

G.T.N. ARTS COLLEGE(Autonomous), DINDIGUL
SYLLABUS FOR B.Sc., (Information Technology) UNDER CBCS
(With effect from the academic year 2017 – 2018)

1. OBJECTIVE

To make the students to understand the basic knowledge in the field of Information Technology.

2. ELIGIBILITY:

Candidate should have passed the Higher Secondary Examination conducted by the Board of Higher Secondary Education, Govt of TamilNadu or any other Examinations accepted by the syndicate as equivalent there to with Mathematics as one of the subjects.

3. DURATION OF THE COURSE:

The students shall undergo the prescribed course of study for a period of not less than three academic year (Six semesters).

4. SUBJECTS OF STUDY AND SCHEME OF EXAMINATIONS :

The subjects offered in major Information Technology for six semesters and the scheme of examinations are given.

5. QUESTION PAPER PATTERN :

The Internal and External marks is 25 : 75

EXTERNAL:

The pattern of Question Paper will be as follows:

Time: 3 Hours

Max Marks: 75

SECTION – A [10 x 1 = 10 marks]

Question No: 1 to 10

1. Two questions from each Unit
2. Four choices in each question
3. No 'none of these' choice

SECTION – B [5 x 7 = 35 marks]

Question No: 11 to 15

1. Answer all questions choosing either (a) or (b)
2. Answers not exceeding two pages
3. One question from each Unit

SECTION – C [3 x 10 = 30 marks]

Question No: 16 to 20

1. Answers not exceeding four pages
2. Answer any three out of five questions
3. One question from each Unit

INTERNAL:

The pattern for internal valuation may be

1. Two tests – 15 marks each: average 15 marks
2. Group Discussion / Seminar / Quiz – 5 marks
3. Two Assignments – 5 marks each: average 5 marks
4. Third test may be allowed for absentees of anyone of the two tests
5. For Quiz, two quizzes should be conducted

Blue Print of the Question Paper (External) – Core Subjects

Maximum Marks: 75

Sections	Types of questions	No. of questions	No. of questions to be answered	Marks for each question	Total Marks
A	Multiple Choice : Two questions from each Unit	10	10	1	10
B	Not exceeding two pages (either or type) : One question from each Unit *	5	5	7	35
C	Not exceeding four pages (any three out of five) : one question from each Unit	5	3	10	30

6. There will be Two Allied subject to fulfill the course during three years.

Subject	Maximum Marks	Year of Study
Mathematics	300	I and II
Digital Principles and Computer Organization	100	II

The syllabus for the Allied subject can be got from the Allied Department of Mathematics.

7. PRACTICALS:

Record Note Book	: 10 marks
Internal	: 30 marks
External examination	: 60 marks
Total	: 100 marks

8. ELIGIBILITY FOR THE DEGREE:

- (i) A candidate will be eligible for the B.Sc., (Information Technology) degree by completing three years (six semesters) and passing all the prescribed examinations.
- (ii) A candidate shall be declared as passed the course, if he / she scored a minimum of 40 % marks in each paper of all the subjects.

Courses studied by B.Sc., Information Technology students:
 (Information Technology students study Mathematics as Allied I and Allied II respectively)

B.Sc., Information Technology

SEMESTER – I

Part	Study Component	Course Code	Hours	Credit	Internal Marks	External Marks	Total Marks
I	Tamil/Other Languages	17UTAL11	6	3	25	75	100
II	English	17UENL11	6	3	25	75	100
III	Core Course – I Fundamentals of IT and HTML	17UITC11	4	4	25	75	100
III	Core Practicals – I HTML and Office Automation	17UITC1P	6	4	40	60	100
III	Allied Course - I Discrete Mathematics	17UITA11	4	4	25	75	100
IV	Skill Based Practicals I Multimedia Tools	17UITS1P	2	2	40	60	100
IV	Non Major Elective I Basics of Retail Marketing	17UBAN11	2	2	25	75	100
		Total	30	22			

SEMESTER – II

Part	Study Component	Course Code	Hours	Credit	Internal Marks	External Marks	Total Marks
I	Tamil/Other Languages	17UTAL21	6	3	25	75	100
II	English	17UENL21	6	3	25	75	100
III	Core Course II Programming in C	17UITC21	4	4	25	75	100
III	Core Practicals II Programming in C	17UITC2P	6	4	40	60	100
III	Allied Course I Operation Research	17UITA21	4	4	25	75	100
IV	Skill Based Practicals II Linux Programming	17UITS21	2	2	40	60	100
IV	Non Major Elective II Entrepreneurial Development	17UBAN21	2	2	25	75	100
IV	Physical Education	17UPEV2P	-	1	40	60	100
	Total		30	23			

SEMESTER - III

Part	Study Component	Course Code	Hours	Credit	Int. Marks	Ext. Marks	Total Marks
I	Tamil/ Other Languages	17UTAL31	6	3	25	75	100
II	English	17UENL31	6	3	25	75	100
III	Core Course III Object Oriented Programming Using C++	17UITC31	4	4	25	75	100
III	Core Practicals III Object Oriented Programming Using C++ and Data Structures	17UITC3P	4	4	40	60	100
III	Core Course IV Data Structures	17UITC32	4	4	25	75	100
III	Allied Course III Digital Principles and Computer Organization	17UITA31	4	4	25	75	100
IV	Skill Based Practicals III Visual Studio Programming	17UITS3P	2	2	40	60	100
Total			30	24			

SEMESTER – IV

Part	Study Component	Course Code	Hours	Credit	Int. Marks	Ext. Marks	Total Marks
I	Tamil/ Other Language	17UTAL41	6	3	25	75	100
II	English	17UENL41	6	3	25	75	100
III	Core Course V Relational Database Management Concepts	17UITC41	4	4	25	75	100
III	Core Practicals IV Relational Database Management Concepts	17UITC4P	4	3	40	60	100
III	Core Course VI Operating System Concepts	17UITC42	4	4	25	75	100
III	Allied Course IV Numerical Methods	17UITA41	4	4	25	75	100
IV	Skill Based Practicals IV PHP & MYSQL	17UITS4P	2	2	40	60	100
V	Extension Activities			1	100		100
Total			30	24			

SEMESTER – V

Part	Study Component	Course Code	Hours	Credit	Internal Marks	External Marks	Total Marks
III	Core Course VII Data Communication and Computer Networks	17UITC51	5	4	25	75	100
III	Core Course VIII Software Engineering	17UITC52	5	4	25	75	100
III	Core Course IX Java Programming	17UITC53	5	4	25	75	100
III	Core Practicals V Java Programming Lab	17UITC5P	6	4	40	60	100
III	Elective Course I 1.Mobile Computing 2. Cryptography and Network Security	17UITE51 17UITE52	5	4	25	75	100
IV	Environmental Studies	17UEVS51	2	2	25	75	100
IV	Skill Based Course V Quantitative Aptitude	17UITS51	2	2	25	75	100
Total			30	24			

SEMESTER – VI

Part	Study Component	Course Code	Hours	Credit	Internal Marks	External Marks	Total Marks
III	Core Course X Android Programming	17UITC61	5	3	25	75	100
III	Core Practicals VI Web Programming Lab	17UITC6Q	6	3	40	60	100
III	Core Course XI Software Testing	17UITC62	5	4	25	75	100
III	Elective Course II 1.Introduction to Unified Modeling Language 2. Compiler Design	17UITE61 17UITE62	5	4	25	75	100
III	Project Work/Viva-Voce	17UITC6P	5	5	40	60	100
IV	Value Education	17UVED61	2	2	25	75	100
IV	Skill Based Practicals VI Networking	17UITS6P	2	2	40	60	100
Total			30	23			

Summary of credit and marks

Part	Study Component	Total Credit	Total Marks
I	Tamil/Other Languages	12	400
II	English	12	400
III	Core Course , Elective Course & Allied Course	94	2400
IV	Skill Based Courses, Non Major Elective, Environmental Studies & Value Education	20	1000
V	Physical Education & Extension Activities	2	200
Grand Total		140	4400

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பாடத் தலைப்பு: இக்கால இலக்கியமும் புனைகதையும் பருவம் : 1
பாடக் குறியீடு : 17UTAL11 பகுதி : I மணிகள் /வாரம் : 6 மதிப்பீடு அலகு : 3

நோக்கம்

இக்காலக் கவிதை, சிறுகதை, புதின வகைகளை அறிமுகம் செய்தல், இக்கால இலக்கியங்களின் வழிப் புலனாகும் கருத்துக்களைப் பெறச் செய்தல், பயன்பாட்டுத் தமிழ் இலக்கணத்தை அறியச் செய்தல்.

பயன்

கவிதை, சிறுகதை படைக்கும் ஆற்றல் பெறுதல், சமூக உணர்வூட்டும் படைப்புகளை அறிந்து கற்றல்.

கூறு : 1 மரபுக்கவிதைகள்

16 மணிநேரம்

பாரதியார் கண்ணன் என் சேவகன் - பாரதிதாசன் தொழிலாளர் விண்ணப்பம் - கவிமணி உரைக்க வேண்டும் - பட்டுக்கோட்டை கல்யாண சுந்தரம் மனிதனாக வாழ்ந்திட வேண்டும் - கண்ணதாசன் ஒரு பாணையின் கதை - முடியரசன் யார் கவிஞன்.

கூறு : 2 புதுக்கவிதைகள்

20 மணிநேரம்

ந.பிச்சமுர்த்தி ஆத்தாரன் முட்டை - நா.காமராசன் காகிதப்பூக்கள் - மு.மேத்தா என்னுடைய விடுமுறை நாள் - அப்துல் ரகுமான் ஆறாத அறிவு - வைரமுத்து ஐந்து பெரிது ஆறு சிறிது - மீரா நெஞ்சே! நில! நில! - பாலா வானம் வசப்படும் - நெல்லை ஜெயந்தா தொப்புள் கொடி - உமா மகேஸ்வரி சுயம் - ஹைக்கூ கவிதைகள்.

கூறு : 3 சிறுகதைகள்

14 மணிநேரம்

புதுமைப்பித்தன் சாப விமோசனம் - கு.ப.ராஜகோபாலன் உண்மைக்கதை - கு.அழகிரிசாமி ராஜா வந்திருக்கிறார் - கல்கி கடிதமும் கண்ணீரும் - ஜெயகாந்தன் யுக சந்தி - அண்ணா செவ்வாழை - கி.ராஜநாராயணன் கதவு.

கூறு : 4 இலக்கணம்

18 மணிநேரம்

முதலெழுத்துக்கள் - சார்பெழுத்துக்கள் - மொழி முதல் எழுத்துக்கள் - மொழி இறுதி எழுத்துக்கள் - வல்லெழுத்து மிகும் இடங்கள் - வல்லெழுத்து மிகா இடங்கள்.

கூறு : 5 இலக்கிய வரலாறும் பயன்பாட்டுத்தமிழும்

22 மணிநேரம்

20 ஆம் நூற்றாண்டில் மரபுக்கவிதையின் வளர்ச்சி - புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும் - சிறுகதையின் தோற்றமும் வளர்ச்சியும் - மரபுப்பிழை நீக்குதல் - பிறமொழிச் சொற்களை நீக்குதல் - ஓரெழுத்து ஒரு மொழிகள் - ஒலி வேறுபாடுகளும் பொருள் வேறுபாடுகளும்

பாடநூல்

1. சுஜாதா.சா(தொ.ஆ.).(2017), "இக்கால இலக்கியமும் புனைகதையும்", நியூ செஞ்சுரி பக் ஹவுஸ் பிரைவேட் லிமிடெட், சென்னை.

பார்வை நூல்கள்

1. சிவத்தம்பி.கா.,(1978), "தமிழில் சிறுகதையின் தோற்றமும் வளர்ச்சியும்", தமிழ்ப் புத்தகாலயம், சென்னை.
2. சுப்புரெட்டியார்.ந., (1982), "கண்ணன் பாட்டுத்திறன்", சர்வோதய இலக்கியப் பண்ணை, மதுரை
3. தண்டபாணி தேசிகர்.ச.,(2008), "நன்னூல் விருத்தியுரை", சாரதா புதிப்பகம், சென்னை.
4. வல்லிக்கண்ணன்.,(2011), "புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும்", சீதைப் புதிப்பகம், சென்னை.

Course Title: English for Enrichment – I Semester : 1
 Course Code : 17UENL11 Part : II Contact Hours /Week : 6 Credit : 3

Objectives

To teach language through Literature and to enable students to learn and imbibe good values of life gained from Literature

Unit I – Poetry 16 Hours

- | | |
|-----------------|-------------------------|
| 1. D.H.Lawrence | -Snake |
| 2. Wole Soyinka | -Telephone Conversation |
| 3. John Milton | -On His Blindness |
| 4. Shelley | - Ozymandias |

Unit II – Prose 20 Hours

- | | |
|-----------------------|----------------------------------|
| 1. Abraham Lincoln | - Letter to his son’s Headmaster |
| 2. Stephen Leacock | -With the Photographer |
| 3. W.R. Inge | -Spoon Feeding |
| 4. Martin Luther king | - I have a Dream |

Unit III - Short Stories 18 Hours

- | | |
|-----------------------|------------------------|
| 1. Rev. G.W.Cox | - Orpheus and Eurydice |
| 2. Flora Annie Steele | -Valiant Vicky |
| 3. Guy De Maupassant | -The Wedding Gift |
| 4. R. K. Narayan | - Engine Trouble |

Unit IV-Grammar 22 Hours

1. Noun, Pronoun, Verb, Adjective
2. Adverb, Preposition, Conjunction, Interjection
3. Transitive & Intransitive Verb
4. Articles

Unit V-Composition 14 Hours

1. Letter Writing
2. Precis Writing
3. Reading Comprehension
4. Advertisement

Text Book

1. Sudha. A.D and R. Kavitha (Eds.), (2018) “*English for Enrichment I*”, Chennai, New Century Book House.

Reference Books

1. Radhakrishna Pillai.G., (1990) “*Emerald English Grammar and Composition*”, Chennai, Emerald Publication.
2. Green Dawid., (2015).,”*Contempovary English grammar Structures and Composition*”, Macmillen India Private Limited., Chennai
3. Nesfield.J.C., (2004), “*English Grammar, Composition and usage*”, Macmillan, Chennai

Objectives

The focus of the subject is an introducing skills relating to IT basics, computer applications, programming, interactive Medias, Internet basics and learn about HTML basics.

