Dr.M.G.R.
Educational and Research Institute
UNIVERSITY
(Decl. U/S 3 of the UGC Act 1956)

DEPARTMENT OF COMPUTER APPLICATIONS

BCA – Computer Applications (Full Time)
Curriculum & Syllabus
2013 Regulation

I SEMESTER						
S.NO	**Sub.Code**	**Title of the Subject**	**L**	**T**	**P**	**C**
1.	HBTA13001/ HBHI13001/ HBFR13001	Tamil/Hindi/French – I	**3**	**0**	**0**	**3**
2.	HBEN13001	English – I	**3**	**0**	**0**	**3**
3.	HBMA13A01	Allied I Paper I Mathematics – I	**3**	**1**	**0**	**4**
4.	HBCA13G01	Fundamentals of Computers	**3**	**1**	**0**	**4**
5.	HBCA13G02	Office Automation	**3**	**0**	**0**	**3**
6.	HBCA13L01	PC Lab	**0**	**0**	**2**	**2**
Total			**15**	**2**	**2**	**19**

II SEMESTER						
S.NO	**Sub.Code**	**Title of the Subject**	**L**	**T**	**P**	**C**
1.	HBTA13002/ HBHI13002/ HBFR13002	Tamil/Hindi/French – II	**3**	**0**	**0**	**3**
2.	HBEN13002	English – II	**3**	**0**	**0**	**3**
3.	HBMA13A02	Allied I Paper II Mathematics – II	**3**	**1**	**0**	**4**
4.	HBCA13G03	DOS and Windows Operating System	**3**	**0**	**0**	**3**
5.	HBCA13G04	Programming in C	**3**	**0**	**0**	**3**
6.	HBCA13L02	Programming in C Lab	**0**	**0**	**2**	**2**
7.	HBCA13L03	DOS and Windows OS Lab	**0**	**0**	**2**	**2**
Total			**15**	**1**	**4**	**20**

III SEMESTER						
S.NO	**Sub.Code**	**Title of the Subject**	**L**	**T**	**P**	**C**
1.	HBCA13GA1	Allied II Paper I Computer Organization and Design	**3**	**1**	**0**	**4**
2.	HBCA13G05	Data Structures	**3**	**0**	**0**	**3**
3.	HBCA13G06	Web Page Designing	**3**	**0**	**0**	**3**
4.	HBCA13G07	Fundamentals of Operating System	**3**	**1**	**0**	**4**
5.	HBCA13G08	Financial Accounting	**3**	**1**	**0**	**4**
6.	HBCA13L04	Data Structures using C Lab	**0**	**0**	**2**	**2**
7.	HBCA13L05	Web Page Designing Lab	**0**	**0**	**2**	**2**
Total			**15**	**3**	**4**	**22**

IV SEMESTER						
S.NO	**Sub.Code**	**Title of the Subject**	**L**	**T**	**P**	**C**
1.	HBCA13GA2	Allied II Paper II Computer Organization and Design	**3**	**1**	**0**	**4**
2.	HBCA13G09	Object Oriented Paradigm and Programming in C++	**3**	**0**	**0**	**3**
3.	HBCA13G10	Introduction to RDBMS	**3**	**0**	**0**	**3**
4.	HBCA13G11	Software Engineering	**3**	**1**	**0**	**4**
5.	HBMG13G01	Entrepreneurship Development	**3**	**0**	**0**	**3**
6.	HBCA13L06	Programming in C++ Lab	**0**	**0**	**2**	**2**
7.	HBCA13L07	RDBMS Lab – Query	**0**	**0**	**2**	**2**
Total			**15**	**2**	**4**	**21**

V SEMESTER						
S.NO	**Sub.Code**	**Title of the Subject**	**L**	**T**	**P**	**C**
1.	HBMG13L01	Soft Skills-I	**2**	**0**	**0**	**2**
2.	HBMG13001	Environment Studies	**3**	**0**	**0**	**3**
3.	HBCA13G12	Programming in Java	**3**	**0**	**0**	**3**
4.	HBCA13G13	Data Communication and Networking	**3**	**1**	**0**	**4**
5.	HBCA13G14	Visual Programming	**3**	**0**	**0**	**3**
6.	HBCA13L08	Programming in Java Lab	**0**	**0**	**2**	**2**
7.	HBCA13L09	Visual Programming Lab	**0**	**0**	**2**	**2**
Total			**14**	**1**	**4**	**19**

VI SEMESTER						
S.NO	**Sub.Code**	**Title of the Subject**	**L**	**T**	**P**	**C**
1.	HBMG13L02	Soft Skills-II	**2**	**0**	**0**	**2**
2.	HBCA13G15	Computer Graphics	**3**	**1**	**0**	**4**
3.	HBCA13G16	Linux OS	**3**	**0**	**0**	**3**
4.	HBCA13G17	Mobile Communication	**3**	**1**	**0**	**4**
5.	HBCA13G18	Multimedia Systems	**3**	**1**	**0**	**4**
6.	HBCA13L10	Linux Lab	**0**	**0**	**2**	**2**
7.	HBCA13L11	PROJECT WORK	**0**	**0**	**10**	**10**
Total			**14**	**3**	**12**	**29**

Total Credits to be earned for the award of the Degree : 130

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DEPARTMENT OF COMPUTER APPLICATIONS

HBTA13001 **TAMIL-I** **3 0 0 3**

நோக்கம்:

- **வாய்மொழிஇலக்கியத்தையும்செய்யுள்இலக்கியத்தையும்அறிந்துகொள்ளல்**
- **சிறுகதைமரபினைப்புரிந்துகொள்ளல்**
- **பிழைஇன்றித்தமிழ்எழுதுவதற்குஅடிப்படைஇலக்கணத்தைப்பயிற்றுவித்தல்**
- **கவிதைமரபினையும்சிறுகதைமரபினையும்வரலாற்றுநிலையிலிருந்துவிளக்குதல்**

முதற்பருவம் – தமிழ்த்தாள் 1

அலகு – 1

செய்யுள்திரட்டு

வாய்மொழிஇலக்கியம்: நாட்டுப்புறப்பாடல்கள்

1. தாலாட்டு
2. காதல்
3. ஒப்பாரி
4. காணிநிலம்வேண்டும் – பாரதி
5. நல்லதோர்வீணை – பாரதி
6. தமிழ்காதல் – பாரதிதாசன்
7. தமிழ்வளர்ச்சி – பாரதிதாசன்
8. எந்நாளோ? – பாரதிதாசன்
9. ஆறுதன்வரலாறுகூறுதல் – கவிமணிதேசியவிநாயகம்பிள்ளை

அலகு – 2

1. வழித்துணை – ந.பிச்சமூர்த்தி
2. குருடர்களின்யானை - அப்துல்ரகுமான்
3. முள்முள்முள் - சிற்பி

அலகு – 3 புதுமைப்பித்தன்கதைகள்

1. கடவுளும்கந்தசாமிப்பிள்ளையும்
2. செல்லம்மாள்
3. துன்பக்கேணி
4. ஆற்றங்கரைப்பிள்ளையார்
5. ஒருநாள்கழிந்தது

அலகு – 4

பெயர், வினை, இடை, உரிச்சொற்களின்பொதுஇலக்கணம், வலிமிகும்இடங்கள், வலிமிகாஇடங்கள்

அலகு – 5

1. தமிழ்க்கவிதையின்தோற்றமும்வளர்ச்சியும்
   (மரபுக்கவிதை, புதுக்கவிதை)
2. தமிழ்ச்சிறுகதையின்தோற்றமும்வளர்ச்சியும்

மரபுத்தொடர்கள், பொருந்தியசொல்தருதல்கலைச்சொற்கள், நேர்காணல்

மேற்பார்வைநூல்கள் :

1. சென்னைப்பல்கலைக்கழகவெளியீடு – 2013
2. பொதுஇலக்கணம்

Total no of Hrs: 45

BHI13001 **HINDI – I** **3 0 0 3**

OBJECTIVES:

- Special emphasis on creative writing with phrases and quotes.
- Essays of eminent authors have been selected
- Administrative terms prescribed by official language department is taught

Prose, Administrative Hindi and Grammer.

UNIT I **9 Hrs**

1. Sabhyatakaarahasya – lesson and annotations ,Questions & answers,
2. Administrative terms (Prayojanmulak Hindi)

UNIT II **9 Hrs**

1. Mitrathakarahasya - lesson and annotations questions and answers
2. Patralekhan, definitions, correspondence in hindi

UNIT III **9 Hrs**

1. Paramanuoorjaevam and kadhyasanrakshan (lesson) annotations and answers,
2. Technical terms and words, letter writing

UNIT IV **9 Hrs**

1. Yuvavon se (lesson), annotations, essay and questions and answers
2. Types of official correspondence, technical terms
3. Grammer(Change of voice, correcting the sentences)

UNIT V **9 Hrs**

1. Yogyataaurvyavasaykachunav (Lesson) essay, questions and answers
2. Letter writing
3. grammer& technical terms

Total no of Hrs: 45

TEXT BOOKS:

1. Dr. Syed Rahmatullah&PoornimaPrakashan, Hindi gadhyamaala

REFERENCES:

1. Dr. Syed Rahmatullah&PoornimaPrakashan, *Prayojanmulak Hindi*
2. Dakshin Bharat Hindi Prachara Sabha, T.Nagar,*Saral Hindi Vyakaran-2*

HBFR13001	**FRENCH – I**	**3**	**0**	**0**	**3**

UNITÉ 1 **9 Hrs**

Décrouvrir le langue française

UNITÉ 2 **9 Hrs**

Faire connaissance

UNITÉ 3 **9 Hrs**

Organizer son temps

UNITÉ 4 **9 Hrs**

Découvrir son environnement

UNITÉ 5 **9 Hrs**

S'informer, Se faire plaisir

Total no. of Hrs: 45

TEXT BOOK:

Authors: Jacky Girardet, Jacques Pécheur

Available at : Goyal Publishers Pvt Ltd 86, University

Block Jawahar Nagar ,New Delhi – 110007. Tel : 011 – 23858362 / 23858983

HBEN13001 ENGLISH FOR SPECIAL PURPOSE – I 3 0 0 3

OBJECTIVES:

- To improve the vocabulary
- To develop the comprehension skill
- To make the students speak fluently
- To promote the reading ability

UNIT I FOCUS ON LANGUAGE 9 Hrs

Syllables-vocabulary –synonyms, antonyms, homonyms, collocation, word relation –word formation –affixes, nominal compounds ,confusing words, technical words –tenses –modals- concord —active and passive verbs – impersonal passive- reporting sentences –qualifier, modifier-adjectives and degrees of comparison '–be 'and' have' verb questions –'wh' questions -negatives

UNIT II ENGLISH FOR COMMUNICATION 9 Hrs

Communication – Types – Scope – need – barriers – Process / Stages – Channels – Scientific / Business

UNIT III SPEAKING 9 Hrs

Teach pronunciation especially vowel sounds –know the impact of silent letters, double consonants –accent - parsing words-using formal and informal language – introducing oneself –basic questions –about one's hobby, dream job, family and friend-greetings- welcome speech, introducing the guest, vote of thanks- interpreting the chart ,table and presenting it with degrees of comparison- describe an industrial visit, -a traffic problem

UNIT IV READING 9 Hrs

The Reading Process – Efficient, Inefficient – active, passive – browse, Skim, Scan – eye – reading – Comprehension – Inferrring topical sentence – arrange the paragraphs in order.

