-handlers

**Learning Outcomes**

Upon successful completion of the course, students shall be able to:

1. Demonstrate the understanding and application of Object oriented design techniques for software development using a programming language like C++ and Java
2. Demonstrate correct use of the basic features in a working program: objects, classes, methods, IO handling, decisions and iterations
3. Demonstrate correct use of the following advanced features in a working program: inheritance, encapsulation, overloading, polymorphism, abstract classes and interfaces
4. Demonstrate knowledge of GUI-based event-driven programming in a working program assignment utilizing GUI components, event-listeners and event-handlers

**Detailed Course Description**

**Unit 1:**Introduction: Theory of the object-oriented paradigm, advantages and disadvantages **4 Hrs**

**Unit 2:**Data types, inheritance, templates and patterns **6 Hrs**

**Unit 3:**Encapsulation, inheritance, and polymorphism **4 Hrs**

**Unit 4:**Classes, interfaces and packages **3 Hrs**

**Unit 5:**Functions, pointers and operator overloading **4 Hrs**

**Unit 6:**Working with files and databases **3 Hrs**

**Unit 7:**Case study applications **6 Hrs**

**Unit 8:**Practical **30 Hrs**

**Total Contact Hours 45**

**Mode of Delivery**

Lectures, Demonstrations, Practical, Group work

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Deitel, H. M., & Deitel, H. (2014). *Java: How to Program (Late Objects)*: Pearson Education Limited.

Liang, Y. D. (2013). *Introduction to Java programming: brief version*: Pearson.

Lutz, M. (2013). *Learning Python: Powerful Object-Oriented Programming*: " O'Reilly Media, Inc.".

Pohl, I., Deitel, H., & Deitel, P. (2015). “Object-Oriented Programming Using C++”, Pearson Education Asia, 2003: BHARATHIDASAN ENGINEERING COLLEGE.

Smith, B. (2015). Object-oriented programming *Advanced ActionScript 3* (pp. 1-23): Springer.

**COURSE NAME: DATABASE MANAGEMENT SYSTEMS**

**COURSE CODE: BIT7103**

**LEVEL: Year 2 Semester 1**

**CREDIT UNITS: 4**

**CONTACT HOURS: 60**

**Course Description**

This course introduces the student to the basic theoretical and practical concepts of a database, its setup, implementation, use and maintenance in a typical business organization. The course consists of two parts: Part I, which is purely theoretical and Part II, which is practical.

**Course Objectives**

This course aims to enable students to be:

1. Familiarized with the basic concepts of database systems and data modeling.
2. Able to develop relational databases that are secure.
3. Able to formulate queries in databases and to use at least one DBMS.
4. Able to import and export data to and from different applications.

**Learning Outcomes**

On completion of the course, the student should be able to:

* 1. Appreciate the basic concepts of database systems and data modeling
  2. Develop relational databases that are secure.
  3. Formulate queries in databases and to use at least one DBMS
  4. Import and export data to and from different applications

**Detailed Course Description**

**Unit 1: Overview: 10 Hrs**

Definitions, file-based systems against database systems, data, storage, data structures, transactions, constraints.

**Unit 2Architecture:** **10 Hrs**

ANSI-SPARK architecture, centralized, decentralized, client-server, file-server, multi-tier

**Unit 3: the database development life cycle 8 Hrs**

**Unit 4: Database design 10Hrs**

Conceptual design, logical design, physical design

**Unit 5: Querying**  **6 Hrs**

Query formulation, SQL, PLSQL

**Unit 6: Database tuning 8 Hrs**

**Unit 7: Security 8 Hrs**

Data Integrity, data recovery, Security, people management.

**Total Contact Hours: 60 Hrs.**

**Mode of delivery**

Lecturers, groups, seminars, tutorials

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Connolly, T., & Begg, C. (2015). Database Systems: A Practical Approach to Design, Implementation, and Management: Pearson.

Coronel, C., & Morris, S. (2016). *Database systems: design, implementation, & management*: Cengage Learning.

Elmasri, R., & Navathe, S. B. (2015). *Fundamentals of database systems*: Pearson.

Kedar, S. (2009). *Database management system*: Technical Publications.

**COURSE NAME: OPERATING SYSTEMS**

**COURSE CODE: BIT 7214**

**LEVEL: Year 2 Semester 1**

**CREDIT UNITS: 3**

**CONTACT HOURS: 45**

**Course Description**

This course introduces the services and workings of operating systems. It covers how an operating system controls all the processes of a computer system including those of peripheral devices.

**Course Objectives**

By the end of this course, the student should be able to:

* + - 1. Describe the role of an operating system in the management of system resources.
      2. Acquire an in-depth understanding of the processes and principals involved within the operations of the computer.
      3. Explain how the performance of the computer system can be measured.

**Learning Outcomes**

On completion of this course, the student should be able to:

* + - 1. Appreciate the role of an operating system in the management of system resources.
      2. Assess the performance of a computer system.
      3. Utilize the principles that govern system operations to improve system performance.

**Detailed Course Description**

**Unit 1: Introduction** 2 Hrs

Basic concepts, history, types, functions of OS, components and structure

**Unit 2: Principles of Operating Systems 4 Hrs**

Structuring methods, abstractions, processes and resources, design of OS interfaces, interrupts, kernels

**Unit 3: Processes of Operating Systems 7 Hrs**

Definitions, states, operations, control block, scheduling, co-operating, processing, communication with client-server systems, process management, Synchronization, protection.

**Unit 4: Threads of Operating Systems 5 Hrs**

Introduction, types, benefits, creation, user and kernel threads, multithreading

**Unit 5: Deadlocks of Operating Systems 5 Hrs**

Introduction, locking, prevention, detection, handling, recovery

**Unit 6: Memory management 7 Hrs**

Introduction, functions, architecture, swapping, multi programming, paging, allocation, virtual memory, segmentation, thrashing, caching, replacements

**Unit 7: Device management 5 Hrs**

I/O Systems, serial and parallel devices, abstracting, buffering, performance, DMZ, recovery, hand-held devices.

**Unit 8: Tutorials 10Hrs**

**Mode of Delivery**

Lectures, Tutorials, peer discussions, Demonstrations, Group work

**Course Assessment:**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Arpaci-Dusseau, R. H., & Arpaci-Dusseau, A. C. (2015). *Operating systems: Three easy pieces*: Arpaci-Dusseau Books.

Lister, A. (2013). *Fundamentals of operating systems*: Springer Science & Business Media.

Silberschatz, A., Galvin, P. B., & Gagne, G. (2014). *Operating system concepts essentials*: John Wiley & Sons, Inc.

Stallings, W. (2005). *Operating Systems: Internals and Design Principles—Edition: 5*: Pearson.

Tanenbaum, A. S., & Bos, H. (2014). *Modern operating systems*: Prentice Hall Press.

**COURSE NAME: Dynamic Websites**

**COURSE CODE: BIT 7215**

**LEVEL: Year 2 Semester 1**

**CREDIT UNITS: 3**

**CONTACT HOURS: 45**

**Course Description**

This course reviews some of the more advanced features of the Internet and electronic applications. This unit provides the principles and skills of web application development. It arms students with current web programming technology and the skills for developing web-oriented applications. Topics covered are web development, from a web page to a web site, types of servers and architectures for web sites.

**Course Objectives**

This course aims to provide students with:

1. Knowledge on the psychology, planning and transmittal of business information
2. More advanced features of the Internet and electronic applications
3. Principles and skills of web application development
4. Current web programming technology and the skills for developing web oriented applications.

**Learning outcomes**

On completion of this course unit, the students will be able to:

1. Acquire knowledge on the psychology, planning and transmittal of business information
2. Study the principles and practices of business report writing required of men and women in business, industry, education and government
3. Understand the creative and functional aspects in understanding the problem, gathering and organizing data, and presenting reports for management, employees and the public

**Detailed Course Description**

**Unit 1:** Web development approaches and architectures **3 Hrs**

**Unit 2:** Security, performance, scalability, and maintainability of the different web development approaches **4 Hrs**

**Unit 3:** Web-enabled databases  **3 Hrs**

**Unit 4:** Dynamic web pages for B2C and B2B sites **3 Hrs**

**Unit 5:** Web security and legal issues **4 Hrs**

**Unit 6:** Projects will be prototype business systems which include dynamic database access. **4 Hrs**

**Unit 7:** Graphical design issues **4 Hrs**

**Unit 8:** Client-side programming and server-side programming **4 Hrs**

**Unit 9:** Web services and servers **4 Hrs**

**Unit 10:** Emerging technologies **4 Hrs**

**Unit 11:** Standards and Standard Bodies **4 Hrs**

**Unit 12:** Web information architecture **4 Hrs**

**Total Contact Hours 45 Hours**

**Mode of Delivery**

Lectures, Case studies, Practicals, Peer discussions

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Nixon, R. (2012). *Learning PHP, MySQL, JavaScript, and CSS: A step-by-step guide to creating dynamic websites*: " O'Reilly Media, Inc.".

