BHARATHIAR UNIVERSITY: COIMBATORE-641 046

B.Sc. CS/IT/CT/SS/MM/CSA &BCA

(For the students admitted from the academic year **2016-2017** and onwards)

SCHEME OF EXAMINATION - CBCS PATTERN

Part	Study components	Course Title	Ins. Hrs/week	Dur. Hrs.	CIA	Marks	Total Mark	Credit
					Examinations			
	Semester I							
I	Language – I		6	3	25	75	100	4
II	English – I		6	3	25	75	100	4
III	Core 1: Computing Fundamentals and C Programming		4	3	25	75	100	4
III	Core 2: Digital Fundamentals and Architecture		4	3	25	75	100	4
III	Core Lab 1: Programming Lab – C		3	3	40	60	100	4
III	Allied 1: &&		5	3	25	75	100	4
IV	Environmental Studies #		2	3	-	50	50	2
	Semester II							
I	Language – II		6	3	25	75	100	4
II	English – II		6	3	25	75	100	4
III	Core 3: C++ Programming		5	3	25	75	100	4
III	Core Lab 2: Programming Lab – C++		4	3	40	60	100	4
III	Core Lab 3: Internet Basics		2	3	20	30	50	2
III	Allied 2: &&		5	3	25	75	100	4
IV	Value Education – Human Rights #		2	3	-	50	50	2
	Semester III							
III	Core 4: Data Structures		6	3	25	75	100	4
III	Core 5: Java Programming		6	3	25	75	100	4
III	Core Lab 4: Programming Lab – Java		5	3	40	60	100	4
III	Allied 3: &&		6	3	25	75	100	4
IV	Skill based Subject 1 - &&		5	3	20	55	75	3
IV	Tamil @/ Advanced Tamil (OR) Non-major elective-1 (Yoga for Human Excellence)# / Women's Rights#		2	3	-	50	50	2
	Semester IV							
III	Core 6: System Software and Operating System		6	3	25	75	100	4
III	Core 7: Linux and Shell Programming		6	3	25	75	100	4
III	Core Lab 5: Linux and Shell Programming Lab		6	3	40	60	100	4
III	Allied 4: &&		6	3	25	75	100	4

IV	Skill based subject 2 (lab) &&	4	3	30	45	75	3
IV	Tamil @/ Advanced Tamil (OR) Non-major elective-II (General Awareness) #	2	3	-	50	50	2
	Semester V						
III	Core 8: RDBMS & Oracle	6	3	25	75	100	4
III	Core 9: Visual Basic	6	3	25	75	100	4
III	Core Lab 6: Programming Lab – VB & Oracle	6	3	40	60	100	4
III	Elective 1 &&	6	3	25	75	100	4
IV	Skill based Subject 3: &&	6	3	20	55	75	3
	Semester VI						
III	Core 10: Graphics & Multimedia	5	3	25	75	100	4
III	Core 11: Project Work Lab %%	5	3	-	200	200	8
III	Core Lab 7: Programming Lab – Graphics & Multimedia	6	3	40	60	100	4
III	Elective II &&	5	3	25	75	100	4
III	Elective III &&	5	3	25	75	100	4
IV	Skill based Subject 4 (lab) &&	4	3	30	45	75	3
V	Extension Activities	-	-	50	-	50	2
	Total					3500	140

@ No University Examinations. Only Continuous Internal Assessment (CIA)

No Continuous Internal Assessment (CIA). Only University Examinations.

%% **see Guidelines for Project Work.**

Subject	Course — B.Sc. COMPUTER TECHNOLOGY
Allied-1	Mathematical Structures for Computer Science
Allied-2	Discrete Mathematics
Allied-3	E-Commerce
Allied-4	Business Accounting
Elective- I	Mobile Computing / Distributed Computing / **PYTHON Programming**
Elective- II	Middleware Technologies / Animation Techniques / Computer Installation & Servicing
Elective- III	Data Mining / Embedded Systems / **Internet of Things (IoT)**
Skill-1	Data Communication & Networks
Skill-2 (lab)	Network Lab
Skill-3	Network Security & Management
Skill-4 (lab)	Network Security Lab

SEMESTER-1

BHARATHIAR UNIVERSITY, COIMBATORE-641 046.
UNDER GRADUATE DEGREE PROGRAMMES (CBCS Semester Pattern)
(For the students admitted during the academic year 2017 -2018 onwards)
பாடத்திட்டம் - முதற்பருவம் - பகுதி - I - தாள் - I
(2017-2018ஆம் கல்வியாண்டு முதல் சேர்வோர்க்குரியது)
(செய்யுள், சிறுகதை, இலக்கிய வரலாறு, இலக்கணம், மொழிபெயர்ப்பு)

அலகு - I

1. பாரதியார்   - புதுமைப் பெண்
2. பாரதிதாசன்   - அழகின் சிரிப்பு - தமிழ்
3. கண்ணதாசன்   - காலக்கணிதம்
4. சுரதா   - சிக்கனம்
5. காசி ஆனந்தன்   - பெருமூச்சு
6. இன்குலாப்   - மனுசங்கடா நாங்க மனுசங்கடா

அலகு - II

7. அப்துல் ரகுமான்   - ஒப்பில்லாத சமுதாயம்
8. அறிவுமதி   - நட்புக்காலம்
9. நா.முத்துக்குமார்   - அக்காவின் கடிதம்
10. தாமரை   - ஒரு கதவும் கொஞ்சம் கள்ளிப்பாலும்
11. ஈரோடு தமிழன்பன் - ஹைகூக் கவிதைகள் (10 கவிதைகள்)
12. நாட்டுப்புறப் பாடல்கள் - தெம்மாங்கு பாடல், தொழில் பாடல்

அலகு - III

❖ புதுமைப்பித்தன் முதல் இறையன்பு வரை -சிறுகதைத் தொகுப்பு -NCBH,வெளியீடு.

அலகு - IV - இலக்கிய வரலாறு

❖ புதுக்கவிதை, ஹைகூக் கவிதை - தோற்றமும் வளர்ச்சியும்

❖ படிமம், குறியீடுகள் - பற்றிய விளக்கங்கள்.

❖ சிறுகதையின் தோற்றமும் வளர்ச்சியும்.

இலக்கணம் :

1. மொழித்திறன், சொற்பொருள் வேறுபாடு, ர,ற,ல,ள,ழ,ந,ண,ன வேறுபடுத்தி அறியும் முறை.
2. தொடரில் வழுஉச் சொற்களை நீக்கி எழுதுதல், மரபுப் பிழையை நீக்கி எழுதுதல்
3. உண்டு, உள, உளது, அன்று, அல்ல, அல்லன், அல்லர் பயன்பாடு ஓர், ஒரு பயன்பாடு
4. ஒருமை, பன்மை தொடரில் அமையும் விதம்.