Practical (Internal)

UNIT V SPEAKING & READING 9 Hrs

Newspaper – dialogue – role play intro about yourself giving clue - topics on your family, your friends, your faculty –a few functions at your home such as what, when why, how –your first day in the college – the subject that you like- as narration or as a dialogue between the two friends - greetings, asking excuses

Total No of Hrs:45

TEXT BOOK:

1. *Preliminary*(2002), Cambridge university Press, New York,*BEC*

REFERENCES:

1. Dr.P.N. Ramani, *New Century Books*, Vignetts
2. Dr. S.PadmasaniKannan,(2007) *Functional English* Commonwealth Publishers,

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HBMA13A01 **MATHEMATICS I** **3 1 0 4**

OBJECTIVES:

- Engage students in sound mathematical thinking and reasoning.
- Analyze the structure of real world problems and plan solution strategies.
- Solve the Problems using appropriate tools.

UNITI **12 Hrs**

ALGEBRA:Binomial, Exponential, Logarithmic Series(withoutproofoftheorems)– Problems on Summation, Approximation and Coefficients.

UNITII **12 Hrs**

MATRICES :Characteristic equation –Eigen values and Eigen vectors of a real matrix–Properties of Eigen values–Cayley-Hamilton theorem (without proof)–Orthogonal reduction of asymmetric matrix to Diagonal form.

UNIT III **12 Hrs**

TRIGONOMETRY :Expansion of Sin nθ, Cos nθ in powers of Sinθ and Cosθ-Expansion of Tan nθ-Expansion of $\text{Sin}^n\ \theta$ and $\text{Cos}^n\theta$ in terms of Sines and Conines of multiples of θ-Hyperbolic functions-Separation into real and imaginary parts.

UNIT IV **12 Hrs**

DIFFERENTIATION*:* Basicconcepts of Differentiation–Elementary differentiation methods –Parametric functions–Implicit function –Leibnitz theorem (without proof)–Maximaand Minima– Points of inflection.

UNIT V **12 Hrs**

FUNCTIONS OF SEVERAL VARIABLES :Partial derivatives– Total differential–Differentiation of implicit functions–Taylor's expansion-Maxima and Minima by Lagrange's Method of undetermined multipliers–Jacobians.

Total No of Hrs:60

TEXT BOOK:

1. Kreyszig,E(2001)*AdvancedEngineeringMathematics*(8^{th}ed.),JohnWileyandSons(Asia)Pvt.Ltd., Singapore.

REFERENCES:

1.Grewal,B.S(2000) *Higher Engineering Mathematics*(3^{5th}ed.), Khanna Publishers, Delhi,

2.JohnBird(2010) *BasicEngineeringMathematics*(5^{th}ed.),ElsevierLtd.

3.Veerarajan(2002) ,*EngineeringMathematicsforIYr*.TataMcGrawHillPublishingCo.,NewDelhi.4.

4.Kandasamy, P&Thilagavathy,K&Gunavathy, K(2000) *Engineering Mathematics*(4^{th} ed.),S.Chand& Co., Publishers.

HBCA13G01 **FUNDAMENTALS OF COMPUTERS** **3 1 0 4**

OBJECTIVES:

- To give you a general understanding of how a computer works
- Introduce you to assembly-level programming
- To prepare you for future courses
- Introduction To Programming Environment
- Input/ Output Devices and Memory units

UNITI **12 Hrs**

Introduction to Computers**:**Basic structure of Computer, Classification of computers:(Micro, mini frame, super computer,pc, server,workstations)Data Representation With in Computer:BIT, BYTE, WORD ASCII, EBCDIC, BCD Code

UNIT II **12 Hrs**

Input/ Output Devices and Memory **:**Keyboard Direct Entry: Card readers, scanning devices (BAR CODE, OMR, MICR),Voice input devices, Light pen, Mouse, Touch Screen, Digitizer, Scanner. . Output Devices:Printers: Impact and Non-impact printers.CRT, LCD, CD-WRITTER, ZIP DRIVE, DVD ,Introduction to Web Camera, modem. Memory:RAM, ROM, PROM, EPROM, EEPROM ,Base memory, extended memory, expanded memory, Cache memory Storage devices Tape, FDD, HDD, CDROM, Pen Drive.

UNITIII **12 Hrs**

Algorithm & Flowcharts: Introduction To Programming Environment, Definition and properties Principles of flowcharting, Flowcharting symbols ,Converting algorithms to flowcharts. Introduction To Programming Environment: History of languages, high-level, Low level, Assembly languages etc. Compilers, Interpreters, Assemblers, Linkers, Loaders.

UNITIV **12 Hrs**

Microcomputers:What is Microprocessor, Introduction to Family of microprocessor, Ideal microcomputer, An Actual microcomputer, Memory system for microcomputer, Minimum microcomputer configuration.

UNIT V **12 Hrs**

Voice and Data communication :Types of communications, Physical communication, Public Switched Telephone Network, Cellular communication system.

Total No of Hrs:60

TEXT BOOK:

1. Rajaraman, V(2010*) Fundamentals Of Computers(*5th ed.),PHI Learning

REFERENCES:

1. Sinha, P, K(2004) *Computer Fundamentals(6th ed.)* BPB Publications.
2. Reema Thareja(2014), *Fundamentals of Computers*, Oxford.
3. Anita Goel(2010), *Computer Fundamentals***,** Pearson Education India.

BCA13G02 **OFFICE AUTOMATION** **3 0 0 3**

OBJECTIVES:

- To improve quality of output in terms of presentation and reduction in processing time
- Discussing in MicroSoft Word documents.
- Working with Tables and Columns.
- Introduction to Ms-Excel.
- Introduction to Power point.

UNIT I **9 Hrs**

Introduction to Ms-Word**:** Starting Word, Typing and saving your Masterpiece, printing Title Bar, Toolbars, The Ruler, Insertion point, Scroll Bars, The Menu bar, The status bar. Dialog Boxes: Command buttons, check boxes, drop-down lists, tabs, radio buttons, Increment buttons.Wizards and Templates. Basic Text Editing:Moving around in a document, Adding Text ,Cut, Copy, Paste, Undo, Redo, Delete .

UNIT II **9 Hrs**

Formatting: Character formatting ,Font dialog box paragraph Formatting ,Keeping text together,Adding borders and shading,Using tabs, page and section formatting, setting page margins, numbering pages.Searching and Proofreading Tools: Find and replace, Searching for special character, Proofreading tools, Choosing custom dictionary, Checking Grammar, Choosing a writing style, Using the Thesaurus

UNIT III **9 Hrs**

Working with Tables and Columns: Anatomy of a Table, creating a table, entering text in a table, Using table tools Changing columns widths with Auto fit, Gridlines, Merging Cells, Formatting Sorting tables, copying tables, deleting tables, Printing of Documents, Mail merge.

UNIT IV **9 Hrs**

Introduction to Ms-Excel:Spreadsheet overview, Excel highlights, starting excel, creating spreadsheet excel menu , Working with Formulas and Functions, Introduction, Using basic formulas, advance formulas, designing formulas. Using basic and advance functions, Formatting:Types of formatting Using borders, color and patterns ,Conditional format , Creating and Formatting Charts: Introduction to charts. Creating charts, formatting charts, exploring charts.

UNITV **9 Hrs**

Introduction to Power point - Creating a Presentation with Microsoft PowerPoint, Modifying a Presentation, Inserting Objects into a Presentation, Finishing a Presentation, Working with Advanced Tools and Masters, Enhancing Charts, Inserting Illustrations, Objects and Media Clips, Using Advanced Features.**Introduction to Access**: Introduction to database, Database basics, Creating and working with the database, Finding, filtering and formatting data.

Total No of Hrs:45

TEXT BOOK:

1. Corey Sandler , Tam Badgett& Jan Weingarten *Teach Yourself Office 97/2000 For WindowS* , BPB Publications.

REFERENCES:

1. Stephen L. Nelson(1999) *Office 2000: The Complete Reference* , McGraw-Hill.
2. Olsen, J, W(1999)*Mastering Word 2000 Premium Edition*,SybexInc.

HBCA13L01 **PC SOFTWARE LAB** **0 0 2 2**

OBJECTIVES:

- Students will be learning and knowing to operate MS WORD
- Students will have knowledge on MS EXCEL worksheets
- Students will be capable of preparing slides and presentation in MS POWERPOINT

MSWORD

1. Text Manipulations.
2. Usage of Numbering, Bullets, Footer and Headers.
3. Usage of Spell check, and Find & Replace.
4. Text Formatting.
5. Picture insertion and alignment.
6. Creation of documents, using templates.
7. Creation templates.
8. Mail Merge Concepts.
9. Copying Text & Pictures from Excel.

MS - EXCEL

10. Cell Editing.
11. Usage of Formulae and Bulit-in Functions.
12. File Manipulations.
13. Data Sorting (both number and alphabets).
14. Worksheet Preparation.
15. Drawing Graphs.
16. Usage of Auto Formatting.