Nixon, R. (2014). *Learning PHP, MySQL, JavaScript, CSS & HTML5: A Step-by-Step Guide to Creating Dynamic Websites*: " O'Reilly Media, Inc.".

O’reilly, T. (2005). What is web 2.0.

Shaik, C. (2010). Codeless dynamic websites including general facilities: Google Patents.

Sussman, D., Homer, A., West, J., & Greenwood, J. (2003). *Dave Sussman's Beginning Dynamic Websites with ASP. NET Web Matrix*: Wrox Press Ltd.

## **YEAR 2 SEMESTER 2 COURSES**

**COURSE NAME: RESEARCH TECHNIQUES**

**COURSE CODE: BBA 7224**

**LEVEL: YEAR 2, SEMESTER 2**

**CREDIT UNITS: 4**

**CONTACT HOURS: 60**

### Course Description;

The course provides a critical appreciation of theoretical and practical foundation necessary for problem identification and investigation in order to come out with answers solving managerial problems as well as adding to the existing knowledge. The course places the main issues on problem identification, methods of investigation, analysis and interpretation so as to come up with solutions that affect society politically, socially, economically, and culturally and other aspects.

### Course Objectives

**The objectives of this course are to;**

1. To engage students in a detailed exposition on research methods used.
2. To equip students with analytical tools to appreciate the multi-disciplinary approach in research.
3. Provide a firm foundation to students in order to develop research proposals and research reports

### Course Learning Outcomes

### By the end of this course, learners should be able to;

1. Describe the research methods used in scientific Research.
2. Use analytical tools in carrying out research and appreciate the multi-disciplinary approach in research.
3. Develop research proposals and research reports

**Detailed Course Description**

**Unit 1: Overview of research 6hrs**

1. Types of research
2. Preparing for research
3. Presenting findings

**Unit 2: The nature of research 5hrs**

1. Purposes of research
2. Characteristics of scientific inquiry and problems of research
3. Challenges in undertaking research
4. Qualities of a good research.

**Unit3: The research problem and research objectives 8hrs a)** Identifying the problem

1. Stating the research problems
2. Setting research objectives
3. Setting research questions

**Unit 4: Literature Review 4hrs a)** Sources of literature

1. Collecting relevant materials
2. Referencing

**Unit 4: Theoretical analysis 6hrs**

1. Theoretical framework
2. Conceptual framework
3. Research variables and how they are related to one another
4. Causal inferences
5. Co-variation.

**Unit 5: Research Methods 10hrs**

1. Research designs
2. Data collections
3. Data sources
4. Data sampling
5. Data processing

**Unit 6: Data analysis 6hrs**

1. Quantitative and Qualitative data analysis
2. Scales measurements

**Unit 7: Writing research Proposals and Research Reports 15hrs**

1. Principles of writing
2. Research Proposal
3. Report writing

**Total lecture hours= 60**

**Teaching methods**

Face to face lectures, handouts, group and class discussions

**Mode of assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Punch, K. F. (2005) Introduction to Social Research: Quantitative and Qualitative

Approaches, Second Edition, Sage Publications Ltd,London

SchuttR. K. (2006) Investigating the social world: the process and practice of

research, 5th edition, Sage Publications Ltd, London

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**COURSE NAME: SYSTEMS ADMINISTRATION**

**COURSE CODE: BIT7222**

**LEVEL: Year 2 Semester 2**

**CREDIT UNITS: 4**

**CONTACT HOURS: 60**

**Course Description**

This course provides the most essential aspects of System/Network administration. It exposes learners to the analysis and troubleshooting of problems that arise from day to day use of computer networks. It also develops the multiple skills necessary to perform systems administration tasks.

**Course Objectives**

By the end of this course, the student should be able to:

1. Demonstrate an understanding of server operating systems, user accounts and network devices.
2. Familiarize themselves with use, management and control of systems after installation.
3. Demonstrate network security set up and programming.
4. Describe the processes and techniques of corporate network security.

**Learning Outcomes**

On completion of this course, the student should be able to:

* + - 1. Install server operating systems and set up user accounts
      2. Configure network devices
      3. Control, manage and use a system after installation
      4. Build secure and reliable corporate networks

**Detailed Course Description**

**Unit 1: Introduction: 5 Hrs**

Network concepts, tasks of systems administrators, systems administration documentation and tools.

**Unit 2: Hardware configuration and Networking: 6Hrs**

OS (Host) installation, Software installation maintenance, TCP/IP, Ethernet, IP and other parts of the protocol suit, routing, commands, DNS and bind.

**Unit 3: Configuration 6 Hrs**

DHCP Server roles, DNS Server roles, Routing and remote access, Unix Shell programming: processes and interpreting output.

**Unit 4: Network security 6 Hrs**

Common problems, monitoring tools, system protection, securing data transmissions and authentication, security policies, policy based networks, maintain network health with network access protection, law, ethics and rights in systems administration, firewalls and internet security

**Unit 5: Network management 6 Hrs**

Accounts, Protocols, managing users, active directory domain services, basic network and system services.

**Unit 6: Performance monitoring tools 6 Hrs**

Goal of performance analysis, bottlenecks, monitoring programs and administration concerns

**Unit 7: Files and file systems 6 Hrs**

File systems structure and directory, partitions, Log files, syslog and network file Technology systems, dealing with log information, log file location, syslog, client and server concepts and print services

**Unit 8: Back up: 4Hrs**

Importance of backups, backup technology and concepts and dealing with distributed DBMS, back up deployment and recovery.

**Unit 9: Practical 30 Hrs**

**Total Contact Hours 60**

**Mode of Delivery**

Lectures, Demonstrations, Practical, peer discussions and Group work

**Course Assessment:**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Adelstein, T., & Lubanovic, B. (2007). *Linux system administration*: " O'Reilly Media, Inc.".

Soyinka, W. (2016). *Linux Administration: A Beginner’s Guide*.

Stanek, W. R. (2014). *Windows 8.1 administration pocket consultant: storage, security, & networking*: Microsoft Press.

Taylor, D., & Perry, B. (2016). *Wicked Cool Shell Scripts: 101 Scripts for Linux, OS X, and UNIX Systems*: No Starch Press.

Watters, P. A. (2016). UNIX System Administration with Solaris 11.3: A Course for Beginners.

**COURSE NAME: Systems Analysis and Design**

**COURSE CODE: BIT 7223**

**LEVEL: Year 2 Semester 2**

**CREDIT UNIT: 3**

**CONTACT HOURS: 45**

**Course Description**

The course uses structured systems analysis and design techniques to develop and document effective computer-based information systems. It focuses on the tools and techniques used for analysis and design of systems to meet the increasing need for information within organizations.

**Course Objectives**

The course aims to provide students with understanding and skills on:

* 1. The systems concepts and the system Development Life Cycle
  2. The role of the System Analyst in the systems development life cycle
  3. The techniques of requirements elicitation, specification, and analysis of information systems
  4. Data modeling in information systems development
  5. Process modeling in information systems development
  6. Information system development and maintenance

**Learning Outcomes**

At the end of the course, students shall be able to:

1. Explain the systems theoretical concepts and the system Development Life Cycle
2. Explain the role of the System Analyst in the systems development life cycle
3. Describe and apply the techniques of requirements elicitation, specification, and analysis to information systems development
4. Create a data model for an information systems development project
5. Create a process model for an information systems development project
6. Explain how Information system construction and maintenance is done

**Detailed Course Description**

The major topics covered include the areas of:

**Unit 1:**Systems theory **2 Hrs**

**Unit 2:**The systems development life cycle **3 Hrs**

**Unit 3:**The role of the systems analyst **1 Hr**

**Unit 4:**Information Systems Requirements Analysis **3 Hrs**

**Unit 5:** Process modeling with data flow diagrams **6 Hrs**

**Unit 6:** Logic and process specification **6 Hrs**

**Unit 7:** Data modeling with entity relationship diagrams **6 Hrs**

**Unit 8:**System construction, Implementation and maintenance **3 Hrs**

**Unit 9:**Case study and Tutorials (30 hours) **15 Hrs**

Total Contact Hours: **45 Hrs**

**Mode of Delivery**

Lectures, Case studies, Tutorials, Seminars, Group work

**Course Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**Total Mark: 100%**

**References**

Dennis, A., Wixom, B. H., & Tegarden, D. (2015). *Systems analysis and design: An object-oriented approach with UML*: John Wiley & Sons.

Kendall, K. E., & Kendall, J. E. (2010). *Systems analysis and design*: Prentice Hall Press.

Rosenblatt, H. J. (2013). *Systems analysis and design*: Cengage Learning.

Satzinger, J. W., Jackson, R. B., & Burd, S. D. (2011). *Systems analysis and design in a changing world*: Cengage learning.

Valacich, J. S., George, J. F., & Hoffer, J. A. (2015). *Essentials of systems analysis and design*: Pearson Education.