Unit I 10 Hours

Introduction – Importance of Computers – Characteristics of Computers – Uses of computers – Overview of Computer System – Parts of a Computer – Importance of Hardware – **Classification of Computers – Central Processing Unit:** Introduction – CPU – Memory – Registers – Instruction Set – Machine Cycle – How the CPU and Memory work.

Unit II 14 Hours

Computer Memory : Introduction – Random Access Memory – Read Only Memory – **Secondary Storage Devices :** Introduction – Classification of Secondary Storage Devices – Magnetic Disks - Optical Disks – Magnetic Tape – Zip Disk – Jaz Disk – Super Disk – MO Disk – **Input Devices and Technologies :** Introduction – Keyboard – Mouse – Trackball – Game Controllers – Scanners – Barcode Reader – OCR – Digitizer – Voice Recognition – Web Cams – Digital Camera – Video Cameras.

Unit III 12 Hours

Computer Software: Introduction – What is Computer Software? – Hardware / Software Interaction – Software Categories – Classification of Software – Operating systems – Utilities – Compilers and Interpreters.

Telecommunications and Networks : Introduction – Types of Networks – Network Topology – Network Protocols – Network Architecture – Network Standardization – **Internet and WWW :** Introduction – Evolution of Internet – What can I do in the Internet? – Internet Addressing – WWW – Web Pages and HTML – Web Browsers – Searching the Web.

Unit IV 14 Hours

Introduction to HTML: Designing a Home Page – History of HTML – HTML Generations & Documents- Anchor Tag – Hyperlinks – **Head and Body Sections.** Header Section – Title – Prologue – Links – Colored Web Page – Comment Lines. **Designing the Body Section:** Heading Printing – Aligning the Headings – Paragraph – Tab settings – Images and Pictures – Embedding PNG format images. **Ordered and Unordered Lists:** Lists - Unordered List – Headings in a List – Ordered List – Nested List.

Unit V 10 Hours

Table Handling: Tables – Table creation in HTML – Width of the table and cells- Cells Spanning Multiple Rows/Columns –Column cells- Column Specification. **Frames:** Frameset Definition - Frame Definition – Nested Framesets. A Web Page Design Project : Frameset Definition – Animals – Birds – Fish. **Form Design:** Method and Enctype Attribute – Drop Down List.

Text Books

1. Alexis Leon., and Mathews Leon., Reprint (2008), “*Introduction to Information System*”, Mc-Graw Hill Education.
2. Xavier.C.,(2007), “*World Wide Web design with HTML*”, Tata Mc-Graw Hill.

Reference Books

1. Peter Norton., ”*Introduction to Computers*” , Mc-Graw Hill Companies, sixth edition.
2. Alexis Leon., and Mathews Leon., “*Fundamentals of Information Technology*”, Leon Vikas Publishing Private Limited, Delhi, Second Edition.
3. David Mercer., “*HTML Introduction to Web Page Design and Development*”, Tata Mc-Graw Hill Publishing Company Limited.

HTML

1. a . Write HTML code to develop a web page having the background in red and body-MyFirst Page-in anyother color.
b . Create a HTML document giving details of your name, age, telephone address, roll no using aligntag.
c . Write HTML code to design a page containing a text in a paragraph give suitable heading style.
d . Design a Page having background color given text color red and using all the attributes of fonttab.
- 2 a . Write HTML code to create a web page that contains an Image atits center.
b .create a web page using heft tag having the attribute alink, vlink.
c . Write a HTML code to create a web page of pink color and display moving message in red color.
- 3 a . Create a web page, showing an ordered list of name of yourfive friends.
b .Create a HTML document containing a nested list showing the content page of any Book.
c . Create a web page, showing an unordered list of name of fruits.
- 4 Write HTML code to create a web page that displays your class timetable.
5. Create a web page having two frames one containing links and another with contents of the links. When link is clicked appropriate contents should be displayed on Frame2.
6. Design an application form using all input types.
7. Design a website of your own by using all html tags.

MS WORD

1. Open a word document to prepare your -RESUME by performing the following operations. Formatting the test, alignment and font style. Page setup(margin, alignment, page height and width).
2. Create a student mark sheet using table, find out the total and average marks and display the result.
3. Design an invitation of your course inauguration function using different fonts, font sizes, bullets and word art/ clipart.
4. Prepare a business letter for more than one company using mail merge.

MS EXCEL

5. Create a suitable worksheet with necessary information and make out a suitable chart showing gridlines, legends and titles for axes.
6. Prepare salary bill in a worksheet showing Basic pay, DA, HRA,Gross salary, PF, /tax and Net Salary using suitable Excelfunctions.

MS POWERPOINT

7. Create a presentation to explain various aspects of your college using auto play.
- 8.Create a presentation to explain the sales performance of a company over a period of five years. Include slides covering the profile of the company, year wise sales and graph with gridlines, legends and titles for axes. Use clipart and animation features.
- 9.Create a presentation from various design templates.

Course Title: Discrete Mathematics Semester : 1
Course Code : 17UITA11 Part : III Contact Hours /Week : 4 Credit : 4

Objectives

To enable the Students to be Familiar with the set theory, concept of logic, recurrence relations, matrix algebra and graph theory.

Unit I 12 Hours

Set Theory: Introduction – Sets – Notation and Description of sets – Subsets – Venn-Euler Diagrams – operation on sets – Properties of set operation

Unit II 10 Hours

Logic: Introduction – TF Statements – Connectives – Well Formed (Statement) Formulae - Truth table of a formula – Tautology – Tautological implications and equivalence of formulae.

Unit III 14 Hours

Recurrence Relations and Generating Functions : Recurrence – An Introduction – Recurrence Relations – Solution of finite order homogeneous (Linear) relations – Solution of non – homogeneous relations (For all the theorems consider the statements without proofs)

Unit IV 12 Hours

Matrix Algebra: Introduction – Matrix operation – Inverse of a square matrix – Elementary operations and Rank of a matrix – Simultaneous Equations-Eigen values and Eigenvectors.

Unit V 12 Hours

Graphs and subgraphs: Introduction – Definition and examples – Degrees–subgraphs–matrices Trees: Introduction–Characterization of trees.Some Applications: Shortest path problem.

Text Books

1. Venkataraman.M.K., Sridharan.N., and Chandrasekaran.N., (2009), “*Discrete Mathematics*”, The National Publishing company.
2. Arumugam.S., and Ramachandran.S., (2013), “*Introduction to Graph Theory*”, Scitech Publications (India) private Limited.

Reference Books

1. Alen Doerr., and Kenneth Levesseur.,(2000), “*Applied Discrete Structures for computer Science*”, Galgotia Publications.
2. Veerarajan.T.,(2014), “*Discrete Mathematics and its Applications*”, Tata McGrawHill, Delhi.
3. Balaji.G.,(2015), “*Discrete Mathematics with Algorithms*”, G.Balaji Publishers.

Course Title: Multimedia Tools

Semester : 1

Course Code : 17UITS1P : Part IV Contact Hours /Week : 2

Credit : 2

Use **CorelDraw** for

- a. Creating a drawing, set rulers, grid, guidelines, and view document.
- b. Drawing, moving, shaping objects, lines and curves, dimension line, working with style and templates.
- c. Grouping/ungrouping, locking/unlocking objects, using layers, aligning and editing objects – pattern/texture fills, editing/applying end shapes, splitting/erasing portions, and positioning, moving, stretching, and rotating objects.
- d. Formatting text and paragraph, creating and adding blends, envelopes, extrusions, 3D special effects, different formats and layouts, previewing, sizing and printing a job.

Photoshop

1. Design an image by applying Mirror effect.
2. Design an image by extracting flower only from given photo graphic image.
3. Design an image by applying Text and Transform Tools.
4. Design an image by using patch or healing brush tool to remove damaged parts of an image.
5. Design an image by applying Color Balance to change the color of an image.
6. Design an image by using Clone Stamp Tool, Smudge Tool.
7. Design an image by applying Blur Filter.
8. Design an image by applying Lighting effect Filter.
9. Design an image by applying Blending options to make a text effect.
10. Design an image by applying rainbow effect.
11. Design an image by applying text masking effect.
12. Design a college id card using any tools.
13. Design a banner for your college with images and text.

Flash

1. Develop a Flash application using motion tween.
2. Develop a Flash application using shape tween.
3. Develop a Flash application for ball bouncing using motion guide path.
4. Develop a Flash application for masking effect.
5. Develop a Flash application using layer based animation.
6. Develop a Flash application to represent the growing moon.
7. Write action script to play and stop an animation.

Course Title: Basics of Retail Marketing Semester : 1
Course Code : 17UBAN11 Part IV Contact Hours /Week : 2 Credit : 2

Objectives

To Provide adequate basic understanding about management education among the students. To understand various sales promotion techniques. To acquire skill about e-marketing and telemarketing concepts.

Unit I 5 Hours

Introduction to retailing: introduction - meaning of retailing – economic significance of retailing – retailing management decision process- product retailing Vs service retailing – types of retailers – Retailing environment- Indian Vs global scenario

Unit II 6 Hours

Retail Marketing Environment :Introduction, understanding the Environment , Elements in a Marketing, Environment, Environmental Issues.

Unit III 7 Hours

The Retail Marketing Segmentation :Introduction, importance of market, segment in Retail, Targeted marketing Efforts, Criteria for Effective segmentation, Dimensions of segmentation, positioning Decision, Limitations of Market segmentation.

Unit IV 4 Hours

Store location and layout: Introduction, Types of retail stores Location Factors Affecting retailing Location Decisions, Country/ Region Analysis, Trade Area Analysis, site Evaluation, Site Selection, Location Based Retail Strategies

Unit V 8 Hours

Retailing Marketing Strategies: Introduction , Target market and Retail Format, Strategy at different levels of business, Building a Sustainable competitive Advantage, the strategic Retail Planning process, Retail Models, Retail —ESTI model

Text Book

1. Dr.Inbalakshmi.,(2016), “*Retail Marketing*”,Kalyani Publication, Chennai.

Reference Books

1. Dr.Seenivasan.,(2017),“*Retail Marketing*”,Kalyani Publications, Chennai.
2. Dr.Natarajan.L.,(2013),“*Retail Marketing*”,Margham Publications, Chennai.
3. Sivakumar.A.,(2007),“*Retail Marketing*”,Excel Books India Publications, New Delhi.

பாடத் தலைப்பு: இடைக்கால இலக்கியமும் புதினமும்
Course Code : 17UTAL21 பகுத : I

பருவம் : 2
மணிகள் /வாரம்: 6 மதிப்பீட்டு அலகு : 3

நோக்கம்

தமிழில் உள்ள பக்தி இலக்கிய வகைமைகளையும் சிற்றிலக்கிய வகைமைகளையும் அறிமுகம் செய்தல், புதின இலக்கியங்களை மாணவர்கள் அறிந்துகொள்ளச் செய்தல், சொல் இலக்கணத்தை உணர்த்துதல்

பயன்

.பக்தி சிற்றிலக்கியங்களால் காணலாகும் கவித்துவத்தையும்,சமூகமேம்பாட்டுக் கருத்துக்களையும் அறிந்துகொள்ளச் செய்தல், .புதினஇலக்கியத்தைஅறிந்துகொள்ளுதல், படைப்பாற்றல் திறனைவளர்த்தல்

கூறு 1 பக்தி இலக்கியங்கள்

21 மணிநேரம்

திருஞானசம்பந்தர் தேவாரம் நமச்சிவாயத் திருப்பதிகம் (1 – 5 பாடல்கள்) – திருநாவுக்கரசர் தேவாரம் திருவிடைமருதூர் பதிகம் (தேர்ந்தெடுக்கப்பட்ட 5 பாடல்கள்) – சுந்தரர் தேவாரம் திருச்சோற்றுத்துறை பதிகம் (1 - 5 பாடல்கள்) – மாணிக்கவாசகர் திருச்சாழல் (1- 5 பாடல்கள்) – திருமங்கையாழ்வார் பெரியதிருமொழி (1 – 5 பாடல்கள்) – ஆண்டாள் நாச்சியார் திருமொழி திருமணக்கனவு (1 - 5 பாடல்கள்) – திருமுலர் திருமந்திரம் (தேர்ந்தெடுக்கப்பட்ட 5 பாடல்கள் தாயுமானவர் பராபரக்கண்ணி (1 - 5 பாடல்கள்) – சிவவாக்கியார் சிவவாக்கியார் பாடல்கள் (தேர்ந்தெடுக்கப்பட்ட 5 பாடல்கள்).

கூறு 2 சிற்றிலக்கியங்கள்

15 மணிநேரம்

தமிழ்விடுதலாது பா.எண். 35 - 44 வரை உள்ள 10 பாடல்கள் – கலிங்கத்துப்பரணி காடுபாடியது (1 - 5 பாடல்கள்) – திருக்குற்றாலக் குறவஞ்சி நாட்டு வளம் கூறுதல் (1- 5 பாடல்கள்) – முக்கடற் பள்ளு பள்ளியர் ஏசல் (பா.எண். 162 -166 5 பாடல்கள்) – மதுரைமீனாட்சியம்மை பிள்ளைத் தமிழ் வருகைப் பருவம் (பா.எண். 61,63 2 பாடல்கள்).