POWER POINT

17. Inserting Clip arts and Pictures.
18. Frame movements of the above.
19. Insertion of new slides.
20. Preparation of Organisation Charts.
21. Presentation using Wizards.
22. Usage of design templates.

ACCESS

23. Create a data base
24. Execute queries
25. Insert, delete,modify

Total No. of hrs. needed to complete the Lab: 30

HBTA13002 **TAMIL II** **3 0 0 3**

நோக்கம்:

- தமிழ்இலக்கியவரலாற்றில்சிற்றிலக்கியங்கள்பெறும்இடத்தைப்பற்றிஎடுத்துரைத்தல்
- சைவ,
  வைணசமயங்களோடுதமிழ்இலக்கியமரபுகொண்டுள்ளஉறவினைப்போலப்பிறசமயங்களானகிறித்துவ,
  ஸ்லாம்சமயங்களோடும்தமிழ்இலக்கியம்உறவுகொண்டுவிளங்குவதனைஎடுத்துரைத்தல்.
- காப்பியமரபினைஎடுத்துரைத்துஒருசிலசிறுகாப்பியங்களைப்பயிற்றுவித்தல்
- அடிப்படைஇலக்கணத்தைப்பயிற்றுவித்தல்

இரண்டாம்பருவம் – தமிழ்த்தாள் 2

அலகு – 1

1. சிற்றிலக்கியவரலாறு
2. கிறித்துவஇலக்கியவரலாறு
3. இஸ்லாமியஇலக்கியவரலாறு

அலகு – 2

1. நந்திக்கலம்பகம்
2. முத்தொள்ளாயிரம்
3. தமிழ்விடுதூது (36 கண்ணிகள்)

அலகு – 3

1. திருக்குற்றாலக்குறவஞ்சி (குறத்திமலைவளம்கூறுதல்)
2. முக்கூடற்பள்ளு (நாட்டுவளம்)
3. இயேசுபிரான்பிள்ளைத்தமிழ் (செங்கீரைப்பருவம்முதல் 5 செய்யுட்கள்)

அலகு – 4

1. நளவெண்பா (கலிநீங்குகாண்டம்)
2. சீறாபுராணம் (மானுக்குப்பிணைநின்றபடலம்)

அலகு – 5

1. இலக்கணக்குறிப்பு: உவமைத்தொகை, பண்புத்தொகை, உம்மைத்தொகை, வேற்றுமைத்தொகை, வினைத்தொகை, இருபெயரொட்டுப்பண்புத்தொகை, அன்மொழித்தொகை…
2. ஒருபொருள்குறித்தபலசொல், பலபொருள்குறித்தஒருசொல்
3. ஒருமைபன்மைமயக்கம், பிறமொழிச்சொற்களைநீக்குதல், அகரவரிசைப்படுத்துதல்

மேற்பார்வைநூல்கள் :

1. சென்னைப்பல்கலைக்கழகவெளியீடு – 2013
2. பொதுஇலக்கணம்

Total no of Hrs: 45

HBHI13002 **HINDI II** **3 0 0 3**

OBJECTIVES:

- Famous ancient and modern poets from the Hindi literature are prescribed
- Navrasas and meters are taught
- To keep with latest trends in modern Hindi, Computer applications in Hindi, provisions of official language Act etc are included

UNIT I (Poetry, Hindi computing ,alankar) **9 Hrs**

1. Poetry Manu Ki chintha – kaviparichay, annotation, summary, Madhushala and kabirdhas , two padhya only
2. 2. Alankaaranupras, and upma only

UNIT II **9 Hrs**

1.PoetrySurdas (two padh only), kaviparichay, annotation , Kaikeyikapaschatap

2. Utprekshaalankar

UNIT III **9 Hrs**

1. Meerabai only only one padya
2. Kaamkajihindi, concept of official language, and hindi computing theory

UNIT IV **9 Hrs**

1. Jugnu ,summary & meaning annotation
2. Hin di software packages,

UNIT V **9 Hrs**

1. Kaviparichay
2. Kabirdas, MeerabaiMythili saran gupta
3. Jaishankar Prasad
4. Sleshaalankar.

Total No of Hrs :45

TEXT BOOK:

1.Dakshin Bharat hindipracharasabha, *KavyaKusum- 3*

REFERENCES:

1.Murali Manohar&vidhyanilaya,*Ras Chand Alankar*

2.Hareeshvishwavidyalayprakashan, agra, *Kaamkajihindi and hindi computing*

HBFR13002 **FRENCH II** **3 0 0 3**

UNIT - 1

Cultiver ses relations

UNIT - 2 **9 Hrs**

Découvrir le passé

UNIT - 3 **9 Hrs**

Entreprendre

UNIT - 4 **9 Hrs**

Prendre des décisions

UNIT - 5 **9 Hrs**

Faire face aux problems and S' evader **9 Hrs**

Total No of Hrs :45

TEXT BOOK:

Authors : Jacky Girardet, Jacques Pécheur

Available at : Goyal Publishers Pvt Ltd 86, University Block Jawahar Nagar

New Delhi – 110007. Tel : 011 – 23858362 / 23858983

HBEN13002 ENGLISH FOR SPECIAL PURPOSE – II 3 0 0 3

OBJECTIVES:

- To bring an awareness of using prepositions to the L2 learners
- To emphasize the necessity of listening
- To make the students write correct English
- To do a mind mapping
- To make them give technical and scientific interpretation

UNIT I 9 Hrs

Focus on Language :Prepositions and prepositional phrases –infinitives, gerunds, participles-phrasal verbs – connectives and modifiers –nominal compounds-if clauses-SVOCA – Common errors – idioms.

UNIT II 9 Hrs

Biography :Short Answer note making answering inferential questions – Paragraph writing Summarizing - .transfer the text into dialogue

UNIT III 9 Hrs

Listening: Define listening-difference between listening and hearing –impediments for listening –types -listening comprehension –thumb rules for a good listening-active and passive listening-Speech note-taking before discussion –summing up

UNIT IV 9 Hrs

Writing: Avoid Redundancy – using one word – sequencing the jumbled sentences and paragraphs – titling – interpreting table chart, graph – developing story from hints and picture – letter writing – asking for quotations – placing order – application for training – jobs application preparing a C.V.

Practicals

UNIT V 9 Hrs

Listening & Writing : Dictacomp –short paragraphs and dialogue followed by questions through audio–and video followed by questions – note taking before discussion – Writing definitions and describing an object / Picture report writing on an accident / training undergone / a visit, writing e-mail.

Total No of Hrs:45

TEXTBOOKS:

1. BEC Preliminary – OUP(based on BEC Prelim)
2. Vignettis – ed.Dr.P.N. Ramani – New Century books.

REFERENCES:

1. Rev. Francis Sounderarajan,*Speaking and writing for effective business communication*
2. Ashraf Rizvi , *Effective Technical Communication* ,Tata McGraw Hill.
3. S.Jagadeesan , *Portrait in prose*, (An Anthology orient Longman of Biographical Sketches)

HBMA13A02 **MATHEMATICS II** **3 1 0 4**

OBJECTIVES :

- Aware about the importance and symbiosis between mathematics and applied sciences
- Use double and triple integrals to find the surface area and volume of a solid region
- To solve equations of tangent planes and normal lines to surfaces

UNIT I **12 Hrs**

INTEGRATION: Basic concepts of Integration –Methods of Integration–Integration by substitution– Integration by parts –Definite integrals –Properties of definite integrals–Problems on finding Area and Volume using single integrals(simpleproblems).

UNIT II **12 Hrs**

MULTIPLE INTEGRALS*:* Double integral in Cartesian and Polar Co-ordinates – Change of order of integration– Triple integral in Cartesian Co-ordinates– Spherical Polar Co-ordinates–Change of variables(simple problems).

UNITIII **12 Hrs**

ORDINARY DIFFERENTIAL EQUATIONS:First order differential equations –Second and higher order linear differential equations with constant coefficients and with RHS of the form:e^{ax},x^n, Sinax,Cos ax, e^{ax}f(x), xf(x) where f(x) is Sinbx or Cosbx–Differential equations with variable coefficients(Euler'sform) (simple problems).

UNIT IV **12 Hrs**

THREE DIMENSIONAL ANALYTICAL GEOMETRY : Direction Cosines and Ratios–Equation of a straightline– Angle between two lines–Equation of a plane– Co-planar lines – Shortest distance between skewlines–Sphere –Tangent plane.

UNIT V **12 Hrs**

VECTOR CALCULUS : Scalar and Vector functions–Differentiation–Gradient, Divergence and Curl–Directional derivatives–Irrotational and Solenoidal fields–Line, Surface and Volume integrals –Green's, Stoke's and Gauss divergence theorems(statementonly) –Verification.

Total No of Hrs:60

TEXTBOOK:

1. Kreyszig ,E(2001) *Advanced Engineering Mathematics* (8^{th} ed.), John Wiley and Sons (Asia) Pvt. Ltd, Singapore.

REFERENCES:

1. Grewal, B,S (2000) *Higher Engineering Mathematics* (35^{th} ed.), Khanna Publishers.
2. John Bird,(2010) *Basic Engineering Mathematics* (5^{th} ed.), Elsevier Ltd.
3. Veerarajan ,T(2002) *Engineering Mathematics for I Yr*. (First Revised ed.), Tata McGraw Hill Publishing Co., New Delhi.
4. Kandasamy,P ,Thilagavathy, K & Gunavathy,K(2000) *Engineering Mathematics Vol. I* (4^{th}Revised ed.) 6.S.Chand & Co., Publishers.

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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA13G03 DOS AND WINDOWS OPERATING SYSTEM 3 0 0 3

OBJECTIVES:

- To be Discuss the Disk Operating System.
- Introduction to Windows Operating System
- Opening windows explorer, Copy, Delete, Move & Paste.
- Features of MS-WINDOWS
- Discussing the types of Networking

UNITI **9Hrs**

Disk Operating System**:**What is DOS, History.Files and Directory,Study of all internal & External commands.Types of files.Configuration of DOS (config. sys)Batch file concept & study of Autoexec.bat file.Booting Procedure of DOS

UNITII **9Hrs**

Introduction To Windows Operating System**:**What are Windows O.S., History, files and Folders?Architecture of windows O.S., Study of windows directories.Basics of windows: Desktop, My computer, Recycle bin, my network places, Quick launch tool bar

UNITIII **9Hrs**

Windows Explorer**:**Opening windows explorer,Copying, pasting, moving, deleting, send to files Controlling and customizing the toolbars ,Using address bar, history list Working with files and folders.