**COURSE NAME: Event Driven Programming**

**COURSE CODE: BIT 2204**

**LEVEL: Year 2 Semester 2**

**CREDIT UNIT: 3**

**CONTACT HOURS: 60**

**Course Description**

This course is an introduction to event-driven programming using the Visual Basic language. Principles of problem solving and algorithm design will be introduced.

**Course Objectives**

The aims of this course are:

1. To introduce students with the concepts of program flow charts, algorithms and pseudo codes.
2. To understand the VB event driven programming concepts.
3. To acquire knowledge and skills to write, test and debug VB applications

**Learning outcomes**

By the end of this course, students will;

1. Appreciate the concepts of program flow charts, algorithms and pseudo codes
2. Appreciate the VB event driven programming concepts
3. Acquire knowledge and skills to write, test and debug VB applications

**Detailed Course Description**

**Unit 1:**An overview of visual thinking.

introduction to visual languages and visual programming; examples of languages for handling visual information; examples of languages for handling visual interactions; visualization of software design; visual coaching systems; visual interface design systems; non-textual programming environments (including diagrammatic systems and iconic systems); table- and form-based systems; visual database design; advances in visual languages and visual programming systems. **6 Hrs**

**Unit 2:Fundamentals of programming in visual programming**: Visual Basic Objects, Visual Basic Events, Numbers, Strings, Input and Output, And Built-In Functions **4 Hrs**

**Unit 3:General procedures:** Sub procedures, Function Procedures, And Modular Design. **3 Hrs**

**Unit 4:Decisions:** Relational and Logical Operators, if blocks, and select case blocks.

**3 Hrs**

**Unit 4:Repetition:** do loops, Processing Lists of data with do loops, and for...next loops **4 Hrs**

**Unit 5:Arrays:** Creating and Accessing Arrays, Using Arrays, Control Arrays, Sorting and Searching, and Two-Dimensional Arrays **4 Hrs**

**Unit 6:Sequential files:** Sequential Files, and Using Sequential Files **6 Hrs**

**Unit 7:Random-access files:** User Defined Data Types, and Random-Access Files

**6 Hrs**

**Unit 8:Additional controls and objects:** List boxes and Combo boxes, nine elementary controls, and five additional objects **6 Hrs**

**Unit 9:Database management:** An Introduction to Databases, Relational Databases and SQL, and three additional Data-Bound Controls; Creating and Designing Databases **6 Hrs**

**Unit 10:Object-oriented programming:** Classes and Objects, Collections and Events, and Class Relationships  **6 Hrs**

**Unit 11:Communicating with other applications:** OLE, and Accessing the Internet with Visual Basic **6 Hrs**

**Total Contact Hours 60**

**Mode of Delivery**

Lecture, Workshop (tutorials, case studies). Implementation of concepts may be done using Visual basic.

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Bradley, J. C., & Millspaugh, A. C. (2003). *Programming in Visual Basic. Net*: McGraw-Hill/Irwin.

Deitel, H. M., Deitel, P. J., & Nieto, T. R. (2001). *Visual Basic. Net with Cdrom*: Prentice Hall PTR.

Pialorsi, P., & Russo, M. (2007). *Introducing microsoft® linq*: Microsoft Press.

Schneider, D. I. (2013). *An Introduction to Programming Using Visual Basic 2012*: Prentice Hall Press.

## **YEAR 2 SEMETSRE 2 ELECTIVES (CHOOSE ANY ONE COURSE)**

**COURSE NAME: ENTERPRISE ARCHITECTURE**

**COURSE CODE: BIT 2205**

**LEVEL: Year 2 Semester 2**

**CREDIT UNIT: 3**

**CONTACT HOURS: 45**

**Course Description**

This course explores the design, selection, implementation and management of enterprise IT solutions. The focus is on applications and infrastructure and their fit with the business. Topics covered will address enterprise architecture concerns both within and beyond the organization, with attention paid to managing risk and security within audit and compliance standards. Students will also perfect their ability to communicate technology architecture strategies concisely to a general business audience.

**Course Objectives**

The objectives of the course are to:

* 1. Introduce students to design, selection, implement and management enterprise IT solutions.
  2. Introduce students to risk management and security issues within audit and compliance standards.
  3. Introduce students to how to communicate technology architecture strategies to general business audience.
  4. Introduce students to enterprise architecture frameworks and service oriented architecture.
  5. Introduce students to emerging technological issues such as green computing, virtualization and cloud computing.

**Learning Outcomes**

Upon successful completion of the course, students will be able to:

1. Understand a variety of frameworks for enterprise architecture analysis and decision-making.
2. Evaluate the total cost of ownership and return on investment for architecture alternatives.
3. Utilize techniques for assessing and managing risk across the portfolio of the enterprise.
4. Evaluate and plan for the integration of emerging technologies.
5. Manage proliferating types and volume of content.
6. Understand the core concepts of data/information architecture.
7. Evaluate existing data/information architecture designs.
8. Plan for business continuity.
9. Understand the benefits and risks of service-oriented architecture.
10. Understand the role of audit and compliance in enterprise architecture.

**Detailed Course Description**

**Unit 1:**Service Oriented Architecture **4 Hrs**

**Unit 2:**Enterprise Architecture Frameworks

Unit 3: Internet of Things (IOT) **4 Hrs**

**Unit 4:**System Integration **3 Hrs**

**Unit 5:**Enterprise Resource Software **1 Hr**

**Unit :7**Monitoring and Metrics for Infrastructure and Business Processes **3 Hrs**

**Unit 8:**Green Computing **1 Hrs**

**Unit 9:**Virtualization of Storage and Systems **2 Hrs**

**Unit 9:**The Role of Open Source Software **2 Hrs**

**Unit 10:**Risk Management **2 Hrs**

**Unit 11:**Business Continuity **2 Hrs**

**Unit 12:** Total Cost of Ownership and Return on Investment **1 Hr**

**Unit 13:** Software as a Service Cloud Computing **3 Hrs**

**Unit 14:** Enterprise Data Models **3 Hrs**

**Unit 15:** Data/Information Architecture and Data Integration **3 Hrs**

**Unit 16:** Content Management, Cloud Computing 2hrs **1 Hr**

**Unit 17:** Audit and Compliance **2 Hrs**

**Unit 18:** System Administration **2 Hrs**

**Unit 19:** IT Control and Management Frameworks **2 Hrs**

**Unit 20:** Emerging Technologies **2 Hrs**

**Total Contact Hours: 45**

**Mode of Delivery**

Lectures, Practical, Projects, Case studies, Tutorials, Group work, Individual studies

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Cummins, F. A. (2002). *Enterprise integration: an architecture for enterprise application and systems integration*: John Wiley & Sons, Inc.

Lankhorst, M. (2009). *Enterprise architecture at work* (Vol. 352): Springer.

Ross, J. W., Weill, P., & Robertson, D. (2006). *Enterprise architecture as strategy: Creating a foundation for business execution*: Harvard Business Press.

Simon, D., Fischbach, K., & Schoder, D. (2014). Enterprise architecture management and its role in corporate strategic management. *Information Systems and e-Business Management, 12*(1), 5-42.

**COURSE NAME: Multimedia Systems**

**COURSE CODE: BIT 2206**

**LEVEL: Year 2 Semester 2**

**CREDIT UNIT: 3**

**CONTACT HOURS: 45**

**Course Description**

This course provides a comprehensive overview of the various platforms, applications, media and technology used to develop digital media products and communications. This course will investigate the use of several software tools for multimedia production and the ways in which media components can be represented and integrated into final multimedia production.

**Course Objectives**

The course objectives this course is to:

1. Introducing students to the concepts of electronic media, the systems there of and the general field of multimedia.
2. Investigating the use of several software tools for multimedia production and the ways in which media components can be represented and integrated into final multimedia production.

**Learning Outcomes**

On completion of this course unit, the students will be:

1. Introduced to digital graphics, photography, video, audio, networked multimedia and authoring.
2. Taught visual design skills as a basis for working in Graphic Design and other major areas of multimedia production.
3. Able to learn a variety of design techniques using specialist software to design and manipulate images;
4. Able to learn the art of multimedia.

**Detailed Course Description**

**Unit 1:**Comprehensive overview of the various platforms, applications, media and technology used to develop digital media products and communications. **10 Hrs**

**Unit 2:**Introduction to digital graphics

1. Photography **5 Hrs**
2. Video **5 Hrs**
3. Audio **5 Hrs**
4. Networked multimedia and authoring. **5 Hrs**

**Unit 3:**Visual design skills: Leading to Graphic Design and other major areas of Multimedia Production, including a variety of design techniques using specialist software to design and manipulate images. **15 Hrs**

**Total Contact Hours 45**

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**Teaching Methods**

Teaching will be in form of lectures and lab demonstration

**References**

# YEAR 2 RECESS TERM COURSE

**COURSE NAME: INTERNSHIP / INDUSTRIAL TRAINING**

**COURSE CODE: BIT 2301**

**COURSE LEVEL: YEAR 2/3 RECESS TERM**

**COURSE CREDIT: 4CU**

**CONTACT HOURS: 60**

**Course Description**

Industrial Placement promotes and develops long-term strategic teaching and research alliances between higher education institutions and industry. It plays a crucial role in promoting and facilitating practical training by providing students the opportunity to apply advanced knowledge and skills acquired in class to real world industry based problems and also gain exposure to “real life work experience.”