கூறு 3 புதினம்

18 மணிநேரம்

சூரியகாந்தன் - பூர்வீகபூமி

கூறு 4 இலக்கணம்

17 மணிநேரம்

நான்குவகைச் சொற்கள் - வேற்றுமைகள் - தொகைநிலைத் தொடர் -தொகா நிலைத் தொடர் - வினாவிடை வகைகள்

கூறு 5 இலக்கியவரலாறும் பயன்பாட்டுத் தமிழும்

19 மணிநேரம்

பக்தி இலக்கிய வரலாறு – சிற்றிலக்கியவரலாறு – புதினத்தின் தோற்றமும் வளர்ச்சியும் – கடிதம் வரைதல்.

பாட நூல்

1. சாந்தினி.கி.(தொ.ஆ.),(2017),”இடைக்கால இலக்கியமும் புதினமும்”, நியூ செஞ்சரி புக் ஹவுஸ் பிரைவேட் லிமிடெட்,சென்னை.

பார்வைநூல்கள்

1. கதிர்முருகு.,(2007),”முக்கூடற்பள்ளு”,சாரதாபதிப்பகம், சென்னை.
2. சூரியகாந்தன்.,(2013),”பூர்வீகபூமி”, நியூசெஞ்சரிபுக் ஹவுஸ், சென்னை.
3. க.தண்டபாணிதேசிகர்.,(2008),”நன்னூல் விருத்தியுரை”,சாரதாபதிப்பகம், சென்னை.
4. நடராசன்.பி.ரா.,(2010),”திருஞானசம்பந்தர் சுவாமிகள் தேவாரம்”, உமாபதிப்பகம், சென்னை.
5. வரதராசன்.மு.,(2007), ”தமிழ் இலக்கிய வரலாறு”, சாகித்ய அகாதெமி, புதுதில்லி.

Objectives

To teach language through Literature and to enable students to learn and imbibe good values of life gained from Literature

Unit- I Poetry 17 Hours

- | | |
|--------------------|--|
| 1. Rupert Brooke | - The Great Lover |
| 2. Robert Frost | - Stopping by Woods on a Snowy Evening |
| 3. Emily Dickinson | - Because I Couldn't Stop For Death |
| 4. Alice Walker | - Gift |

Unit-II –Prose 19 Hours

- | | |
|---------------------|---------------------------------|
| 1. Mark Twain | - Monday Morning |
| 2. Jawaharlal Nehru | - Our Universities |
| 3. G.B.Shaw | - How I Become A Public Speaker |
| 4. Khushwant Singh | - The Portrait of the Lady |

Unit-III One Act Play 20 Hours

- | | |
|------------------------|---------------------|
| 1. Rabindranath Tagore | - Chitra |
| 2. Saki | - The Death Trap |
| 3. Wole Soyinka | - The Strong Breed |
| 4. Ronald Gow | - Sheriff's Kitchen |

Unit IV Grammar 16 Hours

1. Tense
2. Voice
3. Degrees of Comparison
4. Question Tag

Unit-V Composition 18 Hours

1. Expansion of Proverb
2. Dialogue Writing
3. Note Making
4. Writing Soft and Hard News

Text Book

1. Remya. I.P., and N.Lakshmi Priya (Eds.), (2018), "English for Enrichment II", Chennai, New Century Book House.

Reference Books

1. Murphy., and Raymond., (1985), "English Grammar in Use", Cambridge, Cambridge University Press.
2. Green Dawid., (2015), "Contemporary, English grammar, Structures and Composition", Macmillan India Private Limited, Chennai.
3. Nesfield.J.C., (2004), "English Grammar, Composition and usage", macmillan, Chennai.

Course Title: Programming in C

Semester : 2

Course Code : 17UITC21

Part III

Contact Hours /Week : 4

Credit : 4

Objectives

To gain knowledge about Identifiers, Data types , Constants & Variables, Operators, control structures, concepts of functions, files, pointers, structure.

Unit I

12 Hours

History of C – Importance of C – Basic Structure of C Programs – Programming Style – Character Set – C Tokens – Keywords and Identifiers – Constants, Variables and Data Types – Declaration of Variables – Defining Symbolic Constants – Declaring a variable as a constant – Overflow and underflow of data – Operators and Expressions.

Unit II

12 Hours

Reading and Writing a character – Formatted Input, Output – Decision Making & Branching: if statement – if else statement – nesting of if else statements – else if ladder – switch statement – the ?: operator – goto statement – the while statement – do statement – the for statement – jumps in loops.

Unit III

8 Hours

One-Dimensional Arrays – Declaration, Initialization – Two-Dimensional Arrays – Multi-Dimensional Arrays – Dynamic Arrays – Initialization. Strings: Declaration, Initialization of string variables – reading and writing strings – string handling functions.

Unit IV

16 Hours

Need – multi function programs – elements of user defined functions – definition – return values and their types – function calls, declaration, category – all types of arguments and return values – nesting of functions – recursion – passing arrays, strings to functions – scope visibility and life time of variables. Structures and Unions.

Unit V

12 Hours

Accessing the address of variables – declaring. Initialization of pointer variables - accessing a variable through its pointer – chain of pointers – pointer increments and scale factors – pointers and character strings – pointers as function arguments – pointers and structures. Files: Defining, opening, and closing a file – IO operations on files – Error handling during IO operations commend one argument.

Text Book

1. Balagurusamy.E.,(2012),6th Edition, “*Programming in ANSI C*”, Tata McGraw Hill Publishing Company.

Reference Books

1. Schaum’s Outline Series., Gottfried.,(2006), “*Programming with C*”, Tata McGraw Hill.
2. Ashok Kamthane.N.,(2006), “*Programming with ANSI and Turbo C*”, Pearson Education.
3. Scheldt.H.,(2000),4th Edition, “*C The Complete Reference*”, TMH Edition.
4. Kanetkar.Y., (1999), “*Let us C*”, BPB Publications, New Delhi.

1. Write a C Program (WCP) to find the sum of digits.
2. WCP to check whether a given number is Armstrong or not.
3. WCP to check whether a given number is Prime or not.
4. WCP to generate the Fibonacci series.
5. WCP to print reverse of the given number and string.
6. WCP to arrange the given number in ascending order.
7. WCP to add and multiply two matrices.
8. WCP to find the grade of a student using else if ladder.
9. WCP to implement the various string handling function.
10. WCP to calculate quadratic equation using switch-case.
11. WCP to generate student mark list using array of structures.
12. WCP to create and process inventory control using file.
13. WCP to create and process electricity bill using file.

Course Title: Operation Research Semester : 2
Course Code : 17UITA21 Part III Contact Hours /Week : 4 Credit : 4

Objectives

To enable the Students to be Familiar with the operation research and its scope, about LPP and its solution methods, simplex method, assignment problem, transportation problem and its solution.

Unit I 14 Hours

Origin and Development of OR – Nature and features of OR – Scientific Method in OR- Modeling in Operation Research – Application of OR.

Unit II 10 Hours

Formulation of LPP - Mathematical Formulation – Solution of LPP – Graphical Method.

Unit III 8 Hours

Simplex Method: Computational procedure –Big M Method – Two phaseMethod.

Unit IV 16 Hours

Transportation problem:Mathematical formulation of Transportation problem – Method for finding IBFS for the Transportation problem – Degeneracy of TP.

Unit V 12 Hours

Assignment Problem: Mathematical formulation of assignment problem
Solution to Assignment problem.

Text Books

1. Kanthiswarup., Gupta.P.K., and Man Mohan., (2011), “*Operations Research*”, Sulthan Chand & Sons.
2. Arumugam.S., and Thangapandi Issac.,(2015), “*Topics in Operating Research Linear programming*”, New Gamma Publishing House India Private Limited.

Reference Books

1. Sharma.S.D., (2003), “*Operations Research*”, Kedar Nath Ram Nath and Co.
2. Gupta.R.K., (1992), “*Operations Research*”, Krishna Prakashan Media Private Limited.
3. Sharma J.K., (2007), “*Operations Research Theory and Applications*”, MAC Milan, 4th Edition.

1. Write a Linux script (WLS) to find the number of users who have logged in.
2. WLS to see the current date, user name and current directory.
3. WLS to print the numbers 5,4,3,2,1 using While loop.
4. WLS to set the attributes of afile.
5. WLS to convert lowercase to uppercase using tr utility.
6. WLS to copy and rename a file.
7. WLS to display file permission.
8. WLS to perform arithmetic operations using case.
9. WLS to display the following pattern:
 1
 22
 333
 4444
 55555
10. WLS to find is a directory or file.
11. WLS to display the student mark details.
12. WLS to prepare electricity bill.
13. WLS to sort the numbers in ascending order.
14. WLS (i) To create and append a file (ii) To compare two files.

Course Title: Entrepreneurial Development Semester : 2
Course Code : 17UBAN21 Part IV Contact Hours /Week : 2 Credit : 2

Objectives

To enable the students understand the entrepreneurial knowledge and skill. To know the various traits or qualities must possess by entrepreneur to progress in business. To discuss entrepreneurial development and its relationship with economic theories.

Unit I **4 Hours**

Entrepreneurship – meaning, types of entrepreneur, role of entrepreneurs qualities of an entrepreneur.

Unit II **8 Hours**

Product and characteristics – types of products – consumer Vs. industrial durable Vs. non durable intermediate – engineering Vs. non engineering- demand based , technology based products.

Unit III **6 Hours**

Criterion for product selection – availability of market, technology, finance, raw material, skilled labour, water, power, transport, special licenses. Infrastructural facilities.

Unit IV **5 Hours**

Analysis for project – market analysis – technical analysis – financial analysis

Unit V **7 Hours**

Report writing: format of report. Institutional arrangements for entrepreneurs: TIIIC, SIDCO, DIC credit facilities from banks.

Text Book

1. Saravanel.P., (1989), “*Entrepreneurial Development*”, Mittal Publications, New Delhi.

Reference Books

1. Khanka.S.S., (2006), “*Entrepreneurial Development*”, S.Chand Publishing, New Delhi.
2. Sami Uddin., (1989), “*Entrepreneurship development in india*”, Mittal Publications, New Delhi.
3. Dr.Jayashree Suresh., (2002), “*Entrepreneurial Development*”, Margham Publications, Chennai.

பாடத் தலைப்பு: காப்பிய இலக்கியமும் நாடகமும்

பருவம் : 3

பாடக் குறியீடு : 17UTAL31

பகுதி: I மணிகள் /வாரம் : 6

மதிப்பீட்டு அலகு : 3

நோக்கம்

தமிழில் உள்ள காப்பியங்களின் சிறப்புக்களை எடுத்துரைத்தல் - நாடகக்கலையை மாணவர்களுக்கு உணர்த்துதல் - யாப்பு, அணி இலக்கணங்களை மாணவர்கள் அறியும்படிச் செய்தல்.

பயன்

மாணவர்களிடம் தம் தாய் மொழியான தமிழ் மொழியின் இலக்கியம் இலக்கணத் திறனை மேம்பாடு அடையச் செய்தல் - நாடகப் படைப்பாக்கப் பயிற்சியை உருவாக்குதல் -காப்பியங்களின் உள்ளார்ந்த கருத்துக்களை அறிந்து கொள்ளுதல்.

கூறு-1: காப்பியங்கள்

30 மணிநேரம்

சிலப்பதிகாரம் வழக்குரை காதை (முழுவதும்) - மணிமேகலை ஆதிரை பிச்சையிட்ட காதை (முழுவதும்) - கம்பராமாயணம் வாலி வதைப்படலம் (பா.எண்-322-365 வரை உள்ள 44 பாடல்கள்) - பெரியபுராணம் அப்பூதியடிகள் நாயனார் புராணம் (முழுவதும்)

கூறு- 2: தற்கால காப்பியங்கள்

15 மணிநேரம்

இயேசுகாவியம் மலைப்பொழிவு (10 பாடல்கள்) - நபிகள்நாயகக் காவியம் மதீனாக்காண்டம் (11 பாடல்கள்)

கூறு-3: நாடகம்

15 மணிநேரம்

இராமசுவாமி மு., ரௌத்திரம் பழகு - சேதுபதி வைகையில் வெள்ளம் வரும் - சேதுபதி மௌனத்தின் குரலொன்று - சேதுபதி அன்பின் மெய் - சிவக்கண்ணன் குருசேத்திரங்கள் ஓய்வதில்லை.

கூறு- 4: இலக்கணம்

15 மணிநேரம்

பா வகைகள் வெண்பா, ஆசிரியப்பா, வஞ்சிப்பா, கலிப்பா - அணிகள் உவமை உருவகம்- தற்குறிப்பேற்றம்- வேற்றுமை- பிறிதுமொழிதல்- வஞ்சப்புக்கழ்ச்சி- சிலேடை

கூறு-5: இலக்கிய வரலாறும், பயன்பாட்டுத்தமிழும்

15 மணிநேரம்

ஐம்பெருங்காப்பியங்கள் - ஐஞ்சிறுகாப்பியங்கள் - நாடகத்தின் தோற்றமும் வளர்ச்சியும் - நாடகத்தின் வகைகள் - நாடகம் படைத்தல்.

பாட நூல்

1. மாசிலாதேவி.ச(தொ.ஆ)..(2018), “காப்பிய இலக்கியமும் நாடகமும்”, நியூ செஞ்சுரி புக் ஹவுஸ் பிரைவேட் லிமிடெட்,சென்னை.