UNIT IV **9Hrs**

Features of MS-WINDOWS**:**GUI, Multitasking, multi-user, network etc.Important files of windows and their locations (For e.g. DLL, INI etc.)**Windows Accessory :**Calculator Character map Notepad, WordPad Paint,System tools and minor troubleshooting using different .ini files, Windows registry files.

UNIT V **9Hrs**

Using Local Networks **:**What is network, E-mail?,Finding computers and files on network Sharing and managing files, folders and printers Adding and sharing Internet connection.

Total No of Hrs:45

TEXT BOOK:

1. Russell A Stultz*Dos 6.22,* BPB Publication

REFERENCES:

1. Paul McFedries (2003)*Teach Yourself VISUALLY Windows 8.1*, Wiley Publisher
2. Ray Duncan (2008) *Advanced MS-Dos Programming*,BPB Publisher

HBCA13G04 **PROGRAMMING IN C** **3 0 0 3**

OBJECTIVES:

- Basic Sturcture Languages.
- To be undrestand Identifiers, Keywords,Variables& Data Types.
- Wiil learn the Control Statements & LOOP Statements.
- To be learn the Array & Pointers Concepts.

UNIT I **9Hrs**

C fundamentals Character set - Identifier and keywords - data types - constants - Variables - Declarations - Expressions - Statements - Arithmetic, Unary, Relational and logical , Assignment and Conditional Operators - Library functions.

UNIT II **9Hrs**

Data input output functions - Simple C programs - Flow of control - if, if-else, while, do-while, for loop, Nested control structures - Switch, break and continue, go to statements - Comma operator.

UNIT III **9Hrs**

Functions -Definition - proto-types - Passing arguments - Recursions. Storage Classes - AutOmatic, External, Static, Register Variables - Multi-file programs.

UNIT IV **9Hrs**

Arrays - Defming and Processing - Passing arrays to functions - Multi-dimension arrays - Arrays and String. Structures - User defined data types - Passing structures to functions - Self-referential structures - Unions - Bit wise operations.

UNIT V **9Hrs**

Pointers - Declarations - Passing pointers to Functions - Operation in Pointers - Pointer and Arrays - Arrays of Pointers - Structures and Pointers - Files: Creating, Processing ,Opening and Closing a data file.

Total No of Hrs:45

TEXT BOOK:

1. Balaguruswamy, E(1990) *Programming in C*(3rd ed.), Tata McGraw-Hill Publishing Company Limited.

REFERENCES:

1. Byron Gottfried & Jitender Chhabra(2010), *Programming with C (Schaum's Outlines Series)*, McGraw Hill Education.
2. K N King(2008), *C Programming*(2nd ed.), W. Norton & Company.

HBCA13L02 PROGRAMMING IN C LAB 0 0 2 2

OBJECTIVES:

- To write programs in C to solve the problems.
- Students should know how to read, write, and debug basic programs using good programming styl
- To implement simple searching and sorting methods

I Summation of Series:

1. Sin(x)
2. Cos(x)
3. Exp(x) (Comparison with built in functions)

II String Manipulation:

1. Counting the no. of vowels, consonants, words, white spaces in a line of text and array of lines
2. Reverse a string & check for palindrome.
3. Substring detection, count and removal
4. Finding and replacing substrings

III Recursion:

1. ${}^{n}P_{r}, {}^{n}C_{r}$
2. GCD of two numbers
3. Fibonacci sequence
4. Maximum & Minimum

IV Matrix Manipulation:

1. Addition & Subtraction
2. Multiplication

V Sorting and Searching:

1. Insertion Sort
2. Bubble Sort
3. Linear Search
4. Binary Search

Total no. of Hrs. needed to complete the Lab : 30

HBCA13L03 **DOS AND WINDOWS LAB** **0 0 2 2**

OBJECTIVES:

- Students will learn various internal and external dos commands
- Students should know how to create, rename and delete folders in Windows OS

1. Booting procedure of DOS.
2. Study of various internal and external commands of DOS.
3. Study of various batch file commands and creation of batch file used in autoexec.
4. Study of redirection and piping concept.
5. Study of Windows O.S.
6. Study of components and accessories of Windows O.S.
7. Study windows Directories, different .ini files & their locations.

Total no. of Hrs. needed to complete the lab : 30

HBCA13GA1 ALLIED II-PAPER –I COMPUTER ORGANIZATION AND DESIGN 3 1 0 4

OBJECTIVES :

- Student will learn the concepts of computer organization for several engineering applications.
- Student will develop the ability and confidence to use the fundamentals of computer organization as a tool in the engineering of digital systems.

UNIT I **12 Hrs**

Number systems - Conversion from one number system to another - compliments - Binary codes - Binary logic - Logic gates - Truth tables.

UNIT II **12 Hrs**

Boolean Algebra - Axioms - Truth table simplification of Boolean function - map method (upto 5 Variables) - Mc-Clausky tabulation method.

UNIT III **12 Hrs**

Sequential logic - RS, JK,D and T Flip flops - Registers -Shift Registers - Counters - Ripple Counters - Synchronous Counter - Design of Counters.

UNIT IV **12 Hrs**

Adders - Subtractors - Decoders - Encoders - Multiplexer - Demultiplexer - Design of Circuits using decoders/Multiplexers - ROM - PLA - Designing circuits using ROMIPLA.

UNIT V **12 Hrs**

Design of ALU -. Design of Status Register - Design of accumulator - Introduction to Computer Design.

Total No of Hrs:60

TEXTBOOK:

1. Mano,M,M(1994) *Digital Logic and Computer Design*, Prentice Hall of India

REFERENCES:

1. Bartee,T,C(1991) *Computer Architecture and logical Design* McGraw Hill,.
2. David A. Patterson & John L. Hennessy(2011), *Computer Organization and Design: The Hardware/Software Interface*(4th ed.), Morgan Kaufmann Publishers Inc.

HBCA13G05 **DATA STRUCTURES** **3 0 0 3**

OBJECTIVES :

- Having successfully completed this course, the student will be able to:
- Choose the data structures that effectively model the information in a problem.
- Select appropriate methods for organizing data files and implement file-based data structures.

UNIT I **9 Hrs**

Introductions and Overview :Introduction, Basic technology,elementary data organization, Data structure, Data structure operation, Notation and Concept of algorithm

UNIT II **9 Hrs**

Array, Records And Pointers Introduction, Linear array ,Representation of linear array in memory, Traversing linear array, Inserting and Deleting,Sorting methods(Selection, bubble, insertion),Searching methods (Binary and linear search)

UNIT III **9 Hrs**

Linked List:Introduction, Linked list, Representation of Linked list in memory, Searching a linked list, Memory allocation, Garbage collection, Insertion and deletion in linked list

UNIT IV **9 Hrs**

Stacks, Queues, Recursion: Introduction, Stacks, Array representation of stacks, Arithmetic expression, Recursion, Queues

UNIT V **9 Hrs**

Tree :Introduction, Terminology of Binary tree, Types of Binary tree, Traversing of binary tree, Header Nodes, Threads

Total No of Hrs : 45

TEXTBOOK:

1.SeymourLipschutz(1986) *DataStructure, Schaum'sOulineSeriesInComputers,*McgrawHill

REFERENCES:

1.Jeanpaul, TremblayPaul & Sorenson, G(2007)*AnIntroductionToDataStructureWithApplication*(2nd ed.), TataMcgrawHill.

2. Narasimha Karumanchi(2011), *Data Structures and Algorithms Made Easy*(2nd ed.),CreateSpace Independent Publishing Platform.

HBCA13G06 **WEB PAGE DESIGNING** **3 0 0 3**

OBJECTIVES:

- Understand the importance of the web as a medium of communication.
- Understand the principles of creating an effective web page, including an in-depth consideration of information architecture.
- Learn the language of the web: HTML and CSS.

UNIT I **9 Hrs**

Introduction to Web Publishing: Web browser,WWW, Webdesign process, Implementation, Maintenance Phases of Website, Web Publishing, HTML Documents: Overview,rules&guidelines, structure of HTML documents, document types.

UNIT II **9 Hrs**

The Markup Tags:HTML, HEAD, TITLE, BODY, Paragraphs,Lists,Formatted&Unformattedtext, Extended quotations,Address, Horizontal rules,Hyperlink, Font(Size,Color), Table, Image(Add, Alignments),CellSpace/ Cellpadding, Frame Set, Options,Form**.** Linking: URL,Mail to anchors, LinkImage**:**Imagesize attributes,aligningimages,alternate textforimages,Background graphics,andBackgroundcolor,External Images, Sounds&Animations.Imagemap,Serverside image map,Clientside imagemap,Inline image.

UNIT III **9 Hrs**

Tables:Table tags, General Table format.Row Span,Colspan, **Frame:**Overviewoframe, Simpleframeexample, Frame targeting, Floating frame,Frame problems. **Form:**Action attribute, Method attribute,Name attribute,Enctype attribute,Complete form syntax,Example.

UNIT IV **9 Hrs**

DHTML:DynamicHTML,Documentobjectmodel,RolloverButtons,MovingobjectswithDHTML,RamificationofDHTML.

UNIT V **9 Hrs**

VB Script: Adding script to document, Inputbox, working with global & local variables, numbers, date&time, operators, arrays, uppercase & lowercase letters**.** Functions, Control statements, if-then-else, Nested if, SelectCase, Looping Statements for-Next, Do-while, Do-Until**,** Java Script Basics: Introduction,Basics, DataTypes & variables, Expressions & Operators.