**Course Objectives**

The course aims to enable students, to:

1. Understand the different types of Information Technology careers and their roles in a real-world business organization
2. Apply and translate Information Technology knowledge and best practice to real industry based problems
3. Acquire soft skills to enhance effective participation in group based industry projects
4. Learn and practice good working ethics and communication skills with industry based staff and Supervisors.

**Learning Outcomes**

By the end of this course, the student should be able to:

1. Explain the different types of Information Technology careers and their roles in a real-world business organization
2. Demonstrate the ability to apply and translate Information Technology knowledge and best practice to industry based problems
3. Demonstrate creativity and innovation in solving problems related to real-life projects
4. Demonstrate soft skills for enhanced effective participation in group based industry projects
5. Demonstrate and practice good working ethics, communicate effectively and exhibit good interpersonal skills with industry based staff and Supervisors.

**Detailed Course Description**

The major areas that will be emphasized during industrial training include

1. Orientation to Industry, Career Prospects & Human Resource Policy **6hrs**
2. ICT Infrastructure in Industry **10hrs**
3. Communication Network Infrastructure **4hrs**
4. Software development **15hrs**
5. Systems Installation **4hrs**
6. Quality Assurance **4hrs**
7. Hardware Maintenance **8hrs**
8. Audit and Review Communication Policies **6hrs**
9. Safety Management **4hrs**
10. Project Report Writing (practical) **30 hrs**

**Total contact Hours 75**

**Mode of Delivery**

Mentorship

**Mode of Assessment**

Industry Supervisor’s Report 40%

Academic Supervisor’s Report 30%

IT Report 30%

Total 100%

## **Year 3 Semester 1 Courses**

**COURSE NAME: PRINCIPLES OF SOFTWARE ENGINEERING**

**COURSE CODE: BIT 3101**

**COURSE LEVEL:Year 3 Semester 1**

**COURSE CREDIT 4 CU**

**CONTACT HOURS 60 HOURS**

**Course description**

This course explores basic truths, rules or assumptions about software engineering that hold regardless of the technique, tool or language selected. The course introduces students to principles in software development i.e. all that is involved between the conception of the desired software through to the final manifestation of the software (software product).

**Course Objectives**

The course aims to provide students with understanding and skills in:

1. Software Development process and the core activities at various levels of development
2. Requirements analysis of a simple software system
3. Managing a Software Development process
4. Designing, implementing and deploying a software product
5. Managing a team of software developers
6. Software Documentation
7. Validation, Verification and testing a software Product.

**Learning outcomes**

Upon successful completion, the student should be able to:

1. Demonstrate mastery of the software development process, describing core activities at various levels of software development;
2. Perform requirement analysis of a simple software system;
3. Show ability to manage a software development process;
4. Design, oversee implementation and deployment of a software product;
5. Manage a team of developers;
6. Demonstrate skills in at least one tool of software documentation;
7. Work in a team to design, develop, test and validate a software product.

**Detailed Course Description**

**Unit 1: Introduction to software engineering 3hrs**

Definitions, why software engineering, software process models

**Unit 2: Phases in the software development process 10hrs**

Feasibility study, Requirements analysis, design and Specification, implementation, maintenance and documentation

**Unit 3: Software Management 6hrs**

Planning and controlling a software development project.

**Unit 4: Software design: 8hrs**

Abstraction, modularity, information hiding, design methods, design documentation.

**Unit 5: User Interface design and adaptation 8hrs**

Usability analysis, user-centered design, prototyping

**Unit 6: Software modularization 6hrs**

Modular design, Design patterns and common architectural patterns

**Unit 7: Management of a software development process 8hrs**

Software project planning and issue tracking

**Unit 8: Introduction to Quality Assurance: 8hrs**

Verification Validation and reliability methodologies

**Unit 9: Introduction to Software Evolution 3hrs**

**Total Contact Hours 60**

**Mode of Delivery**

Lectures, Tutorials, Group work

**Mode of Assessment**

Assessment is through assignments, tests and end of semester examination

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Braude, E. J., & Bernstein, M. E. (2016). *Software engineering: modern approaches*: Waveland Press.

Juristo, N., & Moreno, A. M. (2013). *Basics of software engineering experimentation*: Springer Science & Business Media.

Mall, R. (2014). *Fundamentals of software engineering*: PHI Learning Pvt. Ltd.

Tsui, F., Karam, O., & Bernal, B. (2016). *Essentials of software engineering*: Jones & Bartlett Learning.

Wasson, C. S. (2015). *System engineering analysis, design, and development: Concepts, principles, and practices*: John Wiley & Sons.

**COURSE NAME: Systems Audit and Forensics**

**COURSE CODE: BIT 3102**

**COURSE LEVEL: Year 3 Semester 1**

**COURSE CREDIT 4 CU**

**CONTACT HOURS 60 HOURS**

**Course Description**

In this course, students apply the principles of computer forensics in order to detect, track and prevent network intrusions. Students will learn how to collect analyze and interpret data collected from various sources as well as examine different methods of recovering and examining digital evidence.

**Course Objectives**

The student will be able to demonstrate foundational knowledge and skills in forensics. In particular, the student will be able to:

1. Describe information security and its critical role in business.
2. Describe what drives the need for information security.
3. Describe the need for risk management.
4. Identify and assess risks.
5. Write procedures for assessing and controlling risk including plans for continuity.
6. Describe various security technologies and types of physical security and how both are used in business.
7. Discuss the process of implementing security in business including identifying and describing forms of personnel security.
8. List and describe the generally accepted computer forensic procedures.
9. Explain and list the various legislation and regulations that impact technology.

**Learning outcomes**

Upon successful completion of this course, the student will have reliably demonstrated the ability to:

1. Differentiate between the various necessary monitoring, detecting, and notification components.
2. Examine and collect digital evidence.
3. Analyze file system formats, recover lost data and examine secure deletion methods.
4. Review and examine a secure, scalable firewall topology.
5. Test and compare some different disk and forensic tools.
6. Plan e-mail, cell phone and mobile device investigations.
7. Develop report writing and testimony skills for high tech investigations.

**Detailed Course Description**

1. Introduction to Forensics and IS Auditing **6 Hrs**
2. Basics of Information Security & Cryptographic Technologies **9 Hrs**

Information securitypolicies, standards andprocedures andgenerally acceptedpractices

1. Auditing firewalls systems and virtual private networks **12Hrs**

Risk-based IT auditstrategy, Specific auditplanning and Audit reporting,communications andfollow-up

1. Configuration, deployment, and management of forensics tools **3 Hrs**
2. Incident response **3 Hrs**

Importance of incident response, incidence response plan

1. Overview of computer investigations **12Hrs**

Diigital investigations and evidence, digital crime scene investigations and digital evidence controls

1. Data acquisition **6 Hrs**

Reading the source data, writing the output data, file carving

1. Writing investigation reports **9 Hrs**

Total Hours: **60 Hrs**

**Mode of delivery**

The course will be taught by using lectures, tutorials and assignments.

**Mode of assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Carlet, C., Hasan, M. A., & Saraswat, V. (2016). *Security, Privacy, and Applied Cryptography Engineering: 6th International Conference, SPACE 2016, Hyderabad, India, December 14-18, 2016, Proceedings* (Vol. 10076): Springer.

Ferguson, N., Schneier, B., & Kohno, T. (2011). *Cryptography engineering: design principles and practical applications*: John Wiley & Sons.

Nelson, B., Phillips, A., & Steuart, C. (2014). *Guide to computer forensics and investigations*: Cengage Learning.

Stallings, W. (2016). *Cryptography and network security: principles and practice*: Pearson.

Stallings, W., & Tahiliani, M. P. (2014). *Cryptography and network security: principles and practice* (Vol. 6): Pearson London.

**COURSE NAME: Mobile Applications and Technologies**

**COURSE CODE: BIT 3103**

**COURSE LEVEL: Year 3 Semester 1**

**COURSE CREDIT 4 CU**

**CONTACT HOURS 60 HOURS**

**Course Description**

This course examines principles, design, implementation, and performance of mobile computing and wireless networking. The aim is to lay a foundation in the student's understanding and skills in mobile computing and wireless networking standards, technologies, application and services. Ideally the course is an integration of Wireless Networking and Mobile Computing. Subjects of study under Mobile Networking will include; Wireless Network technologies (including GSM/GPRS/3G & Wireless LANs), Convergence networks, NextGen, Mobile IP, wireless ATM, Wireless Ad Hoc Networks and Bluetooth. While subjects of discussion under Mobile Computing will include; Mobile Computing Architectures (including SMS/SIM, WAP, I-mode and J2ME/J2EE), mobile OS (e.g., Android) and Mobile Application Development including location– based services.