பார்வை நூல்கள்

1. இராமசுவாமி.மு..(2015), “ரௌத்திரம் பழகு”, நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை.
2. சிவக்கண்ணன்.அ..(2007), “ஆறு நாடகங்கள்”, பாவை பப்ளிகேஷன்ஸ், சென்னை.
3. சுப்பிரமணிய தேசிகர்(உ.ஆ)..(1996), “தண்டியலங்காரம் கழக வெளியீடு”, திருநெல்வேலி.
4. சேதுபதி..(2007), “வைகையில் வெள்ளம் வரும்”, பாவை பப்ளிகேஷன்ஸ், சென்னை.
5. வரதராசன்.மு..(2007), “தமிழ் இலக்கிய வரலாறு”, சாகித்ய அகாதெமி, புதுடெல்லி.
6. வேங்கடசாமி நாட்டார்.ந.மு(உ.ஆ)..(2006), “யாப்பெருங்கலக்காரிகை”, சாரதா பதிப்பகம்,சென்னை.

Course Title: English for Enrichment III			Semester : 3
Course Code : 17UENL31	Part-II	Contact Hours /Week : 6	Credit : 3

Objectives

To teach language through Literature and to enable students to learn and imbibe good values of life gained from Literature

Unit I – Romantic Plays		16 Hours
1. As you like it	: Cartons of love Act IV – Scene I	
2. Merchant of Venice	: Trial for a pound of flesh Act IV – Scene I	
Unit II - Roman Plays		20 Hours
3. Antony and Cleopatra	: Terrifying moments of Titanic Love Act V Scene II	
4. Julius Caesar	: Funeral oration Act III Scene II & III	
Unit III – Tragedy plays		17 Hours
5. Macbeth	: He kills sleep Act I, Scene VII & Act II Scene II	
6. Othello	: When the moor kills so good a wife:ActV Scene II	
Unit IV – Grammar		19 Hours
1. Sentence Improvement		
2. Sentence Arrangement		
3. Sentence Completion		
Unit V – Composition		18 Hours
1. E-Mail & Fax		
2. Filling a bank challan		
3. Attending Interview		

Text Book

1. Moorthy.N., and V.Amardeep.,(2018) (Eds.), “*English for Enrichment III*”. Chennai,New Century Book House.

Reference Books

1. Nesfield.J.C.,(2010),“*Manual of English Grammar and Composition*”, Delhi, Surjeet Publications.
2. ShakespeareWilliam.,(2005),“*GreatestCollections of William Shakespeare*”,Delhi,BlackRose Publications.
3. Green Dawid., (2015), “*Contempovary English grammar Structures and Composition*”, Macmillen India Private Limited., Chennai.
4. Nesfield.J.C.,(2004), English “*Grammar,Composition and usage*”, Macmillan,Chennai.

Course Title: Object Oriented Programming in C++

Semester : 3

Course Code : 17UITC31

Part III

Contact Hours /Week : 4

Credit : 4

Objectives

To gain Knowledge about fundamentals of C++, Object Oriented Programming Concepts.

Unit I

8 Hours

Principles of Object-Oriented Programming – Beginning with C++ - Application of C++-Structure of a C++ Program - Tokens, Expressions and Control Structures – Functions in C++ - The Main Function - Function Prototyping - Inline Functions - Function Overloading.

Unit II

16 Hours

Classes and Objects –Constructors Parameterized Constructor-Multiple Constructors in a class Constructors with default arguments-Dynamic Initialization of Objects Copy Constructor-Destructors.

Unit III

12 Hours

Defining Operator Overloading-Overloading Unary Operators-Overloading Binary Operators-Overloading Binary Operators Using Friend Functions-Rules for Overloading Operators – Inheritance Extending Classes.

Unit IV

14 Hours

Pointer, Virtual Functions and Polymorphism – Managing console I/O Operation - C++ Stream Classes - Unformatted I/O Operations - Managing output with Manipulators.

Unit V

10 Hours

Classes of File Stream Operations-Opening and Closing Files-Detecting end of file-More about Open() Function-File Modes, File Pointers and their Manipulation-Sequential input and output Operations-Command Line Arguments– Templates - Class Templates and Function Templates.

Text Book

1. Balagurusamy .E., (2013), “*Object Oriented Programming with C++*”, McGraw Hill Education India Private Limited, New Delhi, Sixth Edition.

Reference Books

1. Alok Kumar Jagadev., Amiya Kumar Rath., and Satchidananda Dehuri., (2007), “*Object-Oriented Programming Using C++*”, Prentice-Hall of India Private Limited, New Delhi.
2. Ashok Kamthare.N., (2006), “*Object Oriented Programming with ANSI & Turbo C++*”, Pearson Education.
3. Herbert Schildt.,(1998), “*C++ The Complete Reference*”, TMH.
4. Paul Deitel., and Harvey Deitel., (2014), “*C++ How to Program*”, PHI, Ninth Edition.
5. PoornachandraSarang.,(2009), “*Object-Oriented Programming with C++*”, PHI Learning Private Limited, New Delhi, 2nd Edition.

1. Printing Prime Numbers between two given numbers.
2. Demonstrating the use of Pre-defined Manipulators.
3. Demonstrating the use of Friend Function.
4. Creating Students Mark list using array and objects.
5. Demonstrating Constructors Overloading.
6. Overloading the unary-Operator.
7. Demonstrating Single Inheritance.
8. Illustrating Function templates.
9. Illustrating Class Templates.
10. Overloading the binary + Operator.
11. Demonstrating Multiple Inheritances.
12. Demonstrating Multilevel Inheritances.
13. Demonstrating Hierarchical Inheritances
14. Demonstrating Virtual Function.
15. Processing Mark list Using Binary Files.
16. Program to perform Binary search.
17. Implementation of stack operation using arrays.
18. Implementation of Queue operation using arrays.
19. Implementation of Insertion sort.

Course Title: Data Structures

Semester : 3

Course Code : 17UITC32

Part III

Contact Hours /Week : 4

Credit : 4

Objectives

To gain Knowledge about linear, non linear data structures, sorting techniques and various design technique algorithms

Unit I

12 Hours

Introduction – Need for data structures - Definition - Data Structures – Algorithm Analysis – Introduction – Problem Solving –Asymptotic Analysis – Linked Lists – Types of Linked Lists – Single, Double, Circular – Primitive Operations – Creation, Insertion, Deletion and Traversal.

Unit II

11 Hours

STACK – Introduction – Abstract data type stack- Implementation of stack - Applications of stack. **QUEUE** – Definition – Implementation of queue – Circular queues – Dequeues.

Unit III

10 Hours

TREES – Definition – Binary trees – Representation of Binary Trees – Binary Tree Traversals – Expression Trees. **BINARY SEARCH TREES** – Introduction – Creation – Insertion – Searching – Deletion.

Unit IV

14 Hours

SORTING – Definition – types – bubble sort – Insertion – shell – Selection – Merge – Quick sort – Heap sort – Radix sort – Complexity of sorting algorithms – comparison.

Unit V

13 Hours

GRAPHS – Definition – directed graphs – undirected graphs – weighted graphs – basic definitions – representation of graphs – adjacency matrix – adjacency lists – Breadth first search – depth first search – Shortest Path – Spanning trees – minimum spanning trees.

Text Book

1. Chitra, Rajan., (2005), “*Data Structures*” Vijay Nicole Publishers ,First Edition,.

Reference Books

1. Adam Drozdek Thomson., (2015), “*Data Structures and Algorithm in C++*” , Vikas.
2. Ellis Horowitz., and Sartaj Sahani., “*Data Structures In C++*”, Dinesh Mehta Galgotia Publications.
3. Glenn Rowe.M., (2003), “*Introduction to Data Structures and Algorithms with C++*” P.H.I, New Delhi – 110 001.
4. Weiss.M.A., (2013), “*Data Structures and Algorithm Analysis in C++*”, Pearson Education Asia.
5. Sartaj Sahni.,(2000), “*Data Structures and Applications in c++*”, MC-Graw Hill.

Course Title: Digital Principles and Computer Organization Semester : 3
Course Code : 17UITA31 Part III Contact Hours /Week : 4 Credit : 4

Objectives

Study about the concepts of digital performance in computer system, multiplexer, flip-flops, k-map simplifications and to acquire knowledge about data processing and registers.

Unit I 10 Hours

Number System and Codes: Binary numbers System – binary to decimal – decimal to binary – hexa decimal – ASCII code – Excess-3 Code – Gray Code

Digital Logic: The Basic gates –NOT, OR, AND-Universal Logic Gates-NOR, NAND

Unit II 14 Hours

Combinational Logic Circuits: Boolean Law and theorems – sum of product method – Truth tables to Karnaugh Map – Pairs Quads, Octets – Don't care Conditions – product of sum method – product of sum simplifications. **Arithmetic Circuits:** Binary Addition – Binary Subtraction – 2's & 1's complement representation-2's Complement Arithmetic – Arithmetic building blocks.

Unit III 9 Hours

Data Processing Circuits: Multiplexers – Demultiplexers – 1-of-16- Decoders BCD-to-Decimal Decoders – Seven segment decoders – Encoders – Exclusive-OR gates – parity generators and checkers

Unit IV 15 Hours

Basic Computer Organization and Design: Instruction codes-Stored program organization-Computer registers and common bus system-computer instructions-Timing and control. **Instruction Cycle:** Fetch and Decode-Register reference instructions. **Micro Programmed Control:** Control Memory Organization- Address Sequencing, Micro Instruction format and symbolic microinstructions- symbolic micro-program-binary micro-program.

Unit V 12 Hours

Central Processing Unit: General registers Organization- Stack Organization-Instruction Formats-Addressing modes-Data Transfer and manipulation-program control-CISC and RISC-Parallel Processing-Pipeline-General Consideration. **Input-Output Organization:** Peripheral devices. **I/O Interface-Memory Organization:** Memory hierarchy-Main Memory-Auxiliary Memory.

Text Books

1. Donald Leach.P., Albert Paul Malvino., and Goutam Saha.,(2015), “*Digital Principles and Applications*”, McGraw-Hill Education, 8th edition.
2. Morris Mano.M., (2007), “*Computer System Architecture*”, Pearson Education, 3rd edition.

Reference Books

1. Anantha Natarajan.R., (2015), “*Digital design*”, PHI Learning.
2. Carl Hamacher Zvonko Vranesic Safwat Zaky., (2015), “*Computer Organization*”, McGraw Hill Education, 5th Edition.
3. Meena.K.,(2013), “*Principle of Digital Electronics*”, PHI Learning.
4. Smruti Ranjan Sarangi., “*Computer Organization and Architecture*”, McGraw Hill Education.
5. Thomas .C., and Bartee.,(2007), “*Digital Computer Fundamentals*”, TMH.

Course Title: Visual Studio Programming

Course Code : 17UITS3P

Part IV

Contact Hours /Week : 2

Semester : 3

Credit : 2

1. Program using Structure and enum.
2. Program using classes, methods, properties and read only property.
3. Program using constructors, overload constructors and class events.
4. Program using exception handling.
5. Function to perform various string operations.
6. Program using inheritance, constructors in inheritance.
7. Program using win Form controls.
8. Order Bill preparation using Datagrid control.
9. EB Bill preparation using database.
10. Salary Bill preparation using database.

Self Study Paper - I

Course Title : Armed Forces and National Integration	Semester : 3
Course Code : 17UNCV31 Part : V	Contact Hours /Week : 4 Credit : 2

Unit 1 Organization of NCC & Armed forces

Aims and objectives of NCC, Organization, Training and NCC song – Basic organization of Armed Forces – organization of Army – organization of infantry battalion - Badges and ranks – Task and role of fighting arms – task and role of supporting arms & services – modes of entry into army – honour and awards – concept of integrated defence staff

Unit II Military History

Biographies of renowned Generals (Cariappa/Sam Manekshaw) – Indian Army war heroes – PVCs – Study of Battles of Indo Pak war 1965, 1971 & Kargil

Unit III National integration & Awareness

Religions, culture, traditions and customs of India – National integration – importance and necessity – Freedom struggle and Nationalistic movement in India – National interests, objectives, threats and opportunities – Problems/challenges of National integration – Unity in Diversity – National integration council – images/slogans for national integration – Contribution of youth in Nation building .

Unit IV Health, Hygiene and First Aid

Structure and functioning of human body – hygiene & sanitation (personal & food hygiene) – physical & mental health – infectious & contagious diseases & its prevention – basics of home nursing & first aid in common medical emergencies – wounds & fractures – introduction to yoga & exercises

Unit V Environmental Conservation

Natural resources – water conservation & rain water harvesting – waste management – pollution control: Water, air, noise, soil – energy conservation – wild life conservation projects in India

Reference Books

1. “National Cadet corps standing Instructions”,(2017), Volume I & II, DG NCC, Minister of Defence, Shri Sai Enterprises, New Delhi.
2. Major Ramasamy.R., “NCC Guide”, Priya Publication, Karur – 2.
3. Lt. Col. Prasad. P.S., (2008), “A Key to Success” , Kerala.
4. ANO Handbook, www.nccindia.nic.in.
5. Cadets Handbook Common Subjects SD/SW.

Note: Necessary demonstration and practical training will be dealt during parade hours.

நோக்கம்

பழமைக்குப் பழமையாய் புதுமைக்குப் புதுமையாய் இன்றளவும் செம்மாந்து நிற்கும் சங்க இலக்கியத்தை அறிமுகம் செய்தல், தமிழ் மொழியின் சிறப்புக்களை உணர்த்தும் இலக்கியக் கட்டுரைகளை எடுத்துரைத்தல், பழந்தமிழ் மக்களின் வாழ்க்கைப் பெட்டகமான பொருள் இலக்கணத்தை உணர்த்துதல்.