அலகு - V - மொழிபெயர்ப்புப் பகுதி

பொதுப்பகுதி, அலுவலகப் பகுதி, ஆங்கிலத்திலிருந்து தமிழில் மொழிபெயர்த்தல்.

BHARATHIAR UNIVERSITY : COIMBATORE – 641 046
Part I – Hindi Language
For Under-graduate Degree Programmes
(For the students admitted during 2017-2018 onwards)

FIRST SEMESTER – Paper I
(Prose, Non-detailed, Grammar & Translation, Comprehension)

1.   PROSE : NUTHAN GADYA SANGRAH
         Editor : Jayaprakash
         (Prescribed Lessons – only 6)
         Lesson 1 – Bharathiya Sanskurthi
         Lesson 3 – Razia
         Lesson 4 – Makreal
         Lesson 5 – Bahtha Pani Nirmala.
         Lesson 6 – Rashtrapitha Mahathma Gandhi
         Lesson 9 – Ninda Ras.

         Publisher : Sumitra Prakashan
         Sumitravas, 16/4, Hastings Road,
         Allahabad – 211 001.

2.   NON DETAILED TEXT : KAHANI KUNJ
         Editor : Dr. V.P. Amithab.
         (Stories 1-6 only)
         Publisher : Govind Prakashan
         Sadhar Bagaar, Mathura,
         Uttar Pradesh – 281 001.

3.   GRAMMAR : SHABDHA VICHAR ONLY
         (NOUN, PRONOUN, ADJECTIVE, VERB, TENSE, CASE ENDINGS)
         Theoretical & Applied.
         Book for Reference   :   Vyakaran Pradeep by Ramdev
         Publisher   :   Hindi Bhavan,
                                                    36, Tagore Town
                                                    Allahabad – 211 002.

4.   TRANSLATION : English – Hindi only.
         ANUVADH ABHYAS – III
         (1-15 lessons only)
         Publisher   :   DAKSHIN BHARAT HINDI PRACHAR SABHA
                                                    CHENNAI – 17.

5.   COMPREHENSION   :   1 Passage from ANUVADH ABHYAS – III (16-30)
                                                    DAKSHIN BHARATH HINDI PRACHAR SABHA
                                                    CHENNAI-17.

BHARATHIAR UNIVERSITY,COIMBATORE-641 046

PART – I – FRENCH

(For the students admitted during the academic year 2018-2019 and onwards)

UG - REGULAR & NIFT

(From 2018-2019 onwards)

(For all BA/B.Sc./B.Com/B.Com CA/BBM / NIFT courses)

| **SEMESTER I** | **PAPER I** |

Prescribed text   : **LATITUDES I**
Units   : 1 – 4
Authors   : Régine Mérieux
                      Yves Loiseau
Available at   : Goyal Publishers Pvt Ltd
                      86, University Block
                      Jawahar Nagar (Kamla Nagar)
                      New Delhi – 110007
Tel   : 011 – 23852986 / 9650597000

Question Paper Pattern
Semester I

Maximum Marks: 75   Time: 3 hrs.
(All questions to be set only from the prescribed text)

Section A (10)

1. Choisissez la meilleure réponse: (10X1=10)

Section B (25)

2. Dites vrai ou faux (5X1=5)
3. Traduisez les textes suivants en anglais:(4/5) (4X5=20)

Section C (40)

4. Compréhension (5x1=5)
5. Exercices de grammaire:(5X5=25) **(either/or)**
6. Remplissez le dialogue:(5X1=5)
7. Associez :(5X1=5)

Bharathiar University – Coimbatore
Part II English-Semester I
(For the students admitted from the academic year 2016-17 and onwards)

Prescribed Text: AROMA
Board of Editors
Publishers: New Century Book House(p)Ltd.,
41B,SIDCO Industrial Estate
Chennai-98.

Unit I:-Poetry
1.Where the mind is without Fear-Rabindranath Tagore
2. The Road not Taken-Robert Frost
3. The Village Schoolmaster-Oliver Goldsmith

Unit II: Prose
1. Spoken English and Broken English-G.B.Shaw
2. How to Avoid Foolish Opinion Bertrand Russell
3. At School –M.K. Gandhi

Unit III: Short Stories
1.Lalajee-Jim Corbett
2.A Hero-R.K.Narayan
3. A Day's Wait-Hemingway

Unit IV: One Act Plays
1.Refund-Fritz Karinthy
2. The Never Never Nest-Cedric Mounte

Unit V: Grammar and Composition
1. Parts of Speech
 Noun
Pronoun
Adjective
Verb
Adverb
Preposition
2. Reading Comprehension(a Passage with 5 questions)
Question Paper Pattern: Existing Pattern is to be followed.

CORE SUBJECTS

Course	BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)
Effective from	2016-2017 and Onwards
Semester	I
Subject	CORE 1 : COMPUTING FUNDAMENTALS AND C PROGRAMMING

Subject Description: This subject deals with the Computer fundamentals and the concepts of C programming language.

Goal: To learn about the Computer fundamentals and the C programming language concepts.

Objective: On successful completion of this subject the students have the programming ability in C Language.

UNIT I: Fundamentals of Computers : Introduction – History of Computers-Generations of Computers- Classification of Computers-Basic Anatomy of a Computer System-Input Devices-Processor-Output Devices-Memory Management – Types of Software- Overview of Operating System- Programming Languages-Translator Programs-Problem Solving Techniques - Overview of C.

UNIT II: Overview of C - Introduction - Character set - C tokens - keyword & Identifiers - Constants - Variables - Data types - Declaration of variables - Assigning values to variables - Defining Symbolic Constants - Arithmetic, Relational, Logical, Assignment, Conditional, Bitwise, Special, Increment and Decrement operators - Arithmetic Expressions - Evaluation of expression - precedence of arithmetic operators - Type conversion in expression – operator precedence & associativity - Mathematical functions - Reading & Writing a character - Formatted input and output.

UNIT III: Decision Making and Branching: Introduction – if, if….else, nesting of if …else statements- else if ladder – The switch statement, The ?: Operator – The goto Statement. Decision Making and Looping: Introduction- The while statement- the do statement – the for statement-jumps in loops. Arrays – Character Arrays and Strings

UNIT IV: User-Defined Functions: Introduction – Need and Elements of User-Defined Functions- Definition-Return Values and their types - Function Calls – Declarations – Category of Functions- Nesting of Functions - Recursion – Passing Arrays and Strings to Functions - The Scope, Visibility and Lifetime of Variables- Multi file Programs. Structures and Unions.