Total No of Hrs : 45

TEXTBOOK:

1. Thomas A. Powell (1999)*HTML: The Complete Reference*(2nd. Ed), BpbPublication**.**

REFERENCES:

1. Danesh&Tatters (1996) *JAVASCRIPT1.1*(1sted.)SamsnetPublications.
2. Ed. Wilson(2006) *Microsoft VBScript: Step by Step*, Microsoft Press

HBCA13G07 FUNDAMENTALS OF OPERATING SYSTEMS 3 1 0 4

OBJECTIVES:

- Student will learn the general understanding of structure of modern computers
- Student will learn the purpose, structure and functions of operating systems
- Student will learn the illustration of key OS aspects by example

UNIT I **12 Hrs**

Introduction: What is an operating system? Mainframe, desktop, multiprocessor, distributed, clustered, real-time and handheld systems. Operating System Structures,System components, operating system services, system calls, systems programs, system structure, virtual machines.

UNITII **12 Hrs**

Process:Process concept, process scheduling, operations on processes, cooperating processes. Inter process communication. CPU Scheduling:Basic concepts, scheduling criteria, scheduling algorithms, algorithm evaluation.

UNIT III **12 Hrs**

Process Synchronization: The critical section problem, semaphores, classical problemsof synchronization.Deadlocks: Deadlock characterization, methods for handling deadlocks. Deadlock prevention, avoidance and detection.Recovery from deadlocks.

UNIT IV **12 Hrs**

Memory Management: Swapping, contiguous memory allocation, paging, segmentation, segmentation with paging. Virtual Memory: Demand paging, page replacement, location of frames, thrasing.

UNIT V **12 Hrs**

Linux: History, design principles, kernel modules, process management, scheduling,memory management, file systems, input and output, inter process communication, network structure, security.

Total No of Hrs : 60

TEXTBOOK:

1. SilberschatzG.G(2000), *Operating System Concepts*(8th ed.) John Wiley & Sons Inc.

REFERENCES:

1. Dhamdhere(2012), *Operating Systems: A Comcept Based Approach*(3rd ed.), Mcgraw Hill Education.
2. Andrew S. Tanenbaum , *Modern Operating Systems*(4th ed.)
3. Thomas Anderson & Michael Dahlin(2014) , *Operating Systems: Principles and Practice* (2nd ed.)

HBCA13G08 **FINANCIAL ACCOUNTING** **3 1 0 4**

OBJECTIVES:

- To convey sufficient knowledge for an accounting structure,Depreciation accounting analysis.
- Students are expected and able to analyze a company's financial statements and come to a reasoned conclusion about the financial situation of the company.

UNIT I **12 Hrs**

The Accounting structure: Basic accounting concepts and conversions - Accounting equation - Meaning of accounting - Groups interested in accounting information - trial balance, final accounts (emphasis to be given to important adjustments) - Rectification of errors - Suspense account

UNIT II **12 Hrs**

Depreciation accounting - Meaning of depreciation - Methods of providing depreciation - Fixed percentage on original cost - Fixed percentage on diminishing balance (including change in the method of depreciation) Single entry: Definition and salient features Statement of affairs method - Conversion method. Average due date - Account current and investment accounts

UNIT III **12 Hrs**

Branch Accounts: Debtors system - profit and Loss Accounts - Stock and debtors system - Distinction between wholesale profit and retail profit - Independent branch (foreign branch excluded) - Departmental Accounts: Basis for allocation of expenses - Inter departmental transfer at cost or selling price - Treatment of expenses which cannot be allocated.

UNIT IV **12 Hrs**

Hire purchase and Instalment purchase: Meaning and legal position Accounting aspects - Default and re-possession - Hire purchase trading account - Instalment system - Accounting aspect. Sale or Return: Meaning and legal position - Accounting procedure under different circumstances.

UNIT V **12 Hrs**

Partnership Accounts: Section 13 of Indian Partnership Act - Fixed and fluctuating. capital - Final accounts of firms - Admission of a partner - Retirement of a partner - Death of a partner - dissolution of partnership - Insolvency of a partner - (Garner Vs Murray) - Insolvency of all pa tners Gradual realization of assets and piecemeal distribution.

Total No of Hrs : 60

TEXTBOOK:

1. Gupta R.L(2010) *Advanced Accountancy(*13th ed.),S.Chand, Delhi.

REFERENCES:

1. Agarwala A. N. *Higher Science of Accountancy*(1st ed.) KitabMahal,Allahabad.
2. Jam,S,P&Narang,K,L(2012)*Financial Accounting*(2nd ed.), Kalyani Publisher.

HBCA13L04 **DATA STRUCTURES USING C** **0 0 2 2**

OBJECTIVES:

- To make participant learn the fundamental data structures algorithms.
- Describes and implements the algorithms such as stacks, queues, linked lists, trees, searching techniques, sorting techniques, hashing techniques and graphs.

1.Implements PUSH, POP operations of stack using arrays.
2. Implements PUSH, POP operations of stack using pointers.
3. Implement add, delete operations of a queue using arrays.
4. Implement add, delete operations of queue using pointers.
5. Conversion of infix to postfix using stack operations.
6. Posffix expression evaluation.
7. Addition of two polynomials using Arrays and Pointers.
8. Polynomial multiplication using singly linked list.
9. Creation, Insertion and deletion in doubly linked list.
10. Binary tree traversals (inorder, preorder and post order) using linked list and recursion.
11. Non-recursive inorder traversal.
12. Non-recursive preorder traversal.
13. Non-recursive postorder traversal.
14. Depth first search for graphs using recursion
15. Breadth first search for graphs.

Total No of Hrs needed to complete the Lab: 30

HBCA13L05 WEB PAGE DESIGNING (HTML AND DHTML) 0 0 2 2

OBJECTIVES:

- Students will be able to use a variety of strategies and tools to create websites.
- Provides students with an opportunity for "real world" experience designing and developing websites for local community organizations

Create a simple web page

1. Create a page for Ordered list
2. Createawebpagecontainslinkofotherpage&otherarea
3. Create a web page which contains table,frames&image
4. Createawebpagecontainsanimatedimage&text.
5. Create a web page using HTML form tag
6. Use Cascading Style Sheet to create web page

Total No of Hrs needed to complete the Lab : 30

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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA13GA2 ALLIED II-PAPER –II COMPUTER ORGANIZATION AND DESIGN 3 1 0 4

OBJECTIVES :

- Student will learn the concepts of computer organization for several engineering applications.
- Will lean building blocks of Computer Systems.
- To be understand memory management.
- Student will develop the ability and confidence to use the fundamentals of computer organization as a tool in the engineering of digital systems.

UNIT I **12 Hrs**

Building blocks of computer system: Basic building blocks – I/O, Memory, ALU and its components, Control Unit and its functions, Instruction –word, Instruction and Execution cycle, branch, skip, jump and shift instruction, Operation of control registers; Controlling of arithmetic operations

UNIT II **12 Hrs**

Addressing techniques and registers: Addressing techniques – Direct, Indirect, Immediate, Relative, Indexed addressing and paging. Registers – Indexed, General purpose, Special purpose, overflow, carry, shift, scratch, Memory Buffer register; accumulators; stack pointers; floating point; status information and buffer registers.

UNIT III **12 Hrs**

Memory: Main memory, RAM, static and dynamic, ROM, EPROM, EEPROM, EAROM, Cache and Virtual memory.

UNIT IV **12 Hrs**

Interconnecting System components: Buses, Interfacing buses, Bus formats – address, data and control, Interfacing keyboard, display, auxiliary storage devices and printers. I/O cards in personal computers.

UNIT V **12 Hrs**

Introduction to Microprocessors and Microcontrollers: introduction to 8085 micropocesor, examples of few instructions to understand addressing techniques. Difference between microprocessor and microcontrollers.

Total No of Hrs : 60

TEXT BOOK:

1. Andrew S. Tanenbaum(2005) *Structured Computer Organization*(5h ed.),Printice Hall

REFERENCES:

1. William Stallings(2003) *Computer Organization and Architecture*(6th ed.), Pearson.
2. Bartee,T,C(1991) *Computer Architecture and logical Design* McGraw Hill,.
3. David A. Patterson & John L. Hennessy(2011), *Computer Organization and Design: The Hardware/Software Interface*(4th ed.), Morgan Kaufmann Publishers Inc.

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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA13G09 OBJECT ORIENTED PARADIGM AND PROGRAMMING IN C++ 3 0 0 3

OBJECTIVES:

- To prepare object-oriented design for small/medium scale problems.
- To explain class structures as fundamental, modular building blocks
- To understand the role of inheritance, polymorphism, dynamic binding and generic structures in building reusable code

UNIT I **9 Hrs**

Introduction to OOP: Object Oriented Programming, Basic concepts of OOPS,Benefits of OOPs.

UNITII **9 Hrs**

IntroductiontoC++**:**Tokens, Keywords, Identifiers, Datatypes, Constant, Operators, Operator precedence & associatively, I/Ostatements, Structure of C++program, Control statements, Looping statements,Type casting, Arrays, Pointer, References, Structure and Unions, Function, Function Prototype, Call by value,Call by reference, Return by reference, Inline function,Default arguments,Function Overloading.

UNIT III **9 Hrs**

Class&Object: Define Class, Members, Object, Visibilitymodes, Static members, Friend functions Pointer to members & Pointer to objects, Constructors & Destructors. Operator Overloading & Type Conversions: Concept of Operator Overloading, Unary & Binary operator overloading, Rules for Overloading.Type conversions–Basic to Class,Class tobasic Class to Class.

UNITIV **9 Hrs**

Inheritance&Polymorphism**:**ConceptofInheritance,TypesofInheritance,Polymorphism,VirtualClasses,PointertoDerivedclass,Virtualfunctions,RulesforVirtualfunction,PureVirtualfunctions.

UNITV **9 Hrs**

C++I/OSystem:C++Streams,Streamclasses,formattedI/O,Overloading<<.

Total No of Hrs : 45

TEXT BOOK:

1. Balguruswamy, E (2008)*ObjectOrientedProgrammingWithC++* ,(4th ed.) Tata McGraw-Hill Education.

REFERENCES:

1. RichardJohnsonBaugh&MartinKalin(1998) *ObjectOrientedProgrammingInC++*(1st ed.) Prentice Hall
2. Sheild,H(2002) *C++CompleteReference*(4th ed.) , McGraw-Hill Osborne Media

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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA13G10 INTRODUCTION TO RDBMS 3 0 0 3

OBJECTIVES :

- To Understand basic database concepts, including the structure and operation of the relational data model.
- To Construct simple and moderately advanced database queries using Structured Query Language (SQL)

UNIT I **9 Hrs**

Introduction and BasicConcepts: Structure of DBMS, Advantages and Disadvantages of DBMS, Relational Database: attributes & domains, tuples, relations and their schemes, Integrity rules Relational Algebra:basicoperations, additional relational algebraic operations.