பயன்

செவ்வியல் மொழியான தமிழ்மொழியின் தொன்மையினை அறிந்து கொள்ளுதல், நீதி இலக்கியங்களின் வழி மாணவர்களுக்கு அறக்கருத்துக்களை உணர்த்துதல், சங்ககால மக்களின் வாழ்க்கை ஏற்றங்களும், உயரிய பண்பாடுகளும், அன்பின் அடிப்படையில் அமைந்த மனித உறவுநெறிமுறைகளின் வழியும் மாணவர்களுக்குப் பழந்தமிழ் பண்பாட்டின் மேன்மையை உணரச்செய்தல், படைப்பாற்றல் திறனை வளர்த்தல்.

கூறு 1

குறிஞ்சிப்பாட்டு முழுவதும் – நற்றிணை முல்லைத்திணைப் பாடல்கள் (பா.எண். 21, 89, 99, 139, 364) – குறுந்தொகை மருதத்திணைப் பாடல்கள் (பா.எண். 8, 31, 46, 61, 113) ஐங்குறுநூறு தாய்க்கு உரைத்த பத்து (நெய்தல்) அம்முனவார் – கலித்தொகை பாலைக்கலி (பா.எண். 9, 11) - அகநானூறு (பா.எண். 8,122) - புறநானூறு (பா.எண். 8, 86, 182, 192, 312)

30 மணிநேரம்

கூறு 2

திருக்குறள் ஒப்புறவு அறிதல் (அறத்துப்பால்) – நாலடியார் ஈகை (அறத்துப்பால்) – பழமொழி நானூறு – கல்வி.

15 மணிநேரம்

கூறு 3 உரைநடை (கட்டுரைத் தொகுப்பு)

பத்மபிரியா .மா சங்க இலக்கியங்களில் சுற்றுச்சூழல் பாதுகாப்பு – முத்தையா .ஆ தமிழ்நாட்டுக் காளை விளையாட்டும் மேல்நாட்டுக் காளைப் போரும் – முத்துக்கிருட்டின நாட்டார் சி. அறநெறி வழங்கிய அறிஞர் வித்துவான் தமிழ் – திலகவதி. இலக்கியத்தில் பெண் – ஸ்ரீதரன் என். அறிவு அற்றங் காக்கும் கருவி – முத்துலட்சுமி வீ. இலக்கியமும் கூத்தும்.

15 மணிநேரம்

கூறு 4 இலக்கணம்

அகப்பொருள் அகத்திணைகள் - புறப்பொருள் புறத்திணைகள்

15 மணிநேரம்

கூறு 5 இலக்கிய வரலாறும், பயன்பாட்டுத் தமிழும்

இலக்கிய வரலாறு எட்டுத்தொகை -பத்துப்பாட்டு - பதினென்கீழ்க்கணக்கு நூல்கள் - பயன்பாட்டுத் தமிழ் - பொதுக்கட்டுரை எழுதுவதற்குப் பயிற்சி அளித்தல்.

15 மணிநேரம்

பாட நூல்

1. கவிதா.வீ(தொ.ஆ).,(2018), “பழந்தமிழ் இலக்கியமும் உரைநடையும்”, நியூ செஞ்சுரி புக் ஹவுஸ் பிரைவேட் லிமிடெட், சென்னை.

பார்வை நூல்கள்

1. அடைக்கலசாமி.எம்மார்.,(2011), “தமிழ் இலக்கிய வரலாறு”, ராசி பதிப்பகம், சென்னை-73.
2. கோவிந்தராச முதலியார்.கா.ர(உ.ஆ).,(1966), “நம்பியகப்பொருள்”, திருநெல்வேலித் தென்னிந்திய சைவசித்தாந்த நூற்பதிப்புக்கழகம் லிமிடெட், திருநெல்வேலி-6.
3. கௌமாரீஸ்வரி.எஸ் (தொ.ஆ)., (2017), “பதினெண் கீழ்க்கணக்கு நூல்கள் மூலமும் முறையும்”, சாரதா பதிப்பகம், ஜி-4, சாந்தி அடுக்ககம், 3 ஸ்ரீ கிருஷ்ணாபுரம் தெரு, ராயப்பேட்டை, சென்னை-14.
4. சாமிநாதய்யர்.உ.வே (தொ.ஆ)., (1986), “பத்துப்பாட்டு மூலமும் நச்சினார்க்கினியருரையும், தமிழ் பல்கலைக்கழக மறுதோன்றி அச்சகம்”, தஞ்சாவூர்.

Course Title: English for Enrichment IV

Semester : 4

Course Code : 17UENL41

Part II Contact Hours /Week : 6

Credit : 3

Objectives

To teach language through Literature and to enable students to learn and imbibe good values of life gained from Literature

Unit I **18 Hours**

R.K. Narayan: Swami and Friends

Unit II **20 Hours**

George Bernard Shaw: Arms and the Man

Unit III Word Power **16 Hours**

1. Vocabulary
2. Choice of Words
3. Analogy Questions

Unit IV Art of Public speaking **22 Hours**

1. Welcome Address
2. Presidential Address
3. Vote of Thanks

Unit V Writing Skills **14 Hours**

1. Resume Writing
2. Group Discussion
3. Translation.

Text Books

1. Narayan, R. K., (2008), "*Swami and Friends*", Mysore, Indian Thought Publications.
2. George Bernard Shaw., (2004), "*Arms and the Man*", Delhi, UBS Publishers.
3. For Units III, IV, V: Study material would be supplied by the Department.

Reference Books

1. Jayashree Ghosh., (2010), "*A Text book of Pharmaceutical Chemistry*" S. Chand & Company Limited, New Delhi.
2. Dr. Lakshmi. S., (2004), "*A Textbook of Pharmaceutical Chemistry*" S. Chand & Company Limited, New Delhi.
3. George Bernard Shaw., (2004), "*Arms and the Man*", UBS Publishers, Delhi.

Course Title: Relational Database Management Concepts Semester : 4
Course Code : 17UITC41 Part III Contact Hours /Week : 4 Credit : 4

Objectives

To study about the concepts and functions of relational databases and know about Codd's Rules and relational model, integrity constraints, data manipulation, the relational algebra, normalization, PL/SQL and ACID properties.

Unit I 10 Hours

Overview Of Database Systems-Introduction To Database Design: Database Design and ER Diagrams – Entities, Attributes, and Entity Sets – Relationships and Relationship Sets – Additional Features of ER Model – Conceptual Design With the ER Model.

Unit II 14 Hours

The Relational Model-Relational Algebra And Calculus: Preliminaries – Relational Algebra: Selection and Projection – Set Operations –Renaming – Joins - Division Relational Calculus: Tuple Relational Calculus – Domain Relational Calculus.

Unit III 12 Hours

SQL-Queries-Constraints-Triggers-Normalization: Introduction - Normalization – Definition of Functional Dependence (FD) – Normal Forms: 1NF, 2NF, 3NF and BCNF Properties of Decompositions – Normalization – Schema Refinement in Database Design – Other Kinds of Dependencies.

Unit IV 8 Hours

PL/SQL – Fundamentals of PL/SQL – procedure, function – Cursor management – Triggers – Error Handling- Packages.

Unit V 16 Hours

OVERVIEW OF TRANSACTION MANAGEMENT: The ACID Properties – SECURITY AND AUTHORIZATION: Introduction to Database Security - Access Control – Discretionary Access Control – Mandatory Access Control – Security for Internet Applications – Additional Issues Related to Security.

Text Books

- 1.Raghu Ramakrishnan., and Johannes Gehrke.,(2003),”*Database Management Systems*”, Tata McGraw Hill Private Limited, New Delhi,Third Edition.
2. Deshpande.P.S., (2003),” *SQL PL/SQL for ORACLE 8&8i* ”,Dream tech press, New Delhi,Second Edition.

Reference Books

- 1.Alexis Leon., and Mathews Leon.,(2002),”*Database Management Systems*”,Leon Vikas Publishing, Chennai.
- 2.Frad R.McFadden., Jeffrey Hoffer.,A and Mary. B. Prescott., (2001),”*Modern Database Management*”, Pearson Education, Asia, 5th Edition.
- 3.Abraham Silberschatz., Henry Korth.F., and Sudarshan.S.,(2006),”*Database System Concepts*”,Tata McGraw Hill Private Limited.

- I. Create a table Student-master with the following fields client_no, name, address, city, state, pincode, remarks and bal_due with suitable data types.
 - a. Create another table supplier_table from client_master, Select all the fields and rename client_no with supplier_no and name with supplier_name.
 - b. Insert data into client_master.
 - c. Insert data into supplier_master from client_master.
 - d. Delete the selected row in the client_master.

- II. Create a table sales_order with s_order_no and product_no as primary key, Set other fields to store client number, delivery address, delivery date, order status.
 - a. Add a new column for storing salesman number using ALTER Command.
 - b. Set the s_order_no as foreign key as column constraints and table constraints.
 - d. Enforce the integrity rules using CHECK.

- III. Create a table student_master with the following fields name, regno, dept and year with suitable data types. Use Select command to do the following.
 - a) Select the student's name column, eliminate the duplicate entry, Sort the table, and Select all the Students of a particular department.

- IV. Create a table sales_order_details with the s_order_no as primary key and with the following fields: product_no, description, qty_ordered, qty_disp, product_rate, profit_percent, sell_price, supplier_name

EMPLOYEE			
DEFAULT			
Field	Type	Null	Key
Eno	Char(3)	No	Primary
Ename	Varchar(50)	No	
Job type	Varchar(50)	No	
Manager	Char(3)	Yes	Foreign
Hiredate	Date	No	
Dno	Integer	Yes	Foreign
Commission	Decimal(10,2)	Yes	
Salary	Decimal(7,2)	No	

- a) Select each row and compute $sell_price*.50$ and $sell_price*1.50$ for each row selected.
- b) Select $product_no$, $profit_percent$, $Sell_price$ where $profit_per$ is not between 10 and 20 both inclusive.
- c) Select $product_no$, $description$, $profit_percent$, $sell_price$ where $profit_percent$ is not between 20 and 30.
- d) Select the $suppliername$ and $product_no$ where $suppliername$ has 'r' or 'h' as second character.

V. Create and use the following database scheme to answer the given queries.

DEPARTMENT			
DEFAULT			
Field	Type	Null	Key
Dno	Integer	No	Primary
Dname	Varchar(50)	Yes	

Perform the following queries:

- a. Query to display Employee Name, Job, Hire Date, Employee number; for each employee with the Employee Number appearing first.
- b. Query to display unique Jobs from the Employee Table.
- c. Query to display the Employee Name concatenated by a Job separated by a comma.
- d. Query to display all the data from the Employee Table. Separate each Column by a comma and name the said column as THE_OUTPUT.
- e. Query to display the Employee Name and Salary of all the employees earning more than \$2850.
- f. Query to display the Employee Name and Department Number for the Employee No=7900.
- g. Query to display Employee Name and Salary for all employees whose salary is not in the range of \$1500 and \$2850.
- h. Query to display Employee Name and Department No. of all the employees in Dept 10 and Dept 30 in the alphabetical order by name.
- i. Query to display Name and Hire Date of every Employee who was hired in 1981.
- j. Query to display Name and Job of all employees who don't have a current Manager.
- k. Query to display the Name, Salary and Commission for all the employees who earn commission.
- l. Sort the data in descending order of Salary and commission.
- m. Query to display Name of all the employees where the third letter of their name is '_A'.
- n. Query to display Name of all employees either have two '_R's or have two '_A's in their name and are either in Dept No=30 or their Manager's Employee No=7788.
- o. Query to display Name, Hire Date and Salary and Commission for all employees whose Commission Amount is 14 greater than their Salary increased by 5%.
- p. Query to display Name, Hire Date and Salary Review Date which is the 1st Monday after six months of employment.
- q. Query to display Name and Calculate the number of months between today and the date each employee was hired.
- r. Query to display Name with the 1st letter capitalized and all other letter lower case and length of their name of all the employees whose name starts with '_J', '_A', '_M'.

- s. Query to display Name, Department Name and Department No for all the employees.
 - t. Query to display Unique Listing of all Jobs that are in Department #30.
 - u. Query to display Name, Job, Department No. and Department Name for all the employees working at the Mumbai Location.
 - v. Query to display Name, Dept No. and Salary of any employee whose department No. and salary matches both the department no. and the salary of any employee who earns a commission.
 - w. Query to display the Highest, Lowest, Sum and Average Salaries of all the employees
 - x. Query to display the Employee No. and Name for all employees who earn more than the average salary.
 - y. Query to display Employee Number and Name for all employees who work in a department with any employee whose name contains a_T'.
- VI. Create a table master_Book to contain the information of magazine code, magazine name and publisher, Weekly/biweekly/monthly, price. Write PL/SQL block to perform insert, update and delete operations on the above table.
- VII. Create a table to contain phone number, user name, address, of the phone user. Write a function to search for a address using phone numbers
- VIII. Create a table stock to contain the item-code, item-name, current stock, date of last purchase. Write a stored procedure to seek for an item using item-code and delete it, if the date of last purchase is before 1 year from the current date. if not, update the current stock.
- IX. Create a table to store the salary details of the employees in a company. Declare the Cursor to contain employee number, employee name, and net salary. Use Cursor to update the employee salaries.
- X. Create a table to contain the information about the voters in a particular constituency. Write a proper trigger to update or delete a row in the table.
- XI. Create a table to store the details of the alumnus in an institution. Write a PL/SQL block to change address of particular alumni. Write proper exceptions and appropriate error message

Course Title: Operating System Concepts

Semester : 4

Course Code : 17UITC42

Part III

Contact Hours /Week : 4

Credit : 4

Objectives

To understand Operating System structures, Asynchronous Concurrent Execution. To become familiar with memory management and other related concepts, file management, Disk Scheduling.

Unit I

9 Hours

Introduction to Operating Systems: Introduction- Operating system components and goals-architecture- Process Concepts: Introduction, Process States, Process Management, Interrupts, Inter process Communication.