UNIT V: Pointers: Introduction-Understanding pointers-Accessing the address of a variable-Declaration and Initialization of pointer Variable – Accessing a variable through its pointer-Chain of pointers- Pointer Expressions – Pointer Increments and Scale factor- Pointers and Arrays- Pointers and Strings – Array of pointers – Pointers as Function Arguments- Functions returning pointers – Pointers to Functions – Pointers and Structures. File Management in C.

TEXT BOOK:

1. E Balagurusamy: Computing Fundamentals & C Programming – Tata McGraw-Hill, Second Reprint 2008.

REFERENCE BOOK:

1. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson, 2002.

2. Henry Mullish & Hubert L.Cooper: The Sprit of C, Jaico, 1996.

Course	BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)
Effective from	2017-2018 and Onwards
Semester	I
Subject	CORE 2: DIGITAL FUNDAMENTALS AND COMPUTER ARCHITECTURE

Subject Description: This subject deals with fundamentals of digital computers, Microprocessors and System architecture.

Goal: To learn about Computer Fundamentals and its Architecture.

Objective: On successful completion of this subject the students should have Knowledge on Digital circuits, Microprocessor architecture, and Interfacing of various components.

UNIT I: Number System and Binary Codes: Decimal, Binary, Octal, Hexadecimal – Binary addition, Multiplication, Division – Floating point representation, Complements, BCD, Excess3, Gray Code. Arithmetic Circuits: Half adder, Full adder, Parallel binary adder, BCD adder, Half subtractor, Full subtractor, Parallel binary subtractor - Digital Logic: the Basic Gates – NOR, NAND, XOR Gates.

UNIT II: Combinational Logic Circuits: Boolean algebra – Karnaugh map – Canonical form 1 – Construction and properties – Implicants – Don't care combinations - Product of sum, Sum of products, simplifications. Sequential circuits: Flip-Flops: RS, D, JK, and T - Multiplexers – Demultiplexers – Decoder Encoder – shift registers-Counters.

UNIT III: Input – Output Organization: Input – output interface – I/O Bus and Interface – I/O Bus Versus Memory Bus – Isolated Versus Memory – Mapped I/O – Example of I/O Interface. Asynchronous data transfer: Strobe Control and Handshaking

UNIT IV: Priority Interrupt: Daisy- Chaining Priority, Parallel Priority Interrupt. Direct Memory Access: DMA Controller, DMA Transfer. Input – Output Processor: CPU-IOP Communication.

UNIT V: Memory Organization: Memory Hierarchy – Main Memory- Associative memory: Hardware Organization, Match Logic, Read Operation, Write Operation. Cache Memory: Associative, Direct, Set-associative Mapping – Writing into Cache Initialization.

TEXT BOOKS:

1. Digital Electronics Circuits and Systems, V.K. Puri, TMH.

2. Digital principles and applications, Albert Paul Malvino, Donald P Leach, TMH, 1996.

3. Computer System Architecture -M. Morris Mano , PHI.

REFERENCE BOOKS:

1. Computer Architecture -M. Carter, Schaum's outline series, TMH

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**I**
Subject	**CORE LAB 1: PROGRAMMING LAB – C**

1. Write a C program to find the sum, average, standard deviation for a given set of numbers.

2. Write a C program to generate n prime numbers.

3. Write a C program to generate Fibonacci series.

4. Write a C program to print magic square of order n where n > 3 and n is odd.

5. Write a C program to sort the given set of numbers in ascending order.

6. Write a C program to check whether the given string is a palindrome or not using pointers.

7. Write a C program to count the number of Vowels in the given sentence.

8. Write a C program to find the factorial of a given number using recursive function.

9. Write a C program to print the student_s Mark sheet assuming roll no, name, and marks in 5 subjects in a structure. Create an array of structures and print the mark sheet in the university pattern.

10. Write a function using pointers to add two matrices and to return the resultant matrix to the calling function.

11. Write a C program which receives two filenames as arguments and check whether the file contents are same or not. If same delete the second file.

12. Write a program which takes a file as command line argument and copy it to another file. At the end of the second file write the total i)no of chars ii) no. of words and iii) no. of lines.

ALLIED SUBJECTS

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**I**
Subject	**Allied 1:** **MATHEMATICAL STRUCTURES FOR COMPUTER SCIENCE**

Subject Description: This subject deals with mathematical concepts like Matrices, Numerical analysis and Statistical methods for computer science and applications.

Goal: To learn about the mathematical structures for computer based applications

Objective: On successful completion of this subject the students should have

- Understood the concepts of mathematics

- Learnt applications of statistical and numerical methods for Computer Science.

UNIT I: Matrices – Introduction – Determination – Inverse of a matrix – Rank of a Matrix – Eigen value Problems

UNIT II: System of Simultaneous Linear algebraic Equation – Gauss elimination, Gauss Jordon, Gauss Seidal methods.

UNIT III: Numerical Differentiations – Newton_s forward Difference - Backward Difference – Starling formula Numerical Integration – Trapezoidal Rule & Simpson_s rule.

UNIT IV: Measures of central tendency – Mean Median and Mode – Relationship among mean media and mode. Measures of dispersion – Range, quartile deviation and Standard deviation.

UNIT V: Regression and Correlation – Types of relationship – Linear regression – Correlation – Coefficient of correlation – Regression equation of variables.

TEXT BOOKS:

1. Engineering Mathematics, Volume II, Dr M.K. Venkataraman, National Publishing Company, Chennai. (Unit I)

2. Numerical Methods in Science & Engineering, M.K. Venkataraman, National Publishing Company, Chennai, Revised Edition -2005 (Unit II & III)

3. Business Statistics, S.P. Gupta & M.P. Gupta, Sultan Chand and Sons (Unit IV & V)

REFERENCE BOOKS:

1. Numerical Methods, E. Balagurusamy, Tata McGraw Hill.

2. Fundamental of Mathematical Statistics, S. C. Gupta, V. K. Kapoor, Sultan Chand & Sons

SEMESTER-2

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BHARATHIAR UNIVERSITY, COIMBATORE-641 046.

UNDER GRADUATE DEGREE PROGRAMMES (CBCS Semester Pattern)

(For the students admitted during the academic year 2017 -2018 onwards)

பாடத்திட்டம் - இரண்டாம் பருவம் - பகுதி - I - தாள் - II

(2017-2018ஆம் கல்வியாண்டு முதல் சேர்வோர்க்குரியது)

(செய்யுள், உரைநடை, இலக்கிய வரலாறு, விண்ணப்பம் வரைதல்)

அலகு - I

1.திருக்குறள் (மூன்று அதிகாரங்கள்)

   அ.அன்புடைமை

   ஆ.அறிவுடைமை

   இ.பிரிவாற்றாமை

2.சிறுபஞ்சமூலம் - 11-20 பாடல்கள் (10 பாடல்கள்)

3.பழமொழி நானூறு - முயற்சி - முதல் 10 பாடல்கள்

அலகு - II

1.   நந்திக் கலம்பகம்

2.   திருப்பாவை, திருவெம்பாவை

3.   சித்தர் பாடல்கள்

அலகு - III - உரைநடைத் திரட்டு -NCBH, வெளியீடு.