**Course Objectives**

The objectives of the course are:

1. To introduce students to the theory and practice of Mobile networking and computing.
2. To facilitate the development of technical skills in mobile application development platforms particularly J2ME and J2EE.
3. To enhance students’ skills in mobile application development using Java and other technologies
4. To introduce students to the fundamental concepts in wireless technology and mobile computing including standards, technologies, devices and services
5. To use and experiment with new technology and cutting-edge projects
6. To understand how networking research is done
7. Investigate novel ideas in the area via semester-long skill development projects.

**Learning Outcomes**

On completion of this course, the students will:

1. Have gained an understanding of the theory and practical aspects of mobile computing and wireless networking.
2. Discuss the considerations in wireless mobile networking architectures
3. To design and implement simple wireless and mobile networks using Bluetooth, Wi-Fi among others
4. Work with the J2ME and J2EE platforms with minimal difficulty
5. Develop simple mobile applications deployable on Java enabled mobile devices
6. Discuss the current research directions in mobile and wireless networking
7. Demonstrate mastery of development and deployment of secure mobile services.

**Detailed Course Description**

1. Introduction to mobile computing and wireless networking principles **6hrs**

Fundamentals of Mobile Terminal Hardware, Radio, DSP, Memory and CPU components

1. The BlueTooth and ZigBee short range wireless technologies **6hrs**
2. The Wi-Fi Technologies **4hrs**

Fundamentals of Mobile Content, Mobile web content design

1. Introduction to GSM/GPRS/3G/3GPP **8hrs**

Base Station side radio interface standards, The WAP-protocol & Location Information

1. The Mobile IP technology **4hrs**

Principles of Multimedia Messaging (SMS, MMS) and web services

1. Wireless ATM technology **4hrs**

Introduction to Mobile Operating System Platforms (OSPs)

1. Introduction to Mobile application development  **10hrs**

Mobile Applications User Interface, The WAP-protocol & Location Information

1. Introduction to J2ME and J2EE platforms **6hrs**

The .mobi top level domain (TLD) initiative, Software set-up in Mobile Terminals

1. Understanding mobile computing architectures (I-mode, SMS and WAP) **6hrs**
2. Introduction to GSM gateways e.g. Kannel **6hrs**

**Total Contact Hours 60**

**Mode of Assessment**

Assessment will be in form of progressive assessment (40%) and final written examination (60%)

**Mode of delivery**

Teaching will be in form of lectures, tutorials, lab experiments and group assignments

**References**

Bensky, A. (2016). *Wireless positioning technologies and applications*: Artech House.

Loo, J., Mauri, J. L., & Ortiz, J. H. (2016). *Mobile ad hoc networks: current status and future trends*: CRC Press.

Page, T. (2012). Developing Technologies in Mobile Applications: Lambert Academic Publishing, ISBN.

Page, T. (2015). Smartphone Applications–A Comparative Study Between Older and Younger Users, i-manager’s Journal on Mobile Applications & Technologies.

Rahimi, M. R., Venkatasubramanian, N., Mehrotra, S., & Vasilakos, A. V. (2012). *MAPCloud: mobile applications on an elastic and scalable 2-tier cloud architecture.* Paper presented at the Proceedings of the 2012 IEEE/ACM fifth international conference on utility and cloud computing.

# COURSE TITLE: MANAGEMENT THEORY AND PRACTICE

**COURSE CODE: BBA 2103**

**LEVEL: Year 3 Semester 1**

**CREDIT UNITS: 4**

**CONTACT HOURS: 60**

**COURSE description**

This course intends to enable learners to develop short and long-range plans to effectively accomplish organizational goals. Through the use of terminology, exercises and case studies students will be able to give a critical appraisal of real life situations involving planning, organizing, coordinating, staffing and motivating plus others. The course will also introduce the learners to tools that aid in problem solving, valuing diversity and coping with change. These management principles are relevant to any type of organization or group, empowering the learners to lead others, negotiate embrace and better understanding the role of business in society.

**Course objective**

**The objectives of this course are to;**

1. To provide knowledge that can help learners be in position to explain the history of management development and major schools of management thought.
2. To empower learners with skills that can help them identify the basic functions of management (planning, decision making, organizing staffing, motivating, leading, controlling)
3. To equip learners with skills and knowledge they can use in applying to key issues which are relevant to successful management of the workforce across cultures
4. To provide competent skills that can enable learners demonstrate competence and apply knowledge of management principles to a concrete situation using case analysis.

**Course Learning Outcomes**

By the end of the course, students should be able to:

1. Explain the history of management development and major schools of management thought.
2. Identify the basic functions of management (planning, decision making, organizing staffing, motivating, leading, controlling)
3. Apply key issues relevant to successful management of the workforce across cultures
4. Demonstrate competence I applying knowledge of management principles to a concrete situation using case analysis.

**Detailed Course Description**

**Unit 1: Introduction to Management 6hrs**

1. Definition
2. Functions of management
3. Managerial skills
4. Levels of management
5. Productivity, efficiency and effectiveness
6. Is management a science or an art?

**Unit 2: Evolution of Management Thoughts 6hrs**

1. Early management Pioneers
2. Scientific Management
3. Administrative / Operational Management
4. Social Systems approach
5. Decision theory approach
6. Management science approach
7. Human behavior approach
8. Systems approach
9. Contingency approach

**Unit 3: Planning 4hrs**

1. Concept of planning
2. Nature of planning
3. Tools and techniques of planning
4. Steps in the planning process
5. Making planning effective

**Unit 4: Decision Making 6hrs**

1. Concepts
2. Process of decision making
3. Rational decision making
4. Decision making
5. Condition
6. Decision support system
7. Types of decision
8. Group decision making
9. Decision making in Japan and USA

**Unit 5: Objectives 4hrs**

1. Definition
2. Setting objectives
3. Hierarcy of objectives
4. Network of objectives
5. Multiplicity of objectives, management by Objectives (MBO), process of MBO, strengths and weaknesses of MBO

**Unit 6: Organizing 6hrs**

1. Definition
2. Organizing structure
3. Types of structure
4. Designing jobs
5. Job specialization
6. Alternatives to job specialization
7. Departmentalization
8. Chain of command
9. Narrow vs. Wide span
10. Factors influencing effective span of control
11. Distributing Authority
12. The delegation process
13. Decentralization vs. centralization
14. Factors determining centralization and decentralization

**Unit 7: Staffing 6hrs**

1. Concept
2. Human resource management process:
3. HR Planning
4. Selection
5. Training and development
6. Performance appraisal

**Unit 8: Leadership 6hrs**

1. Definition
2. Leadership styles based on authority
3. The trait approach
4. The situational approach
5. The managerial grid
6. Transactional vs. transformation leadership.

**Unit 9: Motivation 6hrs**

1. Concept
2. Motivation process
3. Distinguish between motivation and satisfaction
4. Maslow Hierarchy of needs theory
5. Other theories of motivation
6. Motivation strategies

**Unit 10: Coordinating 4hrs**

1. Concept
2. Need for coordination
3. Coordination techniques
4. Types of communication

**Unit 11: Controlling 6hrs**

1. Concept
2. Purpose
3. The controlling process
4. Types of control
5. Characteristics of effective control
6. Resistance to control
7. Overcoming resistance to control

**Total contact hours 60hrs**

**MODE OF DELIVERY**

* Lectures
* Reading assignments
* Practical assignments
* Field trips
* Documentaries

**INSTRUCTIONAL MATERIALS AND / OR EQUIPMENT**

* Whiteboard and Markers
* Flip Charts
* LCD Projectors
* CDs, DVDs and Tapes

**COURSE ASSESSMENT**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Hit, m black, s and porter, l (2011) management international version 3rd edition Pearson

Robbins s and coulter, m (2011) management: global edition 11th edition, Pearson

Kreitner, r. (2004) management 9th edition Boston MA Houghton Miffin.

**COURSE NAME: ENTREPRENEURSHIP and innovation**

**COURSE CODE:EDB 1101**

**LEVEL: YEAR 3 SEMESTER 1**

**CREDIT UNITS: 4**

**CONTACT HOURS: 60**

**COURSE discription**

This course is designed to develop an understanding on how entrepreneurship impacts growth and development and how entrepreneurship and innovations happen at various levels like private enterprises as well as local communities and nations.