Unit II

15 Hours

Asynchronous Concurrent Execution: Introduction, Mutual Exclusion, Implementing Mutual Exclusion Primitives, Software solutions to the Mutual Exclusion Problem, Hardware solution to the Mutual Exclusion Problem, Semaphores. Concurrent Programming: Introduction Monitors.

Unit III

12 Hours

Deadlock and Indefinite Postponement: Introduction- Examples of Deadlock- Related Problem Indefinite Postponement, Resource concepts, Four Necessary conditions for deadlock-deadlock solution, Prevention, Avoidance with Dijkstra's Banker's algorithm, Detection, Recovery. **Processor Scheduling:** Introduction, Scheduling levels, Preemptive Vs Non-Preemptive Scheduling Priorities, objective, criteria, Scheduling algorithms.

Unit IV

14 Hours

Real Memory Organization and Management: Introduction, Memory organization, Memory Management, Hierarchy, Memory Management Strategies, Contiguous Vs Non-Contiguous Memory allocation, Fixed Partition Multiprogramming, Variable Partition multiprogramming. **Virtual Memory Management:** Introduction, page Replacement, Page Replacement strategies, Page Fault Frequency(PFF) Page Replacement, Page Release, Page Size.

Unit V

10 Hours

Disk Performance Optimization: Introduction, Why Disk Scheduling is necessary, Disk Scheduling strategies, Rotational optimization. File and Database Systems: Introduction, Data Hierarchy, Files, File Systems, File Organization, File Allocation, Free Space Management, File Access control.

Text Book

1. Deitel., and Deitel Choffnes., (2008), "*Operating Systems*", Pearson education, Third edition.

Reference Books

1. Pramod Chandra P. Bhatt., (2008), "*An introduction to operating systems concepts and practice*", PHI, Second Edition.
2. Abraham Silberschatz Peter Galvin Greg., gagne.,(2007), Windows XP Update, "*Operating System Concepts*", Wiley India edition, 6th edition.
3. Pal Choudhury., (2001), "*Operating Systems Principles and Design*", PHI Learning.
4. Dhananjay M.Dhamdhere.,(2012), "*Operating Systems*", A Concept Based Approach Tata McGraw Hill, 3rd Edition.

Course Title: Numerical Methods Semester : 4
Course Code : 17UITA41 Part III Contact Hours /Week : 4 Credit : 4

Objectives

To solve the problems in algebraic and transcendental equations, simultaneous equations by using Gauss Jordan/Seidal, Interpolation, numerical differentiation and integration, Numerical Solution of Ordinary Differential Equations

Unit I 8 Hours

Algebraic and Transcendental Equations: Iteration method- Bisection method- Regula Falsi method -Newton- Raphson method.

Unit II 16 Hours

Simultaneous Equations: Introduction- Simultaneous equations -Gauss Elimination method - Gauss - Jordan Elimination method- Calculation of Inverse of a matrix- Iterative methods- Gauss- Jacobi Iteration method - Gauss seidal Iteration method.

Unit III 10 Hours

Interpolation : Introduction - Newton's interpolation Formulae- Central difference Interpolation formulae- Gauss Forward, Gauss Backward, Lagrange's interpolation formulae- Inverse Interpolation.

Unit IV 14 Hours

Numerical Differentiation and Integration: Introduction- Derivates using Newton's forward difference formula- Derivatives using Newton's backward difference formula- Numerical Integration: Trapezoidal Rule- Simpson's one third rule- Simpson's $3/8^{\text{th}}$ rule.

Unit V 12 Hours

Numerical Solution of Ordinary Differential Equations: Introduction- Taylor series method- Euler's method- Runge- kutta method of second, third, fourth order.

Text Book

1. Arumugam.S., Thangapandi.A., and Issac Somasundaram.A., (2014), "*Numerical Methods*", SCITECH Publications India Private Limited, Second Edition.

Reference Books

1. Gunavathi.K., Kandasamy.P., and Thilagavathy.K., "*Numerical Methods*", S.Chand Publishing, 3rd Edition.
2. Singaravelu .A., (2008), "*Numerical Methods*", Published by Meenakshi Agency.
3. Mathews J.H., (2001), "*Numerical Method for Maths*", Science and Engineering PHI, New Delhi.
4. Veerarajan T, (2007), "*Numerical Methods Sigma series*", Tata McGraw-Hill Education.

1. Write a PHP program to design a client page to get arithmetic operation then in server.
2. Write a PHP program to find sum of digits.
3. Write a PHP program to find Biggest number using Function.
4. Write a PHP program to design a client page to get five marks of a student and display total, Average, Grade in server page.
5. Write a PHP program to sort elements in an array in ascending order.
6. Write a PHP program to Get two text value in client page, done string manipulation and display in server page(Any five function)
7. Write a PHP program to find the product of elements in an array.
8. Write a PHP program to upload a file to the server.
9. Write a PHP program to check if the string is palindrome or not.
10. Write a PHP program to display registration form with form validation.
11. Write a PHP program to create simple login form using database.
12. Write a PHP program to create a new database and table.
13. Write a PHP program to insert and fetch records to the table in database.
14. Retrieve and process Employee pay-bill calculation using PHP & MY-SQL.
15. Retrieve and process EB-Bill calculating using PHP & MY-SQL.

Course Title: Data Communications and Computer Networks Semester : 5
Course Code : 17UITC51 Part III Contact Hours /Week : 5 Credit : 4

Objectives

To gain Knowledge about the goals of networking and the Data Transmission, Error Detection and Correction, Ethernet,WLAN, Routing, Protocols and Network Applications.

Unit I 15 Hours

Introduction: A Brief History - Applications - Computer Networks - Categories of Networks - Standards and Standards Organizations - Network Architecture - Open Systems and OSI Model - TCP/IP Architecture.

Communication Media and Data Transmission: Analog and Digital Data Transmission - Modulation and Demodulation - Transmission media - Wireless Communications - Data Transmission Basics - Transmission Basics - Transmission Mode.

Unit II 13 Hours

Error Detection and Correction: Types of Errors - Error Detection - Error Correction. **Data Link Control and Protocol Concepts:** Flow Control - Error Control - Asynchronous Protocols - Synchronous Protocols - High- Level Data Link Control (HDLC).

Local Area Networks: Types of Networks and Topology -LAN Transmission Equipment - LAN Installation and Performance.

Unit III 17 Hours

Ethernet: Token Bus: IEEE Standard 802.3, 802.4,802.5 and 802.6. **Token Ring:** IEEE Standard 802.5 - Fiber Distributed Data Interface(FDDI) - **Distributed Queue Dual Bus(DQDB):** LAN Operating Systems and Protocols - Ethernet Technologies.

Wide Area Networks: Transmission Methods - Carrier Types - Transmission Equipments - Design and Multicast Considerations - Protocols.

Wireless LANs: WLAN Applications - Wireless LAN Requirements - Planning for Wireless LANs - Wireless LAN Architecture - IEEE 802.11 Protocol Layer - IEEE 802.11 Physical Layer - Designing the Wireless LAN Layout - WAP Services.

Unit IV 14 Hours

Internet Working: Principles of Internet Working - Routing Principles - Internetwork Protocols(IP) - Shortcomings of IPV4 - IP Next Generation.

TCP Reliable Transport Service: Transport Protocols - The Service TCP Provides to Applications - End- to- End Service and Datagram's - Transmission Control Protocol -User Datagram Protocol.

Unit V 16 Hours

Network Applications: Client- Server Model - Domain Name System(DNS) - Telnet - File Transfer and Remote File Access - Electronic Mail - World Wide Web(WWW).**Network Management:** Goal of Network Management - Network Management Standards - Network Management Model - Infrastructure for Network Management - Simple Network Management Protocol (SNMP)

Text Book

1. Brijendra Singh., (2006), "*Data Communications and Computer Networks*", PHI, Second Edition.

Reference Books

1. Andrew S.Tanenbaum., (2006), "*Computer Networks*", Prentice Hall of India,4th Edition.
2. William Stallings., (2007), "*Data and Computer Communications*", PHI.
3. Behrouz A. Forouzan., (2005), "*Data and Computer Communication and Networking*", TMH.
4. Achyut S Godbole., (2005), "*Data Communication and Networks*", Tata McGraw Hill.

Course Title: Software Engineering

Semester : 5

Course Code : 17UITC52

Part III

Contact Hours /Week : 5

Credit : 4

Objectives

To gain knowledge about definition of Software Engineering, Software Cost Estimation Techniques, Software Requirements Specifications, Software Design Techniques, Software Testing and Maintenance.

Unit I

15 Hours

Introduction to Software Engineering: Some Definitions - Some Size factors - Quality and Productivity Factors - Managerial Issues. **Planning a Software Project:** Defining the Problem - Developing a Solution Strategy - Planning the Development Process - Planning an Organizational Structure - Other Planning Activities.

Unit II

12 Hours

Software Cost Estimation: Software Cost Factors - Software Cost Estimation Technique - Staffing- Level Estimation - Estimating Software Maintenance costs.

Unit III

15 Hours

Software Requirements Definitions: The Software Requirements Specification - Forms Specification Techniques - Languages and Processors for Requirements Specification.

Unit IV

18 Hours

Software Design: Fundamental Design Concepts - Modules and Modularization Criteria - Design Notations - Design Techniques - Detailed Design Considerations - Real-Time and Distributed System Design -Test Plans - Milestones, Walkthroughs, and Inspections .

Unit V

15 Hours

Verification and Validation Techniques: Quality Assurance – Walkthroughs and Inspections- Static Analysis - Symbolic Execution - Unit Testing and Debugging - System Testing - Formal Verification.

Text Book

1. Richard Fairley.,(1997),“*Software Engineering Concepts*”,Tata Mc GrawHill Publishing Company Limited,New Delhi.

Reference Books

1. K.L.James., (2009), “*Software Engineering*”,Prentice Hall of India Pvt.Ltd., New Delhi.
2. Rajib Mall., (2009), “*Fundamentals of Software Engineering*”,Prentice Hall of India Pvt ,Ltd., New Delhi.
3. Roger S.Pressman.,(2015),“*Software Engineering A Practitioner’s Approach*”, Tata McGraw- Hill Education Private Limited, New Delhi,7th Edition.
4. Ian Sommerville.,(2015),“*Software Engineering*”, Pearson Indian Education Service Private Limited, Chennai, 9th Edition.
5. Pankaj Jalote, (2015),“*An Integrated Approach to Software Engineering*”, Narosa Publishing House, New Delhi, 3rd Edition.

Course Title: Java Programming Semester : 5
Course Code : 17UITC53 Part III Contact Hours /Week : 5 Credit : 4

Objectives

Introduction to JAVA programming with object-orientation. Emphasis on the fundamental syntax and semantics of JAVA for applications and web applets. Continued study in the use of the Java programming language for writing complex and sophisticated stand-alone applications at the Intermediate level.

Unit I 17 Hours

Object Oriented Fundamentals - Class: Objects - Reference Variable - Constructors – Methods - ‘this’ keyword - Wrapper Classes - Static and Abstract Classes - Exception handling.

Unit II 16 Hours

Inheritance: Super class - Sub class - ‘Super’ Keyword - method overriding - Private, Public and Protected - Packages - Interfaces - Final and Finalize - String Handling.

Unit III 14 Hours

GUI: AWT Components - Layout - Event model - Graphics

Unit IV 15 Hours

Applets - Applet tags in HTML - Threads - Multithreads - Stream I/O and files.

Unit V 13 Hours

Servlets - JDBC – Networking

Text Book

1. Patrick Naughton , (2002) , “JAVA Hand Book” , Tata-McGraw Hill, NewDelhi.

Reference Books

1. E. Balagurusamy, 4th Edition, Programming With Java , TMH.
2. Herbert Schildt ,(2002) 5th Edition, Java 2 – Complete Reference , Mcgraw Hill Edition India Private Limited.
3. John R. Hubbard , (2002) 2nd Edition, Programming with Java (Schaum’s Outline Series) ,McGraw Hill International Editions.
4. Patrick Naughton and Herbert Schildt, (1999), “JAVA 2 - The Complete Reference”, Tata McGraw-Hill, New Delhi.

Course Title: Java Programming

Course Code : 17UITC5P

Part III

Contact Hours /Week : 6

Semester : 5

Credit : 4

1. To perform Volume calculation using method overloading .
2. String Manipulation using string (Use of any five string methods are preferred).
3. Program to demonstrate the use built-in exception in Java.
4. Using multilevel inheritance process student mark list.
5. Implement multiple inheritances for payroll processing.
6. Implement interface for area calculation for different shapes.
7. Create a package called “ Arithmetic “ the contains method to deal with all arithmetic Operators. Also write a Program to use the package.
8. Create a Thread using Thread class and Runnable interface
9. Write an Applet program to display a clock.
10. Write a JDBC program to execute and read select queries.
11. Create a HttpServlet Class and Print “hello” to the browser using doPost() Method?
12. Demonstrating Mouse Events using Java AWT Components

Course Title: Mobile Computing

Semester : 5

Course Code : 17UITE51

Part III

Contact Hours /Week : 5

Credit : 4

Objectives

To gain knowledge about basic mobile protocols, TCP/IP, GPRS, GSM, Ad hoc and Mobile application.

Unit I

20 Hours

INTRODUCTION: Mobile computing - Mobile computing Vs wireless networking – Mobile computing Applications – characteristics of Mobile Computing – Structure of Mobile Computing, MAC protocols – Wireless MAC issues – Fixed Argument scheme – Random Assignment Schemes – Reservation based schemes.