1.   சங்கச் சான்றோர்களின் ஆளுமைப் பண்புகள் - பேரா.இரா.மோகன்

2.   உருவ ஊன்று பாத்திரங்கள் - முனைவர் கா.மீனாட்சிசுந்தரம்

3.   திருக்குறளும் தந்தை பெரியாரும் - பேரா.க.பஞ்சாங்கம்

4.   இயற்கையும் மனிதனும் - முனைவர் க.சிவமணி

5.   பாட்டு ஆட்டங்கள் - ஆறு.இராமநாதன்

அலகு - IV

1.   வல்லினம் மிகும் இடம் - மிகா இடம்

2.   வினா விடை வகைகள் - (அறுவகை வினா, எண்வகை விடை)

3.   ஆகுபெயர் விளக்கம் - பயன்பாடு வகைகள் 10.

அலகு - V - இலக்கிய வரலாறு பாடத்திட்டத்தைத் தழுவியது.

1.   பதினெண் கீழ்க்கணக்கு நூல்கள்

2.   தமிழ் உரைநடையின் தோற்றமும் - வளர்ச்சியும்

                                             பயிற்சிக்குரியன

3.   விண்ணப்பங்கள், மடல்கள் எழுதச் செய்தல்.

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SECOND SEMESTER – PAPER II
(Modern Poetry, One Act Play, Translation & Letter Writing, Conversation)

1. MODERN POETRY : BHOOMIJA by NAGARJUN

    Publishers   :   Rajkamal Prakashan
                            1B Nethaji Subash Marg,
                            New Delhi.

2. ONE ACT PLAY   :   NAVEEN EKANKI SANGRAH
                            By Dr. Smt. MALATI THIVARI
                            SUMITHRA PRAKASHAN
                            ASHOK NAGAR
                            ALLAHABAD – 1.

3. TRANSLATION   :   HINDI-ENGLISH ONLY
                            (ANUVADH ABYAS-III)
                            Lessons – 1-15 only

    PUBLISHER   :   DAKSHIN BHARATH HINDI PRACHAR SABHA
                            CHENNAI – 600 017.

4. LETTER WRITING   :   (Leave Letter, Job Application, Ordering Books, Letter
                            to Publisher, Personal Letter)

5. CONVERSATION   :   (Doctor & Patient, Teacher & Student, Storekeeper & Buyer,
                            Two Friends, Booking Clerk & Passenger at Railway Station,
                            Autorickshaw driver and Passenger)
                            Ref : Bolchal Ki Hindi Aur Sanchar by Dr. Madhu Dhavan
                            Vani Prakashan, New Delhi.

THIRD SEMESTER-PAPER III
(Poetry, History of Hindi Literature, Alankar and Translation)

1. POETRY   :   KAVYA LEHAR – by Dr. V. Baskhar

    Publisher   :   Jawahar Pusthakalay, Sadar Bazaar, Mathura-U.P. 281 001.
                            SHORT NOTES ON POETS – All the Poets mentioned in the
                            Text Book.

2. HISTORY OF HINDI LITERATURE :
                            Only Aadi Kaal and Bhakthi Kaal. Only a general knowledge
                            of the trends of the difference streams.

SEMESTER II   **PAPER II**

Prescribed text	: **LATITUDES I**
Units	: 5 – 8
Authors	: Régine Mérieux
	Yves Loiseau

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

New Delhi – 110007

Tel   : 011 – 23852986 / 9650597000

Question Paper Pattern
Semester II

Maximum Marks: 75   Time: 3 hrs.

(All questions to be set only from the prescribed text)

Section A (10)

1. Choisissez la meilleure réponse: (10X1=10)

Section B (25)

2. Choisissez un des trois sujets et écrivez un texte d'environ 60 mots : (5X1=5)
3. Traduisez les textes suivants en anglais:(4/5) (4X5=20)

Section C (40)

4. Compréhension (5x1=5)
5. Exercices de grammaire:(5X5=25) **(either/or)**
6. Remplissez le dialogue:(5X1=5)
7. Associez :(5X1=5)

Part II English-Semester II

Unit I: Poetry
1. Stopping By Woods on a Snowy Evening-Robert Frost
2. A Prayer for my Daughter-W.B.Yeats
3.Enterprise-Nissim Ezekiel

Unit II: Prose
1.Woman, not the weaker sex- M.K.Gandhi
2. Dimensions of Creativity-Dr.A.P.J. Abdul Kalam
3.Three Days to See-Helen Keller

Unit III: Short Stories
1.An Astrologer's Day-R.K.Narayan
2. Little Girls wiser than Men-Tolstoy
3. Boy who Wanted more Cheese-William Elliot Griffir

Unit IV:Biographies
1. Martin Luther King-R.N.Roy
2. Nehru-A.J.Toynbee

Unit V: Grammar and Composition
1. Phrases and clauses
2.Types of sentences
3.Framing questions and answers
4.Dialogue Writing

Question Paper Pattern: Existing Pattern is to be followed.

SECOND SEMESTER – PAPER II
(Modern Poetry, One Act Play , Translation & Letter Writing)

1. MODERN POETRY; Draupadi by Narendra Sharma

   PUBLISHERS: Rajkamal Prakashan
   1B Nethaji Subash Marg,
   New Delhi

2. ONE ACT PLAY: EKANKĪ SANKALAN – Lesson ''Strike' omitted
   By VEERENDRA KUMAR MISHRA
   PUBLISHER: VANI PRAKASHAM
   NEW DELHI – 110 002.

3. TRANSLATION: HINDI – ENGLISH ONLY,
   (ANUVADH ABYAS – III)
   Lessons.1 – 15 only

   PUBLISHER: DAKSHIN BHARATH HINDI PRACHAR SABHA
   CHENNAI – 600 017.

4. LETTER WRITING: (Leave letter, Job Application, Ordering books,
   Letter to Publisher, Personal letter)

5. CONVERSATION: (Doctor & Patient, Teacher & Student, Storekeeper &
   Buyer, Two Friends, Booking clerk & Passenger at Railway station,
   Autorickshaw driver and Passenger)
   Reference: Bolchal Ki Hindi Aur Sanchar by Dr. Madhu Dhavan
   Vani Prakashan, New Delhi

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**II**
Subject	**CORE 3: C++ PROGRAMMING**

Subject Description: This subject deals with Object–oriented programming concepts like Abstraction, Encapsulation, Inheritance and Polymorphism.