UNIT II **9 Hrs**

InteractiveSQL:Oracle & Client-Server Technology Data ,Manipulation in DBMS , The Component Parts of a Two Dimensional Matrix, TheDataTypes ,Creation, Insertion of Dataintotables, Viewing Data in theTables.Deletion Operations, Updating the contents of Tables, Modifying the Structure of Tables, Renaming Tables,Destroying Tables.

UNIT III **9 Hrs**

MoreonSQL: ComputationsonTableData, OracleDualTable, Sysdate OracleFunctions, DataConstraints, GroupingDatafrom Tables,ManipulatingDates,Subquries,Studyoftheclauses:Union,Intersect,Minus,

UNIT IV **9 Hrs**

SQLPerformanceTuning: Indexes ROWID, Views, Sequences IntroductiontoPL/SQL: Introduction, TheGenericPL/SQLBlockOracleTransaction , IntroductiontoCursor&Locks

UNIT V **9Hrs**

Introduction to database objects: Stored Procedures and Functions, Database Triggers

Total No of Hrs : 45

TEXT BOOK:

1. Bipin C. Desai (1997) *AnIntroductionToDatabase Systems*,West Publishing Company

REFERENCES:

1. Ivan Bay ross*Sql,Pl/SqlThe Programming LanguageOf Oracle*(2nd ed.) , Bpb Publications.
2. Gavekar, *Dbms And Rdbms Using Oracle*, Vision publications.

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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA13G11 SOFTWARE ENGINEERING 3 1 0 4

OBJECTIVES:

- To understand the basic concepts of software engineering
- To learnm about software cost estimation
- To design a real time system

UNIT I **12 Hrs**

Introduction to Software Engineering: Definitions - Size Factors - Quality and Productivity Factors - Managerial Issues - Planing a software project : Defining the problem - Developing a Solution Strategy - Planning the Development Process - Planning an Organization structure - Other Planning Activities.

UNIT II **12 Hrs**

Software Cost Estimation: Software cost factors - Software Cost Estimation Techniqes - Staffing-level Estimation - Estimating Software Maintenance Costs - The Software Requirements Specification - Formal Specification Techniques - Languages and Processors for Requirements Specification.

UNIT III **12 Hrs**

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 IV **12 Hrs**

Implementation issues: Structured Coding Techniques - Coding Style - Standards and Guidelines - documentation guidelines -Type Checking - Scoping Rules - Concurrency Mechanisms.

UNIT V **12 Hrs**

Quality Assurance - Walkthroughs and Inspections - Static Analysis - Symbolic Execution - Unit Testing and Debugging - System Testing - Formal Verification: Enhancing Maintainability during Development - Managerial Aspects of Software Maintenance - Source Code Metrics - Other Maintenance Tools and Techniques.

Total No of Hrs : 60

TEXTBOOK:

1. Fairley,R(1997) *Software Engineering Concepts*, Tata McGraw-Hill.

REFERENCES:

1. Pressman,R,S(1997) *Software Engineering*(4th ed.) , McGraw Hill.
2. Stephen Schach(2006), *Software Engineering*(7th ed.) McGraw Hill Education.
3. Len Bass (2010), *Software Engineering*(1st ed.),Pearson Education.

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DEPARTMENT OF COMPUTER APPLICATIONS

HBMG13G01 ENTERPRENEURSHIP DEVELOPMENT 3 0 0 3

OBJECTIVES:

- Understand the process and procedure involved in setting up a small enterprise.
- Acquire the necessary managerial skills required to run a small-scale industry.
- Know the pros and cons in becoming an entrepreneur.

UNIT I **9 Hrs**

Entrepreneur –Meaning – Definition – Characteristics – Functions – Role of Entrepreneurs in the economic development – Classification of entrepreneurs – Factors affecting entrepreneurial growth.

UNIT II **9 Hrs**

Entrepreneurship – Concept – Distinction between Entrepreneur and Entrepreneurship - Entrepreneurship Development Programmes – Objectives - Stages in EDP- Pre-training Stage – Training phase – Post Training – Evaluation and Feedback of EDP.

UNIT III **9 Hrs**

Project Identification - Sources of ideas – Preliminary evaluation and testing of ideas – Constraints - Project formulation – Stages- Feasibility study and Feasibility Report – Selection Criteria.

UNIT IV **9 Hrs**

Project Report - Project Appraisal – Technical – commercial appraisal –Financial appraisal– Sources of finance – Steps to star an industrial unit.

UNIT V **9 Hrs**

Incentives and subsidies of State and Central Govt. – Aims – Backward areas – Industrial Estates –Role of DIC,SISI, TCO in entrepreneurial growth.

Total No of Hrs : 45

TEXT BOOK:

1. Singh,P,N(1986) *Developing Entrepreneurship for Economic Growth*.

REFERENCES:

1. *Guide to Entrepreneurs – Industrial Development* – Govt. of Tamil Nadu – SIPCOT
2. Thierry Burger Helmchen(2012), *Entrepreneurship Born, Made and Educated*, Marina Jozipovic.
3. Thierry Burger Helmchen(2012), *Entrepreneurship Creativity and Innovative Business Models*, Marina Jozipovic.

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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA13L06 **PROGRAMMING IN C++ LAB** **0 0 2 2**

OBJECTIVES:

- to prepare object-oriented design for small/medium scale problems
- Be able to program using more advanced C++ features such as composition of objects, operator overloads, dynamic memory allocation, inheritance and polymorphism, file I/O, exception handling, etc
- Be able to build C++ classes using appropriate encapsulation and design principles.

Write a basic CPP program

1. Using Class
2. Using Constructor
3. Using Friend Function
4. Using Operator Overloading
6. Using Inheritance
7. Virtual Function
8. Using Files

Total no. of Hrs needed to complete the Lab : 30

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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA13L07 **RDBMS LAB** **0 0 2 2**

OBJECTIVES:

- Learn Oracle DDL to define and create a relational database structure.
- Be able to write fairly complex SQL queries to retrieve data from a database with multiple tables.
- Learn Oracle SQL*Plus commands to write interactive queries and format reports.
- Learn the basics of Oracle PL/SQL programming to develop and manage Oracle database applications

I. **SQL BASICS**
   1. DDL – Create,Alter,Drop
   2. DML-Update ,Insert,Delete
   3. DQL-Select

II. **VIEWS**
III. **INTEGRITY CONSTRAINTS** Naming Constraints
IV. **SUB QUERIES**Nested, Complex
V. **SQL FUNCTIONS**Built in functions
VI. **SET OPERATIONS**
VII. **PL/SQL**Factorial ,Fibonacci Series, Using Cursor

Total no. of Hrs. needed to complete the Lab: 30

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DEPARTMENT OF COMPUTER APPLICATIONS

HBMG13L01 **SOFT SKILLS I** **2 0 0 2**

Carrier & Confidence Building

OBJECTIVES:

To improve

- Value system
- Interpersonal skills
- Behaving in corporate culture
- Self awareness/confidence
- Communication skill

UNIT I **6 Hrs**

Creation of awareness of the top companies / different verticals / courses for improving skill set matrix, Industry expectations to enable them to prepare for their carrer – Development of positive frame of mind – Avoiding inhibitions – Creation of self awareness – Overcoming of inferiority / superiority complex.

UNIT II **6 Hrs**

Selection of appropriate field vis-à-vis personality / interest to create awareness of existing industries, Preparation of Curriculum Vitae – Objectives, Profiles vis-à-vis companies.

UNIT III **6 Hrs**

Group discussions: Do's and Don'ts – handling of group discussions – What evaluators look for Interpersonal relationships – with colleagues – clients – understanding one's own behavior – perception by others, How to work with persons whose background, culture, language / work style different from one's, behavior pattern in multi-national offices.

UNIT IV **6 Hrs**

Interview – awareness of facing questions – Do's and Don'ts of personal interview / group interview, Enabling students prepare for different Procedures / levels to enter into any company – books / websites to help for further preparation, Technical interview – how to prepare to face it. Undergoing employability skills test.

UNIT V **6 Hrs**

Entrepreneurship development – preparation for tests prior to the interview – Qualities and pre-requisites for launching a firm.

Total No of Hrs : 30

TEXT BOOKS:

1. R.S. Aggarwal (1989), *Quantitative Aptitude*, S.Chand Publication.
2. Shalini verma (2009), *Soft Skills*, Pearson Publication.

REFERENCES:

1. Shalini verma(2012), *Enhancing employability @ SOFT SKILLS*, Pearson Publication.
2. Kiranmai Dutt, P, Geetha Rajeevan,CLN Prakash(2010), *A Couse in Communication Skills*, Foundation Books Publication.
3. Nira konar(2011), *English Language Laboratories*, PHI Learning Publication.
4. Anandamurugan,S (2011), *Placement Interviews,* Tata McGraw Hill Education Publication.

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DEPARTMENT OF COMPUTER APPLICATIONS

HBMG13001 ENVIRONMENT STUDIES 3 0 0 3

OBJECTIVES:

- Understanding of the human and natural environment
- Demonstrate in-depth understanding of the environment.
- Demonstrate an ability to integrate the many disciplines and fields that intersect with environmental concerns

UNIT I **9 Hrs**

INTRODUTION TO ENVIRONMENTAL STUDIES **:**Definition, Scope and importance – Need for Public awareness – Types of resources – Utilization of forest resources, water resources, Mineral resources, food resources, energy resources and land resources- Dams and their effects on forest and tribal people-conflicts over water- equitable use of resources for sustainable life styles.

UNIT II **9 Hrs**

ECOSYSTEMS AND BIODIVERRSITY **:** Kinds of ecosystems- Structure and functions of an ecosystems- Energy flow within the ecosystem –Productivity- food chains and Trophic Levels- Ecological Pyramids- value of biodiversity – Biodiversity at global, National & local levels – Hot spots of Biodiversity –Threats to biodiversity – Endangered and Endemic species of India – Conservation of Biodiversity.