Unit II

15 Hours

MOBILE INTERNET PROTOCOL AND TRANSPORT LAYER: Overview of Mobile IP – Features of Mobile IP – Key Mechanism in Mobile IP- route optimization. Overview of TCP/IP – Architecture of TCP/IP – Adaptation of TCP Window – Improvement in TCP performance.

Unit III

10 Hours

MOBILE TELECOMMUNICATION SYSTEM : Global System for Mobile communication (GSM) – General Packet Radio Service (GPRS) – universal Mobile Telecommunication – (UTMS).

Unit IV

14 Hours

MOBILE AD-HOC NETWORKS : Ad-Hoc Basic Concepts – Characteristics – Applications – Design Issues Routing – Essential Of Traditional Routing Protocols - Popular Routing Protocols - Vehicular Ad Hoc Network (VANET) – MANET Vs VANET – Security

Unit V

16 Hours

MOBILE PLATFORM AND APPLICATIONS: Mobile Device Operating System – Systems – Special Constrains & Requirement – Commercial Mobile Operating Systems – Software Development Kit n : iOS, Android, Blackberry, Windows phone-Mobile Payment System - Security Issues

Text Book

1. Prasant Kumar Pattnaik., and Rajib Mall., (2012), “*Fundamentals of Mobile Computing*”, PHI Learning Private Limited, New Delhi.

Reference Books

1. Jochen H.Scheller.,(2007), “*Mobile communications*”, Pearson Education, New Delhi, 2nd Edition.
2. Dharma Prakash Agarwal., Quie and Anzeng.,(2005), “*Introduction to wireless and Mobile systems*”, Thomson Asia Private Limited.
3. UweHansmann., LotharMerk., Martin S. Nicklons., and Thomas Stober ., (2003), “*Principles Of Mobile Computing*”, Springer.

Course Title: Cryptography and Network Security

Semester : 5

Course Code : 17UITE52

Part III

Contact Hours /Week : 5

Credit : 4

Objective

To gain knowledge about concepts of OSI layers, Cryptographic concepts, AES, RSA, RC4, digital signatures and firewall security system

Unit I

21 Hours

Security Trends-The OSI Security architecture- Security Attacks-Security Services-Security mechanism-A model for network security-Symmetric cipher model-Substitution techniques-Transposition Techniques-Block Cipher Principles-The Data Encryption Standard –The strength of DES-Block Cipher design Principles

Unit II

16 Hours

Evaluation Criteria for AES-The AES Cipher-Multiple Encryption and Triple DES-Block Cipher Modes of Operation-Stream Cipher and RC4-Confidentiality using symmetric encryption-Introduction to number theory-public-key cryptography and RSA.

Unit III

14 Hours

Key management- Diffie - Hellman Key exchange-message authentication and hash function-hash algorithm-digital signatures and authentication protocols- digital signature standard.

Unit IV

9 Hours

Authentication application-Electronic mail security-IP Security-Web security.

Unit V

15 Hours

Intruders-Malicious software-Firewalls.

Text Book

1. William Stallings.,(2006),”*CYPTOGRAPHY AND NETWORK SECURITY*”, Principles and practices PHI Education Asia, IVth Edition.

Reference Books

1. Atul Kahate., “*Cyptography and Network Security*”, TMH, Second edition.
2. Behrouz A.Forouzan., “*Cyptography and Network Security*”,TMH.
3. Dr. V.K.Jain., “*Cyptography and Network Security*”, Khanna Books.

Course Title : Environmental Studies			Semester : 5
Course Code : 17UESV51	Part : IV	Contact Hours /Week : 2	Credit : 2

Objectives

To disseminate information of Environment of national and international issues, to create environmental consciousness among the students and facilitate environmental leadership among students

Unit I 6 Hours

Environment Education: Objectives, Nature and Scope – Environment Education in India, Components of Environment – Biosphere, Lithospheres, Hydrosphere, Atmosphere. Global Environment Issues - Global Warming, Ozone Layer Depletion, Acid Rain, Desertification, Loss of Bio-diversity, E-wastes and Cloud Bursting.

Unit II 6 Hours

Ecosystems: Concept, Structure and Functions of an ecosystem – Producers, Consumers and Decomposers; Energy Flow in an Ecosystem - Food Chains, Food Webs and Ecological Pyramids.

Unit III 6 Hours

Energy Resources and Conservation: Definition, Classification – Conventional, Non-Conventional with examples; Solid, Liquid and gaseous Wastes, Conversion of Wastes into Wealth; Energy from Wastes.

Unit IV 6 Hours

Natural Resources: Introduction, Types - Forest, Water, Mineral, Animal and Livestock, Land & Food; Resources Depletions - causes, consequences and remedies. Environmental Pollution – Noise, Air, Water, Soil - Causes, Consequences and Remedial Measures; Environment Laws, Acts Rules and Procedures in India – Social Issues – Sustainable Development.

Unit V 6 Hours

Biodiversity and its Conservation: Introduction, Types of Biodiversity – Genetic, Species and Ecological Levels; Bio-diversity at Global, and National levels; Loss of Biodiversity – causes and consequences and remedial measures; Hot Spots and Cool Spots of Bio-diversity; Biodiversity Conservation and Strategies – In Situ and Ex Situ.

Text Book

1. Ravichandran.P., and Muthumari.M., (2019), “*Environmental Studies*”, New Century Book House, Chennai.

Reference Books

1. Abhijit Mallick, (2014), “*Environmental Science and Management*”, Viva Books Private Limited, New Delhi.
2. Kanagasabai.S., (2010), “*Textbook on Environmental Studies*”, Prentice Hall of India Learning Private Limited, New Delhi.
3. Rajagopalan.R., (2005), “*Environmental Studies*”, Oxford University Press, New Delhi.
4. Ulaganathan Sankar, (2001), “*Environmental Economics*”, Oxford University Press, New Delhi.
5. Shukla R.S., and Chandel P.S., (2003), “*Plant Ecology*”, S.Chand & Company Limited, New Delhi.
6. Ramakrishnan.P.S.,(2013), “*Ecology and Sustainable Development*”, National Book Trust, India.

Course Title: Quantitative Aptitude Semester : 5
Course Code : 17UITS51 Part IV Contact Hours /Week : 2 Credit : 2

Objective

To gain knowledge about concepts of shortcuts, fundamental Age, roots problems, profit and loss methods with their shortcuts, time and distance problem for computational methods, interest, area and volume calculation and their shortcuts

Unit I Numbers - HCF & LCM of numbers-Decimal Fractions. **5 Hours**

Unit II Square roots & Cube roots – Average - Problems on Numbers-Problems on Ages. **7 Hours**

Unit III Percentage-Profit & Loss -Ratio & Proportions. **6 Hours**

Unit IV Time & Work - Time & Distance. **4 Hours**

Unit V: Simple Interest - Compound Interest – Area - Volume & Surface areas. **8 Hours**

Text Book

1. R.S.Aggarwal.,(2011), "*Quantitative Aptitude*", S.Chand & Company Limited.

Reference Books

1. R.V.Praveen., (2013), "*Quantitative Aptitude and reasoning*", PHI Learning, 2nd Edition.
2. M.Tyra.,(2011), "*Reprint Magical Book on Quicker Maths*",BSC Publishing Co-Private Limited,Delhi.
3. Abhijit Guha, "*Quantitative Aptitude for Competitive Exams*",Tata Mc Graw Hill Company,New Delhi, 4th Edition.

Self Study Paper – II

Course Title : Adventure Training and Personality Development	Semester : 5
Course Code : 17UNCV51 Part : V	Contact Hours /Week : 4 Credit : 2

Unit 1 Civil Defence

Civil defence organization and its duties/NDMA – types of emergencies/natural disasters – Fire services & fire fighting – traffic control during disaster under police supervision – essential services and their maintenance –

Unit II Disaster Management

Assistance during natural/other calamities: Flood/Cyclone/Earth quake/Accident etc. – setting of relief camp during disaster management – Collection and distribution of aid materials

Unit III Map Reading

Introduction to types of maps and conventional signs, scales and grid system, topographical forms and technical terms – relief, contours and gradients – cardinal points and types of north – types of bearings and use of service protractor – prismatic compass and its use & GPS – setting a map, finding north and own position – map to ground, ground to map

Unit IV Communication

Types of communications – characteristics of wireless technology (mobile, Wi fi etc) – characteristics of Walkie/Talkie – Basic RT procedure – latest trends and development (multimedia, video conferencing, IT)

Unit V Field Craft, Battle Craft, Adventure Training

Introduction - Judging the distance – description of ground – recognition, description and indication of landmarks and target – observation, camouflage and concealment – field signals – section formation – fire control orders – fire and movement – types of knots and lashings - Obstacle course-Para sailing – slithering – rock climbing – cycling/trekking

Reference Books

1. “*National Cadet corps standing Instructions*”, (2017), Volume I & II, DG NCC, Minister of Defence, Shri Sai Enterprises, New Delhi.
2. Major Ramasamy.R., “*NCC Guide*”, Priya Publication, Karur – 2.
3. Lt. Col. Prasad.P.S., (2008), “*A Key to Success*”, Kerala.
4. ANO Handbook, www.nccindia.nic.in.
5. Cadets Handbook Common Subjects SD/SW.

* Note : III year UG students enrolled in NCC only.

* Note: Necessary demonstration and practical training will be dealt during parade hours

Course Title: Android Programming

Semester : 6

Course Code : 17UITC61

Part III

Contact Hours /Week : 5

Credit : 4

Objectives

The focus of the subject is to learn about Android mobile development.

Unit I

20 Hours

Hello Android : A little background - what Android Isn't Android : An open platform for Mobile development – Native Android Application – Android STK features – Introduction to open handset alliance- What Dose Android Run on – Why develop for mobile – why develop for android – Introduction to develop Frameworks –**Getting Started** - Develop for android - developing for mobile and Embedded – Android development tools - **Creating Application And Activities** : what makes an android application – Introduction the application manifest file – Using the main fast Editor –Externalizing resources - The Android Application Lifecycle – Introducing Android application class.

Unit II

15 Hours

Building User Interfaces: Fundamental Android UI Design – Android user interfaces fundamentals – Introducing Layouts - Introducing fragment – creating new views - Introducing Adaptors - **Internet and Broadcast Receivers:** Introducing Intents –creating intent filters and Broadcast Receivers.

Unit III

10 Hours

Expanding the user Experience: Introducing for Action bar – Creating the new menus and action bar action terms – Introducing Dialogue – Introducing Notification – **Advanced User Experience:** Working with Animation – Enhancing your views.

Unit IV

13 Hours

Invading the home Screen: Introducing home screen widgets – creating app Widgets – Creating live wallpaper. **Video and using the camera:** Playing audio and videos - using the camera for taking pictures – Recording Video

Unit V

17 Hours

Maps, Geocoding, and Location - Based Service: Using Location Based Service – Using the Emulator With location Based Service – selecting a location provider - Finding your current location. **Monetizing, Promoting, distributing Applications:** Signing And Publishing Applications – Distributing Applications.

Text Book

1. Reto Meier., (2012),” *Professional Android 4 Applications Development*”, Wiley India Private Limited.

Reference Books

1. Mark.L.Murphy., (2016),” *The Busy coders Guide to Android Development*”, Commonsware LLC.
2. Wallace Jackson.,(2014), “*Android App for Absolute Beginners*”, A press Publishing.
3. Reto Meier.,(2012), “*Professional Android 2 Applications Development*”, Wiley India Private Limited.

Course Title: Web Programming

Course Code : 17UITC6Q

Part III

Contact Hours /Week : 6

Semester : 6

Credit : 4

JavaScript & JSP

1. Write a JavaScript Program To Generate Fibonacci Series
2. Write a JavaScript Program for Checking Palindrome Or Not.
3. Write a JavaScript Program To Validate Form.
4. Write a JavaScript Program To Create Popup Window
5. An Html Form With A JavaScript Event Handler
6. Write a JavaScript Program To remove Items A Dropdown List
7. Write a JavaScript Program Valid An Email Address.
8. Write a JSP to add the contents for Another JSP file Using @include directive
9. Write a JSP to Check Whether the given Number is prime Or Not
10. Write a JSP to forward to one JSP file To another JSP File using forward action.

Course Title: Software Testing

Semester : 6

Course Code : 17UITC62

Part III

Contact Hours /Week : 5

Credit : 4

Objectives

To gain knowledge about quality of software, fundamental of Testing phases, concepts of specialized testing, how to test the plan execution, how to performance of test .

Unit I

17 Hours

SOFTWARE DEVELOPMENT LIFE CYCLE MODELS: Phases of Software project - Quality, Quality Assurance, Quality Control - Testing, Verification and Validation - Process Model to represent Different Phases. **WHITE-BOX TESTING:** Static Testing - Structural Testing -Challenges in White-Box Testing.

Unit II

15 Hours

BLACK-BOX TESTING: Black-Box Testing- When and How to do Black- Box Testing. **INTEGRATION TESTING:** Integration Testing as Type of Testing - Integration Testing as a Phase of Testing - Scenario Testing - Defect Bash.

Unit III

13 Hours

SYSTEM AND ACCEPTANCE TESTING: System Testing Overview – Why System testing is done? - Functional versus Non-functional Testing - Functional testing - Non-functional Testing - Acceptance Testing – Summary of Testing Phases.

Unit IV

18 Hours

PERFORMANCE TESTING: Factors governing Performance Testing - Methodology of Performance Testing - tools for Performance Testing - Process for Performance Testing - Challenges. Regression - What is Regression Testing? - Types of Regression Testing - When to do Regression Testing - How to do Regression Testing - Best Practices in Regression Testing.

Unit V

12 Hours

TEST PLANNING, MANAGEMENT, EXECUTION AND REPORTING: Test Planning - Test Management - Test Process - Test Reporting -Best Practices. **TEST METRICS AND MEASUREMENTS:** Project Metrics – Progress Metrics - Productivity Metrics - Release Metrics.