Goal: Knowledge on Object–oriented concept and programming with C++.

Objective: To inculcate knowledge on Object-oriented programming concepts using C++.

UNIT I: Introduction to C++ - key concepts of Object-Oriented Programming –Advantages – Object Oriented Languages – I/O in C++ - C++ Declarations. Control Structures : - Decision Making and Statements : If .. else ,jump, goto, break, continue, Switch case statements - Loops in C++ : for, while, do - functions in C++ - inline functions – Function Overloading.

UNIT II: Classes and Objects: Declaring Objects – Defining Member Functions – Static Member variables and functions – array of objects –friend functions – Overloading member functions – Bit fields and classes – Constructor and destructor with static members.

UNIT III: Operator Overloading: Overloading unary, binary operators – Overloading Friend functions – type conversion – Inheritance: Types of Inheritance – Single, Multilevel, Multiple, Hierarchal, Hybrid, Multi path inheritance – Virtual base Classes – Abstract Classes.

UNIT IV: Pointers – Declaration – Pointer to Class , Object – this pointer – Pointers to derived classes and Base classes – Arrays – Characteristics – array of classes – Memory models – new and delete operators – dynamic object – Binding, Polymorphism and Virtual Functions.

UNIT V: Files – File stream classes – file modes – Sequential Read / Write operations – Binary and ASCII Files – Random Access Operation – Templates – Exception Handling - String – Declaring and Initializing string objects – String Attributes – Miscellaneous functions .

TEXT BOOK:

1. Ashok N Kamthane, Object-Oriented Programming with Ansi And Turbo C++, Pearson Education, 2003.

REFERENCE BOOKS:

1. E. Balagurusamy, Object-Oriented Programming with C++, TMH, 1998.
2. Maria Litvin & Gray Litvin, C++ for you, Vikas publication, 2002.
3. John R Hubbard, Programming with C, 2nd Edition, TMH publication, 2002.

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**II**
Subject	**CORE LAB 2: PROGRAMMING LAB – C++**

1. Write a C++ Program to create a class to implement the data structure STACK. Write a constructor to initialize the TOP of the STACK. Write a member function PUSH() to insert an element and member function POP() to delete an element check for overflow and underflow conditions..

2. Write a C++ Program to create a class ARITHMETIC which consists of a FLOAT and an INTEGER variable. Write member functions ADD (),SUB(), MUL(), DIV() to perform addition, subtraction, multiplication, division respectively. Write a member function to get and display values.

3. Write a C++ Program to read an integer number and find the sum of all the digits until it reduces to a single digit using constructors, destructors and inline member functions.

4. Write a C++ Program to create a class FLOAT that contains one float data member. Overload all the four Arithmetic operators so that they operate on the object FLOAT.

5. Write a C++ Program to create a class STRING. Write a Member Function to initialize, get and display stings. Overload the operators ++ and == to concatenate two Strings and to compare two strings respectively.

6. Write a C++ Program to create class, which consists of EMPLOYEE Detail like E_Number, E_Name, Department, Basic, Salary, Grade. Write a member function to get and display them. Derive a class PAY from the above class and write a member function to calculate DA, HRA and PF depending on the grade.

7. Write a C++ Program to create a class SHAPE which consists of two VIRTUAL FUNCTIONS Calculate_Area() and Calculate_Perimeter() to calculate area and perimeter of various figures. Derive three classes SQUARE, RECTANGLE, TRIANGE from class Shape and Calculate Area and Perimeter of each class separately and display the result.

8. Write a C++ Program to create two classes each class consists of two private variables, a integer and a float variable. Write member functions to get and display them. Write a FRIEND Function common to both classes, which takes the object of above two classes

as arguments and the integer and float values of both objects separately and display the result.

9. Write a C++ Program using Function Overloading to read two Matrices of different Data Types such as integers and floating point numbers. Find out the sum of the above two matrices separately and display the sum of these arrays individually.

10. Write a C++ Program to check whether the given string is a palindrome or not using Pointers.

11. Write a C++ Program to create a File and to display the contents of that file with line numbers.

12. Write a C++ Program to merge two files into a single file.

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**II**
Subject	**CORE LAB 3: PROGRAMMING LAB – INTERNET BASICS**

1. To create an email-id.

2. To compose and send a mail.

3. To forward a mail and to reply for a mail.

4. To send a mail with an attachment.

5. To download the attached document of a mail received.

6. To send a mail to a large number of recipients using cc and bcc options.

7. To search a thing using a search engine.

8. To open and read newspaper sites, TV program schedules using Internet.

9. To verify a university /college details by opening their websites.

10. To upload your resume with any one job portal.

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**II**
Subject	**Allied 2: DISCRETE MATHEMATICS**

Subject Description: This subject deals with discrete structures like set theory, mathematical logic, relations, languages, graphs and trees.

Goal: To learn about the discrete structures for computer based applications.

Objective: On successful completion of this subject the students should have: - Understanding the concepts of discrete mathematics - Learning applications of discrete structures in Computer Science.

UNIT I: Set theory-Introduction-Set & its Elements-Set Description-Types of sets-Venn-Euler Diagrams- Set operations & Laws of set theory-Fundamental products-partitions of sets-minsets- Algebra of sets and Duality-Inclusion and Exclusion principle

UNIT II: Mathematical logic – Introduction- prepositional calculus –Basic logical operations-Tautologies-Contradiction-Argument-Method o f proof- Predicate calculus.

UNIT III: Relations – Binary Relations – Set operation on relations-Types of Relations – Partial order relation – Equivalence relation – Composition of relations – Functions – Types of functions – Invertible functions – Composition of functions.

UNIT IV: Languages – Operations on languages – Regular Expressions and regular languages – Grammar – Types of grammars – Finite state machine – Finite – State automata

UNIT V: Graph Theory – Basic terminology – paths, cycle & Connectivity – Sub graphs – Types of graphs – Representation of graphs in computer memory - Trees – Properties of trees – Binary trees – traversing Binary trees – Computer Representation of general trees.

TEXT BOOKS:

1. Discrete Mathematics, J.K. Sharma, 2nd edition, 2005, Macmillan India Ltd. (UNIT I TO V)

REFERENCE BOOKS:

1. Discrete Mathematics Structures with Applications to Computer Science, J. P. Tremblay, R Manohar, McGraw Hill International Edition

2. Discrete Mathematics, M. K. Venkataraman, N.Sridharan, N.Chandarasekaran, National Publishing Company, Chennai

BHARATHIAR UNIVERSITY : COIMBATORE 641 046.