UNIT III **9 Hrs**

ENVIRONMENTAL POLLUTION :Environmental Pollution, sources, effects-control measures for air pollution, water pollution, Noise pollution, Land pollution, Marine pollution, e-waste pollution,Solid Waste Management- Disaster Management.

UNIT IV **9 Hrs**

ENVIRONMENTAL MANAGEMENTIntroduction - Environmental Management – climate change - population growth – Nuclear Accidents and Holocaust- Human Health and Human Rights- Environmental Ethics- Environmental Legislation- public awareness – Role of information Technology in Environmental & human health

UNIT V **9 Hrs**

CASE STUDIESVisit to a local area to document environmental assets River/forest/grassland/hill/mountain) - Study of common plants, insects, birds- Study of simple ecosystems-pond, river, hill slopes – Visit to a local polluted site (Urban/Rural/ Industrial/ Agricultural)- e-waste hazardous –case study.

Total No of Hrs : 45

TEXT BOOK:

1. Meenambal,T(2009) *Environmental Science and Engineering*, MJP Publishers, Chennai.

REFERENCES:

1. Iftikaruddin,(2006) *Principles of Environmental science and Engineering*', Sooraj Publication.
2. Masters,G(2006) *Environmental Engineering*, New Centurion Book House, New Delhi.
3. Rajagopal, *Environmental Engineering*, Oxford University Press, New Delhi.
4. BinyJoseph(2006) *Environmental Engineering*, Tata McGraw Hills.
5. Rana(2003) *Essentials of Ecology and Environmental Science*, Prentice – Hall of India Private Limited, New Delhi.

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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA13G12 PROGRAMMING IN JAVA 3 0 0 3

OBJECTIVES:

- To understand the concepts of object-oriented, event driven, and concurrent programming paradigms and develop skills in using these paradigms using Java.
- Be exposed to Java specific, Web services Architecture

UNIT I **9 Hrs**

Introduction to Java - Features of Java - Object Oriented Concepts - Lexical Issues - Data Types - Variables - Arrays - Operators - Control Statements.

UNIT II **9 Hrs**

Classes - Objects - Constructors - Overloading method - Access Control- Static and fixed methods - Inner Classes - String Class - Inheritance - Overriding methods - Using super-Abstract class.

UNIT III **9 Hrs**

Packages - Access Protection - Importing Packages - interfaces - Exception Handling - Throw and Throws - Thread - Synchronization - Messaging - Runnable Interface - Inter thread Communication - Deadlock - Suspending, Resuming and stopping threads - Multithreading.

UNIT IV **9 Hrs**

I/O Streams - File Streams - Applets - String Objects - String Buffer - Char Array - Java Utilities - Code Documentation.

UNIT V **9 Hrs**

Networks basics - Socket Programming - Proxy Servers - TCP/IP Sockets - Net Address - URL - Datagrams - Working with windows using AWT Classes - AWT Controls - Layout Managers and Menus.

Total No of Hrs : 45

TEXT BOOK:

1. Naughton, P &Schildt, H(1999) *Java2 The Complete Reference* (3rd ed.),TMH.

REFERENCES:

1. Cay S.Horstmann, Gary Cornell (2000) *Core Java 2 Volume I Fundamentals*(,5th ed.), PHI.
2. Arnold, K & Gosling, J(1996) *The Java Programming Language*(2nd ed.), Addison Wesley.

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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA13G13 DATA COMMUNICATION AND NETWORING 3 1 0 4

OBJECTIVES:

- To introduce the students the functions of different layers
- To understand the layering concepts in computer networks
- Be exposed to the required functionality at each layer
- To have knowledge in different applications that use computer networks

UNIT I **12 Hrs**

Introduction to Data Communication. Network, Protocols & standards and standards organizations - Line Configuration - Topology - Transmission mode - Classification of Network - OSI Model - Layers of OSI Model.

UNIT II **12 Hrs**

Parallel and Serial Transmission – DTE DCE Interface - Modems - Guided Media - Unguided Media - Performance - Types of Error - Error Detection - Error Corrections.

UNIT III **12 Hrs**

Multiplexing - Types of Multiplexing - Multiplexing Application - Telephone system - Project 802 - Ethernet Token Bus - Token Ring

UNIT IV **12 Hrs**

FDDI - IEEE 802.6 - SMUS - Circuit Switching - Packet Switching - Message switching - Connection Oriented and Connectionless services.

UNIT V **12 Hrs**

History of Analog and Digital Network - Access to ISDN - ISDN Layers - Broadband ISDN - X.25 Layers - Packet Layer Protocol - ATM ATM Topology - ATM Protocol.

Total No of Hrs : 60

TEXT BOOK:

1. Behrouz &Forouzan(2001) *Introduction to Data Communication and Networking* (2nd ed.), TMH.

REFERENCES:

1. Jean Wairand (1998) *Communication Networks (A first Course)*(2nd ed.), WCB/ McGraw Hill8.
2. Olivier Bonaventure(2011), *Computer Networking : Principles, Protocols and Practice* ,The Saylor Foundation.
3. Iresh A. Dhotre, Vilas S. Bagad (2013), *Computer Networks An Illustrated Guide to Computer Networking,* Technical Publications.

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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA13G14 **VISUAL PROGRAMMING** **3 0 0 3**

OBJECTIVES:

- Identify the differences between the procedural languages and event driven languages
- Define and modify the properties and methods associated with an object
- Define and implement form objects, including data arrays, control arrays, text boxes, message boxes, dialog boxes,labels,pull down menus, and combo boxes.

UNIT I **9 Hrs**

Customizing a Form - Writing Simple Programs - Toolbox - Creating Controls - Name Property - Command Button - Access Keys - Image Controls - Text Boxes - Labels - Message Boxes - Grid - Editing Tools - Variables - Data Types - String - Numbers.

UNIT II **9 Hrs**

Displaying Information - Determinate Loops - Indeterminate Loops - Conditionals - Built-in Functions - Functions and Procedures.

UNIT III **9 Hrs**

Lists - Arrays - Sorting and Searching - Records - Control Arrays - Combo Boxes - Grid Control - Projects with Multiple forms - Do Events and Sub Main - Error Trapping.

UNIT IV **9 Hrs**

VB Objects - Dialog Boxes - Common Controls - Menus - MDI Forms - Testing, Debugging and Optimization - Working with Graphics.

UNIT V **9 Hrs**

Monitoring Mouse activity .- File Handling - File System Controls - File System Objects - COM/OLE - automation - DLL Servers - OLE Drag and Drop.

Total No of Hrs : 45

TEXT BOOK:

1. Gary Cornell(1999) *Visual Basic 6 from the Ground up*, Tata McGraw Hill.

REFERENCES:

1. Noel Jerke(1999) *Visual Basic 6 The Complete Reference* Tata McGraw Hill .
2. Bryan Newsome(2012), *Beginning Visual Basic*, Wiley India Private Limited
3. Bill Sheldon, Billy Hollis & Rob Windsor (2013), *Professional Visual Basic 2012 and .NET 4.5 Programming*, John Wiley & Sons.

HBCA13L08 PROGRAMMING IN JAVA LAB 0 0 2 2

OBJECTIVES:

- Be familiar with the main features of the Java language
- Develop the ability to solve real-world problems through software development in Java
- Be able to write a Java program to solve a well specified problem;
- Develop efficient Java applets and applications using OOP concept

Applications:

1. Finding area and Perimeter of a circle. Use Buffered Reader class.
2. Substring Removal from a String. Use String Buffer Class.
3. Determining the order of numbers generated randomly using Random Class.
4. Implementation of Point Class for Image manipulation.
5. Usage of Calender Class and manipulation.
6. String Manipulation using Char Array.
7. Database Creation for storing e-mail addresses and manipulation.
8. Usage of Vector Classes.
9. Implementing Thread based applications & Exception Handling.
10. Application using synchronization such as Thread based, Class based and synchronized statements.

Applets:

11. Working with Frames and various controls.
12. Working with Dialogs and Menus.
13. Working with Panel and Layout.
14. incorporating Graphics.
15. Working with Colors and Fonts.

Total no. of Hrs. needed to complete the Lab : 30

HBCA13L09 VISUAL PROGRAMMING LAB 0 0 2 2

OBJECTIVES:

- Introduce the concepts of Visual Programming.
- Familiarize students with the processes involved in long computer programs;
- Give students practice testing and debugging programs more like the ones they can expect to be working with after graduation;

1. Payroll
2. Mark sheet Processing
3. Savings bank account for banking
4. Inventory System
5. Invoice system
6. Library information system
7. Student information system
8. Income tax processing system
9. Electricity bill preparation system
10. Telephone directory maintenance.

Total no. of Hrs. needed to complete the Lab: 30

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DEPARTMENT OF COMPUTER APPLICATIONS

HBMG13L02 SOFT SKILLS II 2 0 0 2

To be organized by the Placement & Training department with the assistance of external agencies.

OBJECTIVES:

The purpose of this is to build confidence and inculcate various Soft skills and to help students to identify and achieve their personal potential

At the end of this training program the participant will be able to,

Explain the concept problem solving

- Outline the basic steps in problem solving
- List out the key elements
- Explain the use of tools and techniques in problem solving
- Discuss the personality types and problem in solving techniques
- By adapting different thinking styles in group and lean environment
- Recognizing and removing barriers to thinking in challenging situations
- Make better decision through critical thinking and creative problem solving

Methodology

The entire program is designed in such a way that every student will participate in the class room activities. The activities are planned to bring out the skills and talent of the students which they will be employing during various in their life.

1. Group activities + individual activities
2. Collaborative learning
3. Interactive sessions
4. Ensure participation
5. Empirical learning

UNIT I **6 Hrs**

Self Introduction – Narration – Current news update – Current Tech update – GD

UNIT II **6 Hrs**

Verbal Aptitude Test I – odd man out series – GD I – Mock Interview I

UNIT III **6 Hrs**

Verbal Aptitude Test II – Resume Writing- Mock Interview II – reading comprehension

UNIT IV **6 Hrs**

GD III – Numbers – Height and distance – directions – permutation and combination – odd man out – problem on ages.

UNIT V **6 Hrs**

Mock Interview III – ratio and proportion – clocks – HCF and LCM – Time and work – profit and loss – partnership.