Text Book

1. Srinivasan Desikan., and Gopaldaswamy Ramesh., (2012), "*Software Testing*", Principles and Practices Pearson Education.

Reference Books

1. William Perry., (2007), "*Effective Methods of Software Testing*", Wiley Publishing, Third Edition.
2. Naresh Chauhan.,(2010), "*Software Testing Principles and Practises*",Oxford University Press,New Delhi.
3. Renu Rajani., and Pradeep Oak.,(2007), "*Software Testing*", TMH.

Course Title: Introduction to Unified Modeling Language Semester : 6
Course Code : 17UITE61 Part III Contact Hours /Week : 5 Credit : 4

Objectives

The focus of the subject is to learn about Object Oriented Methodologies and UML Diagrams.

Unit I 15 Hours

Object Oriented Methodologies: Introduction - Survey of some of the Object Oriented Methodologies – Rumbaugh et al's Object Modeling Technique- the booch methodology - The Jacobean et al. Methodologies – Patterns – Frameworks – The Unified approach.

Unit II 20 Hours

Unified Modeling Language- Introduction - Static and Dynamic Models- Why Modeling – Introduction to the Unified Modeling Language – UML Diagrams – UML Class Diagram – Use-Case Diagram – UML Dynamic Modeling – Model Management – UML Extensibility – UML Meta Model.

Unit III 10 Hours

Object Oriented Analysis process- Introduction – Why Analysis is a Difficult activity – Business object analysis – use-case driven object oriented analysis – business process modeling – use-case model – developing effective documentation – case study.

Unit IV 14 Hours

Object analysis: Classification – classification theory – approaches for identifying classes – noun phrases approach – common class patterns approach – use-class driven approach – classes, responsibilities and collaborators- naming classes.

Unit V 16 Hours

Identifying object relationships, attributes and methods – associations – super – sub class relationships – A part of relationships aggregation – case study – class responsibility – defining attributes for Via Net Bank objects – Object responsibility – Defining methods for Via Net Bank objects.

Text Book

1. AliBahrami.,(2008), "*Object oriented systems development using Unified Modeling Language*",TMH.

Reference Books

1. Mahesh.P Matha.,(2008), "*Object oriented analysis and design using UML*", PHI.
2. Grady Booch., James Rumbaugh., and Ivar Jacobson., "*The Unified Modeling Language User Guide*",Pearson Publications, 2nd Edition.
3. Michael.R Blaha., and James.R Rumbaugh, "*Object Oriented Modeling and Design With UML*", Pearson Publications, 2nd Edition.

Course Title: Compiler Design

Semester : 6

Course Code : 17UITE62

Part III

Contact Hours /Week : 5

Credit : 4

Objectives

The focus of the subject is to learn about the structure of the compiler and context-free grammars, syntax analysis, system formulas and code optimization.

Unit I

10 Hours

Introduction to Compilers: Compilers and Translators – Need of Translator – The Structure of a Compiler – Lexical analysis – Syntax analysis – Intermediate code generation– optimization – code generation – compiler- writing tools. Finite automata and lexical Analysis: The role of the lexical analysis – A simple approach to the design of lexical analyzers – Regular expressions to finite automata – Minimizing the number of states of a DFA.

Unit II

15 Hours

The syntactic specification of programming languages: context free grammars – derivations and parse trees – capabilities of context free grammars. Basic parsing techniques: Parsers – shift – reduce parsing – operator – precedence parsing – top down parsing – predictive parsers.

Unit III

20 Hours

Syntax – directed translation: syntax – directed translation schemes – implementation of syntax – directed translators – intermediate code – postfix notation – parse trees and syntax trees – 3 address code – quadruples and triples – translation of assignment statements – Boolean expressions – statements that alter the flow of control. Symbol tables: the contents of a symbol table – representing scope information.

Unit IV

13 Hours

Run time storage administrations: Implementation of a simple stack allocation scheme – implementation of block-structured languages – storage allocation in block structured languages. Error deduction and recovery: errors – lexical phase errors – syntactic phase errors – semantic errors.

Unit V

17 Hours

Introduction of code optimization: The principle sources of optimization – loop optimization – the DAG representation of basic blocks – value numbers and algebraic laws – Global data flow analysis. Code generation: Object programs – problems in code generation – a machine model – a simple code generator – register allocation and assignment- code generation from DAG's – peephole optimization.

Text Book

1. Alfred V.Aho.,Jeffrey D.Ullman., and Narosa.,(2001), "*Principles of Compiler Design*", Publishing House, 25th Reprint.

Reference Books

1. Alfred V.Aho., Monica S.Lam.,Ravi Sethi., and Jeffrey D.Ullman.,(2007),"*Compiler Principles Techniques and Tools*",Pearson Publications, Second Edition.
2. Alfred V.Aho., and Ravi Sethi., "*Compiler Principles Techniques and Tools*", Pearson Publication, 2nd Edition.
3. Alfred V.Aho.,(2002),"*Principles of Compiler Design*",Vikas Publication ,Pune.

Course Title : Project Work /Viva Voce	Semester :6
Course Code : 17UCSC6P Part : III	Contact Hours /Week : 5
	Credit : 5

For Project Work & Viva Voce

A Project should be undertaken by individual or two students with in the college.
Total Marks: 100 (Internal: 40 marks, External: 60 marks)

Parameters for Internal Marks:

Two Review Meetings : 2 X 15 = 30 Marks

Overall Performance : 10 Marks

Parameters for External Marks:

Project Report : 10 Marks

Project Demo & Presentation : 30 Marks

Viva Voce : 20 Marks

Course Title : Value Education Semester :6
Course Code : 17UVEV61 Part : IV Contact Hours /Week : 2 Credit : 2

Objectives

To enable the students to develop character, morality, cultural and spiritual values, values of democracy, secularism and equality and to strengthen National Integration.

Unit I 6 Hours

Values and the Individual : Meaning of Value Education - Significance of Values – Classification of Values – Objectives of Value Education - Need for the Inclusion of Value Education – Values and the Individual; Self Discipline, Self Confidence, Self Initiative, Empathy, Compassion, Forgiveness, Honesty and Moral Courage.

Unit II 6 Hours

Values and Religions / Faiths: Karma Yoga in Hinduism – Ahimsa in Jainism - Compassion in Buddhism - Love and Justice in Christianity – Universal Brotherhood in Islam- Selfless Service in Sikhism – Need for Inter Religious Dialogue and Communal Harmony.

Unit III 6 Hours

Values and Society: Definition of Society – Democracy – Secularism – Socialism – Gender Justice – Human Duties/Rights – Socio-Political Awareness – Multi Culturalism and Social Integration – Social Justice.

Unit IV 6 Hours

Professional Values: Definition – Accountability – Willingness to Learn – Team Spirit – Consensus – Honesty – Transparency – Mutual Respect – Democratic Functioning– Integrity and Commitment.

Unit V 6 Hours

Role of Social Institutions in Value Formation: Role of Family – Peer Group – Society – Educational Institutions – Role Models – Swamy Vivekananda – Mahatma Gandhi – Martin Luther King Jr. – Mother Teresa – Mass Media in Value Formation.

Text Book

1. Kannan.S., Sujatha.S., and Ramachandran.S., (2019), “*Values of Education*” , The New Century Book House, Chennai.

Reference Books

1. Saravanan.P., and Andichamy.P., “*Value Education*” , Madurai Merit India Publications.
2. Swami Chidbhananandha, “*Indian National Education*” , Sri Ramakrishna Mutt, Thirupparaithurai,Trichy.
3. “*Complete Works of Swami. Vivekananda*” , Sri Ramakrishna Mutt,Chennai.
4. Gandhi. M.K., (2014), “*An Autobiography or The Story of My Experiment with Truth*” , Navajeevan Publication, Ahmadabad.
5. Jeyapragasam.S.,(2006) , “*World Religions*” , CEPCHIRA, Madurai.
6. (1999),”*Encyclopedia of World Religion*” , Merriam Webster Publication, United States of America.

Course Title: Networking Lab

Course Code : 17UITS61

Part III

Contact Hours /Week : 2

Semester : 6

Credit : 2

1. Networking Commands
2. Get detailed IP address for a System
3. Send data from client to server using UDP
4. Send data from client to server using TCP
5. Socket program for echo.
6. Create a chat room using TCP and UDP
7. File Transfer In Client & Server
8. Implementation Of Remote Command Execution
9. Implementation Of Address Resolution Protocol
10. Implementation of Remote Method Invocation.

Course Title: Open Source Programming with Linux, Apache, MySQL, and PHP
Course Code : 17CINF51

Semester : 5
Credit : 1

Objectives

To be able to develop web application using open source technologies. To learn PHP scripting language and deploying application on Apache Web Server. To learn Apache Web Server configuration. To learn MySQL database deployment for web applications

Unit I

6 Hours

Setting up Apache Web Server, MySQL and PHP Basics Apache Installation and Configuration- Current and future versions of Apache, Choosing the Appropriate installation method, Installing apache on Linux platforms, Apache configuration file structure, Apache log files, Apache-related commands, Starting apache for the first time

PHP Installation and Configuration - Current and Future version of PHP/MySQL, Installing / Building PHP/MySQL on different platforms with apache, Php.ini Basics, The basics of PHP scripts

Unit II

6 Hours

Introduction to Web Technology – HTML – CSS : Overview Of HTML , HTML Documents ,Formatting HTML Documents ,Inserting Images ,Linking Document ,List ,Table ,Form. Overview of CSS ,Inline CSS ,Internal CSS .External CSS

Unit III

6 Hours

Introduction to JavaScript - Overview Of JavaScript ,Variable ,Operator ,Data Type ,Conditional Statements ,Looping Statements ,Function ,Event ,Date &Time Function ,String Function ,Form Validation

Unit IV

6 Hours

Introduction to PHP -Development Concepts, Data Types, Variables, Control Structures, Looping Structure , Functions.

Unit V

6 Hours

Introduction to MySql - **Working with MySql Admin** - **MySql Functions in PHP –SQL Queries – PHP projects.**

Text Books

1. Julie.C Meloni., “*Sams Teach Yourself PHP, MySQL and Apache All in One*”, Pearson Education, 4th edition.
2. Jeremy McPeak., “*Beginning JavaScript*” Wrox Publication

Reference Books

1. James Lee., and Brent Ware., “*Open source web development with LAMP*”, Pearson Education.
2. Jason Gerner., Morgan Owens., Elizabeth Naramore., and Matt Warden., “*Professional LAMP: Linux, Apache, MySQL and PHP5 Web Development*” WROX publication.
3. Bible Steve Suehring., Tim Converse., and Joyce Park., “*PHP6 and MySQL*” Wiley India Edition.
4. Luke Welling., Laura Thomson., “*PHP and MySQL Web Development*”, Pearson.
5. Lee BabinApress., “*Beginning Ajax with PHP From Novice to Professional*”
6. Rebecca Riordan., “*Head First AJAX*”, O’Reilly Media.
7. Lynn Beighley., and Michael Morrison., “*Head First PHP & MySQL*”, O’Reilly Media.
8. Ryan Benedetti., and Ronan Cranley., “*Head First jQuery*” O’Reilly Media.
9. Jonathon chaffer., and Karl Swedberg., “*Learning jQuery*” O’Reilly Media.

List of Software/Learning Websites

1. <http://www.codecademy.com/learn>
2. <https://www.udemy.com/learn-html5-programming-from-scratch/>
3. <http://www3schools.com>
4. <http://www.tutorialspoint.com/ajax/>
5. <http://www.tutorialspoint.com/jquery/>
6. <http://www.tutorialspoint.com/p>

Course Title: Computer Hardware & Software Maintenance

Semester : 6

Course Code :17CINF61

Contact Hours /Week : 3

Credit : 1

Objectives

This course focuses on the design of computing systems, including instructions in the principles of computer hardware and software components, algorithms data basis, telecommunications, etc. Includes the knowledge to identify and explain PC components, setup a basic PC workstation, conduct basic software installation, identify compatibility issues and recognize/prevent basic security risks and also gives knowledge in the area of Green IT and preventative maintenance of computers.

Unit I

6 Hours

Introduction -Introduction to Computer - Components of Computer - Booting Process - Assemble the PC - Concept of BIOS – Review.

Unit II

6 Hours

Basic Computer Technical Knowledge - How a Computer Works – Hardware – Software – Review.

Unit III

6 Hours

Computer Maintenance - Why Maintain? - Updating Software - Virus and Malware -Prevention and Removal - Computer Hardware Maintenance - Peripheral Hardware Use and Maintenance – Review.

Unit IV

6 Hours

Setting Up or Customizing a Computer - When a Computer Arrives - Partitioning a Hard Drive - Installing Operating Systems - Installing and Uninstalling Other Software - Setting Up User Accounts – Review

Unit V

6 Hours

Computer Troubleshooting and Repair Basics - Improving Slow Performance - Stepwise guides for Common Problems - Understanding Error Messages - How to Search for Information - How to Distinguish a Software Issue from a Hardware Issue - Fixing Software Problems - Fixing Hardware Problems - Troubleshooting and Repairing Printers - Managing E-Waste - Review.

Text Book

1. Craig Zacker., John Rourke., (2001), “*PC HARDWARE The Complete Reference*”,First Edition .

Reference Books

1. Nega Tarekegn Adane., Kumilachew Tegegne Alemu.,(2015), “*A Simple Guideto Computer Maintenance and Troubleshooting*”.
2. Manahar Lotia.,Pradeep Nair.,Payal Lotia., “*Modern Computer Hardware Course*”,BPB Publications,Revised Edition.
3. Velankar.S.S.,Ukidve.A.A.,(2014), “*Computer Hardware And Maintenance*”,Nirali Prakashan.