Value Education – Human Rights

(2 hours per week)

(FOR THE UNDER GRADUATE STUDENTS OF AFFILIATED COLLEGES
WITH EFFECT FROM 2008-2009)

UNIT – I : Concept of Human Values, Value Education Towards Personal Development

Aim of education and value education; Evolution of value oriented education; Concept of Human values; types of values; Components of value education.

Personal Development :
Self analysis and introspection; sensitization towards gender equality, physically challenged, intellectually challenged. Respect to - age, experience, maturity, family members, neighbours, co-workers.

Character Formation Towards Positive Personality:
Truthfulness, Constructivity, Sacrifice, Sincerity, Self Control, Altruism, Tolerance, Scientific Vision.

UNIT – II : Value Education Towards National and Global Development

National and International Values:
Constitutional or national values - Democracy, socialism, secularism, equality, justice, liberty, freedom and fraternity.

Social Values - Pity and probity, self control, universal brotherhood.

Professional Values - Knowledge thirst, sincerity in profession, regularity, punctuality and faith.

Religious Values - Tolerance, wisdom, character.

Aesthetic values - Love and appreciation of literature and fine arts and respect for the same.

National Integration and international understanding.

UNIT – III : Impact of Global Development on Ethics and Values

Conflict of cross-cultural influences, mass media, cross-border education, materialistic values, professional challenges and compromise.

Modern Challenges of Adolescent Emotions and behavior; Sex and spirituality: Comparision and competition; positive and negative thoughts.

Adolescent Emotions, arrogance, anger, sexual instability, selfishness, defiance.

UNIT - IV : Theraupatic Measures

Control of the mind through
a. Simplified physical exercise
b. Meditation – Objectives, types, effect on body, mind and soul
c. Yoga – Objectives, Types, Asanas
d. Activities:
   (i) Moralisation of Desires
   (ii) Neutralisation of Anger
   (iii) Eradication of Worries
   (iv) Benefits of Blessings

UNIT; V : Human Rights

1. Concept of Human Rights – Indian and International Perspectives
   a. Evolution of Human Rights
   b. Definitions under Indian and International documents

2. Broad classification of Human Rights and Relevant Constitutional Provisions.
   a. Right to Life, Liberty and Dignity
   b. Right to Equality
   c. Right against Exploitation
   d. Cultural and Educational Rights
   e. Economic Rights
   f. Political Rights
   g. Social Rights

3. Human Rights of Women and Children
   a. Social Practice and Constitutional Safeguards
      (i)   Female Foeticide and Infanticide
      (ii) Physical assault and harassment
      (iii) Domestic violence
      (iv) Conditions of Working Women

4. Institutions for Implementation
   a. Human Rights Commission
   b. Judiciary

5. Violations and Redressel
   a. Violation by State
   b. Violation by Individuals
   c. Nuclear Weapons and terrorism
   d. Safeguards.

SEMESTER-3

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**III**
Subject	**CORE 4: DATA STRUCTURES**

UNIT I Introduction: Introduction of Algorithms, Analysing Algorithms. Arrays: Sparse Matrices - Representation of Arrays. Stacks and Queues. Fundamentals - Evaluation of Expression Infix to Postfix Conversion - Multiple Stacks and Queues

UNIT II Linked List: Singly Linked List - Linked Stacks and Queues - Polynomial Addition - More on Linked Lists - Sparse Matrices - Doubly Linked List and Dynamic - Storage Management - Garbage Collection and Compaction.

UNIT III Trees: Basic Terminology - Binary Trees - Binary Tree Representations - Binary Trees -Traversal - More on Binary Trees - Threaded Binary Trees - Binary Tree Representation of Trees - Counting Binary Trees. Graphs: Terminology and Representations - Traversals, Connected Components and Spanning Trees, Shortest Paths and Transitive Closure

UNIT IV External Sorting: Storage Devices -Sorting with Disks: K-Way Merging - Sorting with Tapes Symbol Tables: Static Tree Tables - Dynamic Tree Tables - Hash Tables: Hashing Functions - Overflow Handling.

UNIT V Internal Sorting: Insertion Sort - Quick Sort - 2 Way Merge Sort - Heap Sort - Shell Sort - Sorting on Several Keys. Files: Files, Queries and Sequential organizations - Index Techniques -File Organizations.

TEXT BOOKS

1. Ellis Horowitz, Sartaj Shani, Data Structures, Galgotia Publication.

2. Ellis Horowitz, Sartaj Shani, Sanguthevar Rajasekaran, Computer Algorithms, Galgotia Publication.

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**III**
Subject	**CORE 5: JAVA PROGRAMMING**

Subject Description: This subject deals with Java Programming concepts.

Goal: Enable to create wide range of Applications and Applets using Java.

Objective: To inculcate knowledge on Java Programming concepts.

UNIT I: Fundamentals of Object-Oriented Programming: Object-Oriented Paradigm – Basic Concepts of Object-Oriented Programming – Benefits of Object-Oriented Programming – Application of Object-Oriented Programming. Java Evolution: History – Features – How Java differs from C and C++ – Java and Internet – Java and www –Web Browsers. Overview of Java: simple Java program – Structure – Java Tokens – Statements – Java Virtual Machine.

UNIT II: Constants, Variables, Data Types - Operators and Expressions – Decision Making and Branching: if, if...else, nested if, switch, ? : Operator - Decision Making and Looping: while, do, for – Jumps in Loops - Labeled Loops – Classes, Objects and Methods.

UNIT III: Arrays, Strings and Vectors – Interfaces: Multiple Inheritance – Packages: Putting Classes together – Multithreaded Programming.

UNIT IV: Managing Errors and Exceptions – Applet Programming – Graphics Programming.

UNIT V: Managing Input / Output Files in Java : Concepts of Streams- Stream Classes – Byte Stream classes – Character stream classes – Using streams – I/O Classes – File Class – I/O exceptions – Creation of files – Reading / Writing characters, Byte-Handling Primitive data Types – Random Access Files.

TEXTBOOK:

1. Programming with Java – A Primer - E. Balagurusamy, 3rd Edition, TMH.

REFERENCE BOOKS:

1. The Complete Reference Java 2 - Patrick Naughton & Hebert Schildt, 3rd Edition, TMH

2. Programming with Java – John R. Hubbard, 2nd Edition, TMH.

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**III**
Subject	**CORE LAB 4: PROGRAMMING LAB - JAVA**

1. Write a Java Applications to extract a portion of a character string and print the extracted string.

2. Write a Java Program to implement the concept of multiple inheritance using Interfaces.

3. Write a Java Program to create an Exception called payout-of-bounds and throw the exception.

4. Write a Java Program to implement the concept of multithreading with the use of any three multiplication tables and assign three different priorities to them.