Total No of Hrs : 30

TEXTBOOK:

1.Pushpalata and Sanjay kumar(2007), *Communicate or Collpase: A Handbook of Effective Public Speaking, Group Discussions and Interviews*, Prentice-Hall, Delhi.

REFERENCES:

1.Thorpe, Edgar(2003), *Course in Mental Ability and Quantitative Aptitude*, Tata MCGraw-Hill,
2.Thorpe, Edgar(2003), *Test of Reasoning*, Tata MCGraw-Hill,
3.Prasad(2001), H.M, *How to prepare for Group Discussion and Interview*, Tata MCGraw-Hill,
4.Agarwal, R.S(2004), *A Modern Approach to verbal non-Verbal Reasoning*, S.Chand & Co.,
5.Mishra Sunita and muralikrishna(2004), *Communication Skills for Engineers(*1st ed.), Pearson Education

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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA13G15 **COMPUTER GRAPHICS** **3 1 0 4**

OBJECTIVES:

- Gain knowledge about graphics hardware devices and software used.
- Understand the two and three dimensional graphics and their transformations.
- Be familiar with understand clipping techniques.
- Appreciate illumination and color models

UNIT I **12 Hrs**

Introduction to computer Graphics - Video display devices- Raster scan Systems -Random Scan Systems - Interactive input devices - Hard copy devices - Graphics software - Output primitives - line drawing algorithms - initialising lines - line function - circle Generating algorithms.

UNIT II **12 Hrs**

Attributes of output Primitives - line attributes - Color and Grayscale style - Area filling algorithms - Character attributes inquiry functions - Two dimensional transformation - Basic transformation - Composite transformation - Matrix representation - other transformations.

UNIT III **12 Hrs**

Two - dimensional viewing - window- to view port co-ordinate transformation - clipping algorithms - Interactive input methods - Physical input devices - logical classification of input devices - interactive picture construction methods.

UNIT IV **12 Hrs**

Three - dimensional concepts - Three dimensional display methods - parallel Projection - Perspective Projection - Depth Cueing - Visible line and surface identification - Three dimensional transformation.

UNIT V **12 Hrs**

Three dimensional viewing - Projection - Viewing transformation - implementation of viewing operations - Hidden surface and Hidden line removal - backface removals.

Total No of Hrs : 60

TEXT BOOK:

1. Hearn, D &Baker, M,P (1997) *Computer Graphics* - Prentice Hall of India .

REFERENCES:

1. David F Rogers, *Procedural Elements for Computer Graphics*, Tata McGraw Hill,
2. Neuman & Sproul, *Principles of Interactive Computer Graphics*, Tata McGraw Hill.
3. Govil Shalin, *Principles of Computer Graphics*, PAI, Springer.
4. Kanitkar Yashwant(2008) *Let Us C*(1st ed), BPB Publishing.
5. Steven Harrington, *Computer Graphics*, Tata McGraw Hill.
6. Zhigand Xiang, Roy Plastock, Schaum□s Outlines, *Computer Graphic(2nd ed)*, Tata McGraw Hill.

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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA13G16 **LINUX OPERATING SYSTEM** **3 0 0 3**

OBJECTIVES:

- To be aware of the evolution of the Operating System
- To have an exposure to Linux and Windows 2000 operating systems
- To enable the students to install and use Linux distribution
- To train the students in the Linux desktop usage and some commonly used programs

UNIT I **9 Hrs**

Introduction:Comparison of various operating systems,Advantages of Linux, Flavours of Linux, Installation notes, Linux Loader, Linux kernel.File System and Devices:File System concept,Concepts of Devices,Various kinds of Hardware: - Hard disk, floppy disk drivers, CD-ROM drives, Mouse,Memory devices, Printer devices,File systems: - mount, fsconf and other related commands

UNIT II **9 Hrs**

Linux commands and Utilities: Study of following commands and utility :Adduser, alias, at, atrm, banner, batch, bind, cat, cd, chmod, chown, chroot,cp, cpio, dc, dd, df, dir, du, dump, ex, fax, fc, fdformat, file,find, finger, grep, gunzip, gv, gvim, gzip, halt, hostname, ifconfig, kill, ln, locate, login, logout, look, lpc, lpd, lp, rm, ls, mail, man, mcopy, mdel, mdir, mformat, mkdir,mlabel, more, mount, mt, mv, netcft, netstat, passwd, ping, ps, pwd, quota, quotaoff, rm, rmdir, route, set, shut down, sort, stat, strings, su, tar, tree, umount, unzip, vdir, vi, view, wc, who, whoami, xload, xset, zip.

UNIT III **9 Hrs**

System Administration :Performing system maintenance,Communication commands :- write, wall, talk, mesg, motd,Pre-login Message,Managing software with RPM :- Installing, Uninstalling, Upgrading,Managing users and Groups with linuxconf and control – panel: - Adding users, changing user-passward, removing users

UNIT IV **9 Hrs**

Backup and Restore: Backup Strategies and Operations, Restoring files .Introduction to Shell Programming Basics,ControlStatements,shell variables ,filters, Interrupt, parsing options, file generation

UNIT V **9 Hrs**

Network configuration for Linux:Introduction, Configuration examples for Linux, DHCP configuration for Linux, PPP configuration for Linux, Dynamic reconfiguration and tuning for Linux.

Total No of Hrs : 45

TEXT BOOK:

1. BillBall&DavidPitts*RedHatLinux7Unleashed*,TechmediaSAMSPublication.

REFERENCES:

1. EviNemeth,GarthSnyder,ScottSeebass,TrentR.Hein*UNIXSystemAdministrationHandbook (3rd. ed)*, PersonEducationAsia(LPE).
2. Mark G. Sobell(2013), *Practical Guide to Linux Commands Editor*, Pearson.
3. Goodlife(2006) , *Running Linux*(5th ed.), Om Books Publisher.

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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA13G17 **MOBILE COMMUNICATION** **3 1 0 4**

OBJECTIVES:

- Understand and identify requirements issue limitation parameters and components in computing
- To understand the rationale for the solution adopted in existing or emerging systems
- To participate in the development and proposal of future systems

UNIT I **12 Hrs**

IntroductiontoCellularMobileSystems:Introduction,BasicCellularSystem,PerformanceCriteria,OperationofCellular System,PlanningaCellularSystem,AnalogCellularSystem,DigitalCellularSystem

UNIT II **12 Hrs**

WirelessCommunication:Application,History,MarketforMobileCommunication,Someopenresearchtopics,Simplifi edreferencemodel

UNIT III **12 Hrs**

Mediumaccesscontrol:MotivationforspecializedMAC,SDMA,FDMA,TDMA,CDMA,GSM

UNIT IV **12 Hrs**

WirelessLAN:InfraredVsradiotransmission,InfrastructureandalongNetwork1.3IEEE 802.11,HIPERLAN,Bluetooth

UNIT V **12 Hrs**

MobileNetworkLayerandTransport Layer:MobileIP,TraditionalTCP,ClassicalTCPImprovements.

Total No of Hrs : 60

TEXT BOOK:

1. JochenSchiller(2013) *MobileCommunications*(2nd ed.), PearsonEducation

REFERENCES:

1. WilliamC.Y.Lee(1995)*MobileCellularTelecommunications*(2nd ed.) , Mc-Graw- Hill.
2. Nitesh Bansal (2013), *Mobile Communication Systems*(1st ed.), Nandu Printers & Publishers Pvt. Ltd
3. Pattnaik Prasant Kumar & Mall Rajib(2012), *Fundamentals of Mobile Computing* , PHI

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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA13G18 **MULTIMEDIA SYSTEMS** **3 1 0 4**

OBJECTIVES:

- Introduce students to the design issues related to multimedia systems.
- Explain the interaction problems introduced by multimedia(e.g. Compression and synchronization)
- Students will be able to handle image files and can also create animations

UNIT I **12 Hrs**

Multimedia System: Multimedia Elements, Multimedia ,Application, Multimedia System Architecture

UNIT II **12 Hrs**

DataCompression: TheNeed For Data Comression, Types Of Data Comression, Run Length Encoding, Huffman Coding, JPEG, CCITTH.261 VideoCoding, MPEGI &II,DVI

UNITIII **12 Hrs**

Image And Graphics: Principles Of Raster Graphics, Computer Visual Display Concept, Resolution Color & Palettes, Refresh Rates, Digital Image Representation, Digital Image Formats, Image Scanner Principles, File Formats; Bmp, Jpeg,Tiff,Avi,Wav, Mp3

UNIT IV **12 Hrs**

Animation And SpecialEffects: Animation Principles, SurveyOfAnimation Tools Video Technologies:Analog Video Principles,Ccd Camera,Broadcast Standards,Recording Formats & Standards, Digital Video Principles

UNIT V **12 Hrs**

Storage & Retrival Technologies: Magnetic Media Technologies, Cd_Rom & Its Standards, Magnetic Optical Disk Principles,Ide,Scsi, Usb Interface To Storage Devices

Total No of Hrs: 60

TEXTBOOK:

1. Naleigh&KiranThakrar, P, K *MultimediaSystemDesign*

REFERENCES:

1. ScottFisher *Multimediaauthoring Building&DevelopingDocuments*
2. RalfSteinmetz,&KlaraNashtedt*MultimediaComputingCommunication&Application*
3. JohnF.KoegelBuford, MultimediaSystem
4. S.Gokul*MultimediaMagic*Bpb Publication

HBCA13L10 **LINUX LAB** **0 0 2 2**

OBJECTIVES:

- To demonstrate the process, memory, file and directory management issues under the LINUX operating system
- To introduce LINUX basic commands
- To make students how to make simple programs in LINUX and administrative task of LINUX

1. Prime Test.
2. Palindrome Test.
3. Fibonacci Series generation.
4. Armstrong No Test.
5. Solving Quadratic Equation.
6. Menu Driven Shell Script - Sort with various options.
7. User friendly change of modes (chmod).
8. Usage of case structures.
9. Process Scheduling:FCFS,SJF,Priority,Round Robin
10. Interprocess communications using message Queues & Pipes.
11. Using Pipes to calculate NCR.
12. Applications for functions, Procedures & Macros.

Total no. of Hrs. needed to complete the Lab : 30