This course introduces students to the theories of entrepreneurship and prepares them to initiate practical business projects which they can develop into viable ventures

**Course objectives**

**The objectives of this course are to;**

1. To enable learners appreciate the entrepreneurial process and get exposed to challenges/ problems and issues faced by entrepreneurs who start new ventures.
2. To equip learners with knowledge and skills that will enable them develop an entrepreneurial mindset.
3. To equip learners with skills that can help them to differentiate the different forms of business organizations, understand their merits and demerits and registration process, so that they can ably put the acquired knowledge into practice

**Course Learning Outcome**

By the end of the course, students should be able to:

1. To identify entrepreneurial process and get exposed to challenges problems and issues faced by entrepreneurs who start new ventures.
2. To apply knowledge and skills that will enable them develop an entrepreneurial mindset.
3. To describe the different forms of business organizations, their merits and demerits and registration process, so that they can ably put the acquired knowledge into practice
4. To develop a Practical Business Proposals

**Detailed Course Description**

**Unit 1: Introduction 6hrs**

1. Meaning of an entrepreneur/entrepreneurship
2. Entrepreneurial culture and structure
3. Stages in entrepreneurial process
4. Barriers to entrepreneurship development
5. Social economic origins of entrepreneurship
6. Environmental factors affecting entrepreneurship.

**Unit 2: Theories of Entrepreneurship 6hrs**

1. Evolution of the term entrepreneur
2. Types of entrepreneurs
3. Functions of an entrepreneur
4. Behavioral patterns of entrepreneur

**Unit 3: Entrepreneurial Motivation 6hrs**

1. Motivation factors
2. Entrepreneurial ambitions
3. Compelling and facilitating factors
4. The achievement motivation
5. The Kakinda experiment

**Unit 4: Establishment of Entrepreneurial Systems 6hrs**

1. Search for business idea
2. Sources of ideas
3. Idea processing
4. Selection of idea.

**Unit 5: Input Requirement 6hrs**

1. Personnel, finance
2. Information and intelligence
3. Rewards and motivation
4. Roles of industrial affairs

**Unit 6: Project Formation Theory 9hrs**

1. Need concept significance and elements
2. Feasibility analysis
3. Project report
4. Project selection
5. Appraisal format
6. Checklist for feasibility report.

**Unit 7: Steps for Starting A Small Industry 6hrs**

1. Decision to become an entrepreneur
2. Steps to be taken
3. Project reports guidelines
4. Procedures and formalities for registration

**Unit 8: Selection of the Organization 5hrs**

1. Sole proprietorship
2. Partnership
3. Joint stock company
4. Factors influencing choice of organization

**Unit 9: Approaches To Decision Analysis 4hrs**

1. Cost benefit analysis: system analysis
2. Operations research
3. Information for forecasting

**Unit 10: Entrepreneurship in Practice 6hrs**

1. Project (business) identification
2. Project formulation and appraisal
3. Project implementation, maintenance and evaluation

**Total Contact Hours 60hrs**

**MODE OF DELIVERY**

* Handouts
* Face-to-face lectures
* Reading assignments
* Practical assignments
* Field trips
* Documentaries

**INSTRUCTIONAL MATERIALS AND / OR EQUIPMENT**

* Whiteboard and Markers
* Flip Charts
* LCD Projectors
* CDs, DVDs and Tapes

**COURSE ASSESSMENT**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Balunywa, W. (1998) Business Administration, 2nd edition, Business Publishing Group

Hisnon, R.D and Peters M.P (2002) Entrepreneurship 5th edition, Tate McGraw-Hill Publishing Company LTD

Baron RA, Markman GD (2000) Beyond social capital: the role of social skills in entrepreneurs’

# success. Acad Manage Exec 14:1–15

Hannon P (2005). Teaching pigeons to dance: sense and meaning in entrepreneurship education.

International small business and enterprise 28th conference, illuminating entrepreneurship-the theory and practice of enterprise creation and development. Blackpool, 1–3 November, 2005

## **Electives (Choose any one)**

**COURSE NAME: Marketing in the IT Sector**

**COURSE CODE: BIT 3106**

**COURSE LEVEL: Year 3 Semester 1**

**COURSE CREDIT 3 CU**

**CONTACT HOURS 45 HOURS**

**Course Description**

A marketing orientation drives strategic decision-making in most companies today. The business press is constantly discussing the efforts of companies to get close to their customers or to meet their needs better than the competition. Indeed, it is impossible to understand the current and potential financial success of companies today without a thorough understanding of their target markets, customer relationships, product development skills, and competitive advantages and disadvantages. Marketing is all about creating and capturing value. By providing superior value to customers, companies enhance their own value. The marketing concept is so pervasive in companies that a marketing orientation extends well beyond the marketing department. Marketing has become everyone’s job. This course will enable students to apply marketing tools and concepts, whether you work in the marketing department or not.

**Course objectives**

The objectives of this course are to enable students to:

1. Understand the role of marketing in companies.
2. Be able to integrate the customer into every aspect of business planning. The corecompetence of marketing in any organization is its understanding of the customer.
3. Be able to appreciate how companies develop relationships with customers that providelifetime value to both the company and its customers.
4. Be able to apply analytical tools appropriate for marketing analysis.
5. Be able to develop specific recommendations and actions plans for companies facingdifficult marketing decisions.

**Learning outcomes**

On completion of this course unit, the students will be able to:

1. Learn the ways to extend brand names to new products
2. View customers as assets (like technology and brands) that are used to generate revenues and profits
3. Understand the structure and significance of relationship marketing
4. Recognize the power of the Internet, with particular emphasis to marketing and security issues.

**Detailed course Description**

1. Introduction to Marketing Strategy **3 hrs**
2. Analyzing Buyer Behavior **3 hrs**
3. Segmentation, Targeting, and Positioning **3 hrs**
4. Analyzing Competition **3 hrs**
5. Strategy over the Product Life Cycle **3 hrs**
6. Developing New Products **3 hrs**
7. Advertising & Communication **3 hrs**
8. Pricing **4 hrs**
9. Sales Promotion **4 hrs**
10. Channels of Distribution **4 hrs**
11. Branding **4 hrs**
12. Customer Relationship Management **4 hrs**
13. The Internet as the Holy Grail of Marketing **4 hrs**

**Total Contact Hours 45**

**Mode of Delivery**

Lectures, Practical, Peer discussions, Case study, Group work, Demonstrations

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Churchill, G. A., & Iacobucci, D. (2006). *Marketing research: methodological foundations*: Dryden Press New York.

Kottler, P., & Keller, K. L. (2003). Marketing management. *Analyse, Planung, Umsetzung und*.

Song, M., Nason, R. W., & Di Benedetto, C. A. (2008). Distinctive marketing and information technology capabilities and strategic types: A cross-national investigation. *Journal of International Marketing, 16*(1), 4-38.

Wilson, A., Zeithaml, V. A., Bitner, M. J., & Gremler, D. D. (2012). *Services marketing: Integrating customer focus across the firm*: McGraw Hill.

Zikmund, W. G., McLeod, R., & Gilbert, F. W. (2003). *Customer relationship management: Integrating marketing strategy and information technology*: Wiley.

**COURSE NAME: HUMAN COMPUTER INTERACTION**

**COURSE CODE: BIT 3107**

**LEVEL: Year 3 Semester 1**

**CREDIT UNITS: 3**

**CONTACT HOURS: 45**

**Course Description:**

The course helps students to appreciate the delicate and divergent nature of human and computer interactions. It delves into the dynamics of user interface designs including their evaluations as well as usability issues for both software and related devices.

**Course Objectives:**

By the end of this course, the student should be able to:

* + - 1. Appreciate established human-computer interaction approaches and techniques.
      2. Acquire knowledge on the design and presentation of user interfaces
      3. Explain selected software evaluation techniques and heuristics.

**Learning Outcomes**

On completion of this course, the student should be able to:

* + - 1. Apply established human-computer interaction approaches and techniques
      2. Produce conceptual and physical designs using prototyping methods
      3. Evaluate software interfaces using learnt heuristics.

**Detailed Course Description**

**Unit 1: Introduction 5 hrs**

Significance of HCI, conceptual frameworks for HCI, usability, Contexts for HCI (mobile devices, consumer devices, business applications, web, business applications, collaboration systems, games, etc.), multi-disciplinary nature of HCI.

**Unit 2: User Interfaces 6 hrs**

Principles, standards, user interface events, UI construction

**Unit 3: Design 12 hrs**

Design approaches, look-and-feel (layout, color, fonts, menus, labeling), Handling human/system failure, design mistakes, tasks and process modeling, visualization, representations, multimedia interaction (graphics, sound, audio etc.), device specific (e.g., cell phones, tablets).

**Unit 4: Evaluation 7 hrs**

Evaluation paradigms, frameworks, heuristics, usability testing (efficiency, learn ability, user satisfaction).

**Unit 5: Behavior and form: 8 hrs**

software posture, flow, navigation, Interaction (command line, menu, voice, gestural, WIMP, data retrieval and feedback), language (metaphors, idioms, tone) and software attributes.

**Unit 6: Human and social factors:** **7 hrs**

culture communication with users, human diversity, user documentation, applied psychology, social psychology, social networking.

**Total Contact Hours: 45 Hrs**

**Mode of Delivery**

Lectures, Practical, Peer discussions, Case study, Group work, Demonstrations

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Baecker, R. M. (2014). *Readings in Human-Computer Interaction: toward the year 2000*: Morgan Kaufmann.