5. Write a Java Program to draw several shapes in the created windows.

6. Write a Java Program to create a frame with four text fields name, street, city and pin code with suitable tables. Also add a button called my details. When the button is clicked its corresponding values are to be appeared in the text fields.

7. Write a Java Program to demonstrate the Multiple Selection List-box.

8. Write a Java Program to create a frame with three text fields for name, age and qualification and a text field for multiple line for address

9. Write a Java Program to create Menu Bars and pull down menus.

10. Write a Java Program to create frames which respond to the mouse clicks. For each events with mouse such as mouse up, mouse down, etc., the corresponding message to be displayed.

11. Write a Java Program to draw circle, square, ellipse and rectangle at the mouse click positions.

12. Write a Java Program which open an existing file and append text to that file.

E-COMMERCE

UNIT I: Introduction to E-Commerce: The Scope of E-Commerce – Definition-E-Commerce & the Trade Cycle – Electronic Market – Electronic Data Interchange – The Internet Commerce – The E-Commerce in Perspective. Business Strategy: The Value Chain – Supply Chains – Porter's Value Chain Model – The Inter Organizational Value Chain.

UNIT II: The Introduction to Business Strategy – Strategic Implications of IT – Technology – Business Environment – Business Capability – Existing Business Strategy – Strategy Formulation & Implementation Planning – e-Commerce Implementation -Commerce Evaluation. The Inter Organizational Transactions – The Credit Transaction Trade Cycle. A Variety of Transactions – Pens & Things.

UNIT III: E-Markets: Markets – E-Markets-Usage of E-Markets-Advantages & Disadvantages of E-Markets. EDI: Introduction – Definition - Benefits of EDI – EDI Standards – EDI Communication EDI Implementation – EDI Agreement – EDI Security.

UNIT IV: The Internet : The Internet – The Development of the Internet – TCP/IP – Internet Components – Uses of the Internet – A Page on the Web: HTML Basics – Introduction to HTML – Further HTML – Client Side Scripting – Server Side Scripting – HTML Editors & Editing – The Elements of E-Commerce : Elements – e-Visibility – The e-Shop – On line Payments - Delivering the Goods – Internet e-Commerce Security .

UNIT V: E-Business: Introduction - The Internet Bookshops – Grocery Supplies - Software Supplies and Support – Electronic Newspapers – The Internet Banking - The Virtual Auctions – Online Share Dealing – Gambling on the Net – e-Diversity.

TEXT BOOK:

1. David Whiteley, E-Commerce – Strategy, Technology & Applications, Tata McGraw-Hill.

SKILL-1 – BSc CT : DATA COMMUNICATION AND NETWORKS

UNIT I: Introduction to communications and Networking : Introduction – Fundamental concepts - Data communications – Protocols- standards - Standards organizations - Signal propagations- Analog and Digital signals- Bandwidth of a signal and a medium - Fourier analysis and the concept of bandwidth of a signal - The data transmission rate and the bandwidth. **Information encoding:** Introduction – Representing different symbols- Minimizing errors- Multimedia – Multimedia and Data compression.

UNIT II: Analog and digital transmission methods: Introduction - Analog signal, Analog transmission - Digital signal, Digital transmission - Digital signal , Analog transmission - Baud rate and bits per second - Analog signal, Digital (Storage and) transmission - Nyquist Theorem. **Modes of data transmission and Multiplexing:** Introduction – Parallel and Serial communication - Asynchronous, Synchronous and Isochronous communication - Simplex, Half-duplex and Full-duplex communication – Multiplexing - Types of Multiplexing - FDM versus TDM. **Transmission Errors: Detection and correction :** Introduction – Error classification – Types of Errors – Error detection.

UNIT III: Transmission media: Introduction - Guided media - Un Guided media - Shannon capacity. **Network topologies, switching and routing algorithms:** Introduction - Mesh topology - Star topology - Tree topology - Ring topology - Bus topology - Hybrid topology - Switching basics- Circuit switching – Packet switching - Message switching - Router and Routing – Factors affecting routing algorithms - Routing algorithm -Approaches to routing.

UNIT IV: Networking protocols and OSI model: Introduction – Protocols in computer communications - The OSI model - OSI layer functions. **Integrated services digital networking (ISDN):** Introduction – Background of ISDN - ISDN architecture – ISDN interfaces - Functional grouping – Reference points - ISDN protocol architecture - Broadband ISDN (B-ISDN). of ATM – Packet size – Virtual circuits in ATM – ATM cells – Switching – ATM layers – Miscellaneous Topics.

Text book:

1. Data Communications and Networks, Achyut. S. Godbole, Tata McGraw-Hill Publishing Company, 2007.

BHARATHIAR UNIVERSITY : COIMBATORE
SYLLABUS FOR
"Women's Rights
FOR PART – IV IN THIRD SEMESTER OF UNDERGRADUATE CANDIDATES
WITH EFFECT FROM 2008-09
IN CBCS PATTERN

UNIT I

Laws, Legal Systems and Change

Definition - Constitutional law, CEDAW and International Human Rights – Laws and Norms – Laws and Social Context – Constitutional and Legal Framework.

UNIT II

Politics of land and gender in India

Introduction – Faces of Poverty – Land as Productive Resources – Locating Identities – Women's Claims to Land – Right to Property - Case Studies.

UNIT III

Women's Rights: Access to Justice

Introduction – Criminal Law – Crime Against Women – Domestic Violence – Dowry Related Harassment and Dowry Deaths – Molestation – Sexual Abuse and Rape – Loopholes in Practice – Law Enforcement Agency.

UNIT IV

Women's Rights

Violence Against Women – Domestic Violence - The Protection of Women from Domestic Violence Act, 2005 - The Marriage Validation Act, 1982 - The Hindu Widow Re-marriage Act, 1856 - The Dowry Prohibition Act, 1961

SCAA Dt. 21-5-2009

UNIT V

Special Women Welfare Laws

Sexual Harassment at Work Places – Rape and Indecent Representation – The Indecedent Representation (Prohibition) Act, 1986 - Immoral Trafficking – The Immoral Traffic (Prevention) Act, 1956 - Acts Enacted for Women Development and Empowerment - Role of Rape Crisis Centers.