Booth, P. (2014). *An Introduction to Human-Computer Interaction (Psychology Revivals)*: Psychology Press.

Helander, M. G. (2014). *Handbook of human-computer interaction*: Elsevier.

Peres, S. C. (2013). Human Computer Interaction.

## **YEAR 3 SEMESTER 2 COURSES**

**COURSE NAME: IT Project**

**COURSE CODE: BIT 3201**

**COURSE LEVEL: Year 3 Semester 2**

**COURSE CREDIT 5 CU**

**CONTACT HOURS 75 HOURS**

**Course Description**

This course provides the student with the ability to undertake a research project from the point of problem identification and requirements analysis to solution development under the guidance of a project supervisor(s). The student has to demonstrate creativity, a high level of professionalism and best practices in terms of documentation and software engineering standards.

**Course Objectives**

The Course aims to provide students with understanding and skills in:

1. Developing of a concept and plan for a feasible software project.
2. Defining requirements and design specifications.
3. Choosing appropriate software engineering processes, tools and methods
4. Professional software construction, quality assurance, testing, documentation and deployment
5. Working with a team (supervisor, peers).

**Learning Outcomes**

By the end of this course, the student should be able to:

1. Develop a project proposal, project report and manuals of the software that has been produced.
2. Produce software using best practices.
3. Work in a team to achieve a common goal.

**Detailed Course Description**

1. Problem identification: gap and opportunity identification, data collection, requirements discovery, feasibility studies, needs assessment, planning, team building 30 hrs
2. Software Development: requirements and system analysis, specifications and design, softwareconstruction, prototyping, quality assurance, testing, tools and techniques **60 hrs**
3. Documentation: proposal writing, report write up, manuals **40hrs**
4. Presentation: oral presentation, demonstrations, publicity, group dynamics **20 hrs**

**Total Practical hours 150**

**Total contact hours 75**

**Mode of Delivery**

Students will carry out a project under the supervision of a member of staff. Students should regularly meet their supervisors to discuss the project progress and iron out arising issues. At the end of the project, students should be able to produce a report detailing how the project was carried out and the outcomes.

The proposal development will be done during Third year first year.

Presentations and Project supervision will be the used methods of delivery.

**Mode of Assessment**

The report will be assessed by the project supervisor and a second assessor on the following criteria:

* Quality of Technical Content and Realization of Objectives
* Record of Accomplishments, Learning and Scholarship
* Structure, Presentation and Referencing

The criteria for assessing each milestone of the project will be determined by the department from time to time.

Software evaluation 50%

Project Report 50%

**COURSE NAME: Database Programming**

**COURSE CODE: BIT 3202**

**COURSE LEVEL: Year 3 Semester 2**

**COURSE CREDIT 4 CU**

**CONTACT HOURS 60 HOURS**

**Course Description**

This course provides you with advanced database concepts including advanced SQL and industrial database application domains. The course expands on topics in programming, adds advanced SQL commands and develops practical database programming skills. It begins with a review of the database environment, adding views, transactions, cursors, triggers, procedures, functions, indexes and optimization. The second part of the course focusses on applying the skills to real world applications including integrating databases with applications, big data, and graphing and geo-spatial databases.

**Course Objectives**

This course aims to enable students to:

1. Understand the basics of Relational Databases
2. Write SQL code based on ANSI/ISO standards to build and maintain database structures
3. Update database content with SQL and transaction handling
4. Retrieve data from single or multiple tables
5. Process data with row and aggregate functions
6. Manipulate data with correlated and noncorrelated subqueries
7. Apply views to break down problems and enhance security

**Learning outcomes**

Upon completing requirements for this course, the student will be able to:

1. Create a table using Structured Query Language (SQL)
2. Query a database table using Structured Query Language (SQL)
3. Update a database table using Structured Query Language (SQL).

**Detailed Course Description**

**Unit 1. Introduction to SQL. 6 Hrs**

* What is SQL?
* What is ANSI SQL?
* Define and understand the Basics of the RDBMS: relational databases, database normalization (briefly).
* SQL sessions.
* Types of SQL commands: DDL, DML, DQL, DCL…

**Unit 2. Using DDL Statements to Create and Manage Tables. 6 Hrs**

* What is Data?
* What are database objects?
* What is a schema?
* Create a simple table: naming a table or other object, The SQL statement CREATE TABLE. Review the table structure.
* List the data types that are available for columns: character, numeric, date, large objects (LOBs).
* Explain how constraints are created at the time of table creation: Creating CONSTRAINTS in the CREATE TABLE statement, The types of CONSTRAINTS. ALTER TABLE and DROP TABLE commands. Creating a table from an existing table.

**Unit 3. Manipulating Data Using DML. 6 Hrs**

* Managing database transactions.
* Overview of data manipulation.
* Insert rows into a table: default column list, enumerated column list. Update rows in a table.
* Delete rows from a table. Control transactions: COMMIT, ROLLBACK, SAVEPOINT.
* Inserting data from another table.

**Unit 4. Retrieving Data Using the SQL Select Statement.** **6 Hrs**

* Restricting and Sorting Data.
* Execute a basic SELECT statement. The SELECT statement—an example. List the capabilities of SQL SELECT statements.
* Limit the rows that are retrieved by a query: The WHERE clause, Boolean logic, additional WHERE clause features (IN, BETWEEN, IS NULL/IS NOT NULL).
* Sort the rows that are retrieved by a query: reference by name, reference by position.

**Unit 5. Using Single-Row Functions to Customize Output**. **6 Hrs**

* Describe various types of functions that are available in SQL: character functions, number functions, date functions, conversion functions, other functions.
* Use character, number, and date functions in SELECT statements.
* Nesting functions. Describe the use of conversion functions: conversion functions, automatic datatype conversions.

**Unit 6. Reporting Aggregated Data. 6 Hrs**

* Using the Group Functions.
* Identify the available group functions.
* Describe the use of group functions: COUNT, SUM, MIN/MAX, AVG.
* Group data by using the GROUP BY clause: multiple columns, ORDER BY revisited, nesting functions. Include or exclude grouped rows by using the HAVING clause.

**Unit 7. Displaying Data from Multiple Tables.**  **6 Hrs**

* Write SELECT statements to access data from more than one.
* Table using equijoins and non-equijoins.
* Using table aliases.
* Types of joins: inner joins, outer joins, NATURAL joins. Multitable joins.
* Join a table to itself by using a self-join.

**Unit 8. Retrieving Data Using Sub queries**. **6 Hrs**

* Using the Set Operators.
* Define subqueries. Describe the types of problems that subqueries can solve.
* List the types of subqueries: single-row subqueries, multiple-row subqueries, multiple-column subquery, scalar subqueries.
* Solve problems with correlated subqueries.
* Describe set operators. Use a set operator to combine multiple queries into a single query: UNION, UNION ALL, INTERSECT, EXCEPT (MINUS).
* Control the order of rows returned.

**Unit 9. Creating Other Schema Objects. 6 Hrs**

* Database Tuning.
* Controlling User Access.
* Utilizing views.
* Create and use simple and complex views.
* The purpose of WITH CHECK OPTION.
* Performance impact of using nested views.
* Create and maintain indexes: implicit index creation, single column, composite, unique, dropping.
* When should indexes be considered/avoided? Create private and public synonyms.
* Database tuning vs. SQL statement tuning.
* Formatting SQL statements: the format of SQL statements for readability, the order of tables in the FROM clause the placement of the most restrictive conditions in the WHERE clause, the placement of join conditions in the WHERE clause.
* Differentiate system privileges from object privileges.
* Controlling user access: GRANT/REVOKE command. Controlling privileges through roles.
* Distinguish between privileges and roles.

**Unit 10. Building a Multitable Relational Database. 6 Hrs**

* Database models: flat, hierarchical, network, relational.
* A relational database designs.
* Business process modeling.
* Types of database design: conceptual schema, logical schema, physical schema. Relationships: One-to-One, One-to-Many, Many-to-Many.
* Normalization: before the first normal form, the first normal form, the second normal form, the third normal form, higher normal forms.
* Integrity rules: general integrity rules, database-specific integrity rules. Breaking the rules: when to renormalize.

**Total Contact Hours 60**

**Mode of Delivery**

Lectures and Hands- on projects

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Connolly, T., & Begg, C. (2015). Database Systems: A Practical Approach to Design, Implementation, and Management: Pearson.

Coronel, C., & Morris, S. (2016). *Database systems: design, implementation, & management*: Cengage Learning.

Elmasri, R., & Navathe, S. B. (2015). *Fundamentals of database systems*: Pearson.

Kedar, S. (2009). *Database management system*: Technical Publications.

**COURSE NAME: Enterprise Network Management**

**COURSE CODE: BIT 3203**

**COURSE LEVEL: Year 3 Semester 2**

**COURSE CREDIT 4 CU**

**CONTACT HOURS 60 HOURS**

**Course Description**

Network management (NM) refers to all the functions, facilities, tools, communications interfaces, protocols, and human resources necessary to monitor and maintain communications networks and plan for their growth and evolution. NM includes investigation of day-to-day operations and administration of the networks. Within this framework, various aspects of managing voice and data networks are covered in this course. Management of specific network elements such as circuit and packet switches, multiplexers, and modems are addressed. The course also covers the concepts and fundamentals of NM standards such as OSI management standards and Simple Network Management Protocol (SNMP), which is a de facto standard.

**Course objectives/ Learning Outcomes**

Upon completing this course, the student should be able to:

1. Demonstrate an understanding of network management concept, standards, and protocols including Simple Network Management Protocol (SNMP) and Open Systems Interconnection (OSI) protocols.
2. Show how to apply network management standards to manage practical networks.
3. Discuss issues and challenges pertaining to management of emerging network technologies such as wireless networks and high-speed internets and propose possible approaches to manage them using what they learned in the course.
4. Demonstrate their in-depth understanding of various aspects of network management by working on group projects involving research on state-of-the-art network management technologies and presenting their findings to the class.

**Detailed Course Description**

1. Network Management Overview **2 hrs**

Importance of Network Management, Introduction to Network Management Pyramid, Goals of Network Management Systems (NMSs)

1. Network Monitoring **4 hrs**

Traffic analysis and bandwidth monitoring, Network configuration management, Server and application monitoring, VoIP and WAN performance monitoring

1. Managed Objects Definition (ASN.1 and BER), OSI (CMIP) Standards, RMON Standards **12hrs**
2. Internet Management Needs  **6 hrs**

IP addresses, IP addresses planning, Subnetting, IPv6 Networking fundamentals

1. SNMPv1 Standards and SNMPv2 standards **6 hrs**
2. SNMPv3 Standards **6 hrs**

SNMPv3 Structure. SNMPv3 Engine. SNMPv3 Applications. SNMPv3 Message Formats. MessageVersion. MessageID. MaxMessageSize. MessageFlags. MessageSecurity. Security Model Data: General. Security Model Data: Authentication Protocol. Security Model Data: Privacy Protocol. Context. PDU. SNMPv3 Security and View-Based Access Control.

1. Security Management **14hrs**

Basic threats, Mitigation techniques, Firewalls, Access control lists, IPSec and VPNs, Two-factor authentication, Vulnerability scanning, Virus and malware protection

1. Managing Practical Networks **6 hrs**

Tightly Coupled Intercolumn Dependencies. Default Values and Thin Software Layers. MIBs and Scalability. Decision-Making in the Network. FEC Definition

1. Emerging Technologies and Future Directions **4 hrs**

**Total contact hours** **60 hrs**

**Mode of Delivery**

Lectures and Hands- on projects

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**References**

Clemm, A. (2016). Network management fundamentals.

Hämäläinen, S., Sanneck, H., & Sartori, C. (2012). *LTE self-organising networks (SON): network management automation for operational efficiency*: John Wiley & Sons.

Kim, H., & Feamster, N. (2013). Improving network management with software defined networking. *IEEE Communications Magazine, 51*(2), 114-119.

Krebs, L. W., Fuller, W. R., & Zakrzewski, E. J. (2002). System and method for integrating enterprise management application with network management operations: Google Patents.

**COURSE NAME: System Integration**

**COURSE CODE: BIT 3204**

**COURSE LEVEL: Year 3 Semester 2**

**COURSE CREDIT 4 CU**

**CONTACT HOURS 60 HOURS**

**Course Description**

The course provides students with skills on integrating different systems, possibly that were developed separately on different platforms into a single coherent system in a single organization.

**Course Objectives**

The objective of the course is to offer students more analytical and development skills for analyzing, designing and developing middleware that link up different systems for a common goal.

**Learning Outcomes**

By the end of the course, students will be able to

1. Study different systems with a view of integrating them
2. Chose and justify the appropriate approach for integration of certain sets of systems
3. Design and implement middleware for integration of systems

**Detailed Course Description**

1. Introduction and Rationale for integration **12hrs**

Processes, approaches, drivers, tools and techniques required for successful SI, critical success factors, and best practices in Systems Integration

1. Approaches for integration **9 hrs**

Horizontal Integration, Vertical Integration, Star Integration, Continuous Integration

1. Enterprise application integration **8 hrs**

The Role of Architectures in Systems Integration, Integration in a System of Systems and a Federation 60 of Systems

1. Model Based Architecture, Design, and Integration,Lean Integration **9 hrs**
2. Systems of Systems Interoperability, Evaluation of architectures, Measures of Performance and Effectiveness **6 hrs**
3. Assessment of System Capabilities, Analysis of Alternatives **8 hrs**
4. Case studies and examples from the Information Technology (IT), energy, and financial services industry to illustrate the concepts discussed **8 hrs**

**Total contact hours 60 hrs**

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**Mode of delivery**

Teaching will be by lectures, class discussions and practical demonstration

**References**

Giachetti, R. E. (2016). *Design of enterprise systems: Theory, architecture, and methods*: CRC Press.

Myerson, J. M. (2001). *Enterprise systems integration*: CRC Press.

Themistocleous, M., Corbitt, G., & de Cunha, P. R. (2016). *Introduction to Enterprise System Integration: Issues and Answers Minitrack.* Paper presented at the 2016 49th Hawaii International Conference on System Sciences (HICSS).

Wyzalek, J. (1999). *Enterprise systems integration*: CRC Press, Inc.

**COURSE NAME: Electronic Commerce**

**COURE CODE: BIT 3205**

**COURSE LEVEL: Year 3 Semester 2**

**COURSE CREDIT 3 CU**

**CONTACT HOURS 45HOURS**

**Course Description**

This course covers the process and challenges of computerizing business transactions. It caters for the authentication, validation, negotiation and authenticity. It addresses the growing trend of online trading as well as the challenges associated with it.

**Course Objectives**

The objectives of this course are to:

1. Provide students with the skills required to design, implement and evaluate robust ecommerce applications.
2. The theory and application of electronic commerce solutions on the internet to improve business profit are presented.
3. The techniques, tools and infrastructure required for on-line transactions are presented.

**Learning Outcomes**

On completion of this course unit, the students will be able to:

1. Explain the issues related to various electronic commerce models and Internet/Web business opportunities and practices
2. Appreciate and explain the fundamental technologies for implementing electronic Commerce systems.
3. Explain the latest developments in electronic Commerce and their implications for organizations.
4. Implement database-driven electronic Commerce Web sites.
5. Appreciate the potential impacts of different electronic Commerce strategies.
6. Become aware of the security and transaction properties of electronic Commerce systems and their solutions.
7. Become aware of some of the regulatory and legal issues of electronic Commerce
8. Learn various techniques ensuring Web transactions security

**Detailed Course Description**

1. Introduction to Ecommerce **6 hrs**

Ecommerce: A Brief History, Understanding E-commerce, organizing Themes

1. E-commerce business models and concepts **7 hrs**

E-commerce Business Models, Major Business to Consumer (B2C) business models, Major Business to Business (B2B) business models, Business models in emerging E-commerce areas

1. The internet and World Wide Web: Ecommerce infrastructure **8 hrs**

How the Internet and the web change business: strategy, structure and process, the Internet Technology Background, World Wide Web features

1. Building an ecommerce web site, Security and payment **9 hrs**

A systematic Approach, The e-commerce security environment, Security threats in the e-commerce environment, Technology solution, Management policies, Business procedures, and public laws, Payment system, E-commerce payment system, Electronic billing presentment and payment

1. E-commerce marketing concepts, Online retailing and services **10hrs**

Consumer online: The Internet Audience and Consumer Behavior, Basic Marketing Concepts, Internet Marketing Technologies, B2C and B2B E-commerce marketing and business strategies, The Retail sector, Analyzing the viability of online firms, E-commerce in action: E-tailing Business Models, Common Themes in online retailing, The service sector: offline and online, Online financial services, Online Travel Services, Online career services

1. Social networks, auctions and portals **5 hrs**

Social networks and online communities, Online auctions, E-commerce portals

**Total Contact Hours 45**

**Mode of Assessment**

Continuous assessment Tests (30%)

Final examination (70%)

Total 100%

**Mode of delivery**

The teaching and learning approaches will combine classroom lectures, discussions and group activities and take home assignments

**References**

Chesher, M., & Kaura, R. (2012). *Electronic commerce and business communications*: Springer Science & Business Media.

Ford, W., & Baum, M. S. (2000). *Secure electronic commerce: building the infrastructure for digital signatures and encryption*: Prentice Hall PTR.

Shaw, M., Blanning, R., Strader, T., & Whinston, A. (2012). *Handbook on electronic commerce*: Springer Science & Business Media.

Shim, J. K., Qureshi, A. A., Siegel, J. G., & Siegel, R. M. (2013). *The international handbook of electronic commerce*: Routledge.

Subramanian, H., & Overby, E. (2016). Electronic Commerce, Spatial Arbitrage, and Market Efficiency. *Information Systems Research*.

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