References

1. Nitya Rao "Good Women do not Inherit Land" Social Science Press and Orient Blackswan 2008
2. International Solidarity Network "Knowing Our Rights" An imprint of Kali for Women 2006
3. P.D.Kaushik "Women Rights" Bookwell Publication 2007
4. Aruna Goal "Violence Protective Measures for Women Development and Empowerment" Deep and Deep Publications Pvt 2004
5. Monica Chawla "Gender Justice" Deep and Deep Publications Pvt Ltd.2006
6. Preeti Mishra "Domestic Violence Against Women" Deep and Deep Publications Pvt 2007
7. ClairM.Renzetti, Jeffrey L.Edleson, Raquel Kennedy Bergen, Source Book on "Violence Against Women" Sage Publications 2001

BHARATHIAR UNIVERSITY : COIMBATORE
SYLLABUS FOR
"YOGA FOR HUMAN EXCELLENCE"
FOR PART – IV IN THIRD SEMESTER OF UNDERGRADUATE CANDIDATES
WITH EFFECT FROM 2008-09
IN CBCS PATTERN

Unit I - Yoga and Physical Health

1.1 Physical Structure – Three bodies – Five limitations

1.2 Simplified Physical Exercises – Hand Exercises -Leg Exercises – Breathing Exercises – Eye Exercises – Kapalapathi

1.3 Maharasanas 1-2 – Massages – Acu-puncture – Relaxation

1.4 Yogasanas – Surya Namaskar – Padmasana – Vajrasanas – Chakrasanas (Side) – Viruchasanas – Yoga muthra – Patchimothasanas – Ustrasanas – Vakkarasanas – Salabasanas

Unit II - Art of Nurturing the life force and Mind

2.1 Maintaining the youthfulness – Postponing the ageing process

2.2 Sex and Spirituality - Significance of sexual vital fluid – Married life – Chastity

2.3 Ten stages of Mind

2.4 Mental frequency – Methods for concentration

Unit III - Sublimation

3.1 Purpose and Philosophy of life

3.2 Introspection – Analysis of Thought

3.3 Moralization of Desires

3.4 Neutralization of Anger

Unit IV – Human Resources Development

4.1 Eradication of worries

4.2 Benefits of Blessings

4.3. Greatness of Friendship

4.4 Individual Peace and World Peace

Unit V – Law of Nature

5.1 Unified force – Cause and Effect system

5.2 Purity of Thought and Deed and Genetic Centre

5.3 Love and Compassion

5.4 Cultural Education – Five fold Culture

SEMESTER-4

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**IV**
Subject	**CORE 6: SYSTEM SOFTWARE AND OPERATING SYSTEMS**

Subject Description: It deals with fundamentals of System Software and Resources of Operating System.

Goal: Knowledge on various System Software and Operating System concepts.

Objective: Enable the student to get sufficient knowledge on various system resources.

(SYSTEM SOFTWARE: Units I & II)

UNIT I: Introduction –System Software and machine architecture. Loader and Linkers: Basic Loader Functions - Machine dependent loader features –Machine independent loader features - Loader design options.

UNIT II: Machine dependent compiler features - Intermediate form of the program - Machine dependent code optimization - Machine independent compiler features - Compiler design options - Division into passes – Interpreters – p-code compilers - Compiler-compilers.

(OPERATING SYSTEMS: UNIT III, IV & V)

UNIT III: What is an Operating System? – Process Concepts: Definition of Process - Process States - Process States Transition – Interrupt Processing – Interrupt Classes - Storage Management: Real Storage: Real Storage Management Strategies – Contiguous versus Non-contiguous storage allocation – Single User Contiguous Storage allocation- Fixed partition multiprogramming – Variable partition multiprogramming.

UNIT IV: Virtual Storage: Virtual Storage Management Strategies – Page Replacement Strategies – Working Sets – Demand Paging – Page Size. Processor Management: Job and Processor Scheduling: Preemptive Vs Non-preemptive scheduling – Priorities – Deadline scheduling.

UNIT V: Device and Information Management Disk Performance Optimization: Operation of moving head disk storage – Need for disk scheduling – Seek Optimization – File and Database Systems: File System – Functions – Organization – Allocating and freeing space – File

descriptor – Access control matrix.

TEXT BOOKS:

1. Leland L.Beck, System Software: An Introduction to Systems Programming, Pearson, Third Edition.
2. H.M. Deitel, Operating Systems, 2nd Edition, Perason, 2003.

REFERENCE BOOKS:

1. Achy8ut S. Godbole, Operating Systems, TMH, 2002.
2. John J. Donovan, Systems Programming, TMH, 1991.
3. D.M. Dhamdhere, Systems Programming and Operating Systems, 2nd Revised Edition, TMH.

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**IV**
Subject	**CORE 7: LINUX AND SHELL PROGRAMMING**

UNIT I: Introduction to LINUX Operating System: Introduction - The LINUX Operating System.

UNIT II: Managing Files and Directories: Introduction – Directory Commands in LINUX – File Commands in LINUX.

UNIT III: Creating files using the vi editor: Text editors – The vi editor. Managing Documents: Locating files in LINUX – Standard files – Redirection – Filters – Pipes.

UNIT IV: Securing files in LINUX: File access permissions – viewing File access permissions – Changing File access permissions. Automating Tasks using Shell Scripts: Introduction – Variables- Local and Global Shell variables – Command Substitution

UNIT V: Using Conditional Execution in Shell Scripts: Conditional Execution – The case…esac Construct. Managing repetitive tasks using Shell Scripts: Using Iteration in Shell Scripts – The while construct – until construct – for construct – break and continue commands – Simple Programs using Shell Scripts.

TEXT BOOK:

1. Operating System LINUX, NIIT, PHI, 2006, Eastern Economy Edition.

REFERENCE BOOK:

1. Richard Petersen, Linux: The Complete Reference, Sixth Edition, Tata McGraw-Hill Publishing Company Limited, New Delhi, Edition 2008.

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**IV**
Subject	**CORE LAB 5: LINUX AND SHELL PROGRAMMING LAB**

1. Write a shell script to stimulate the file commands: rm, cp, cat, mv, cmp, wc, split, diff.

2. Write a shell script to show the following system configuration :

   a. currently logged user and his log name

   b. current shell , home directory , Operating System type , current Path setting , current working directory

   c. show currently logged number of users, show all available shells

   d. show CPU information like processor type , speed

   e. show memory information

3. Write a Shell Script to implement the following: pipes, Redirection and tee commands.

4. Write a shell script for displaying current date, user name, file listing and directories by getting user choice.

5. Write a shell script to implement the filter commands.

6. Write a shell script to remove the files which has file size as zero bytes.

7. Write a shell script to find the sum of the individual digits of a given number.

8. Write a shell script to find the greatest among the given set of numbers using command line arguments.

9. Write a shell script for palindrome checking.

10. Write a shell script to print the multiplication table of the given argument using for loop.

BUSINESS ACCOUNTING

UNIT I: Introduction-Accounting Principles-Branches of accounting-accounting rules-Journalising-Ledger-Subsidiary Book including cash books-Trial Balance.

UNIT II: Preparation of Final Accounts: Trading, Profit and Loss Account and Balance sheet with simple adjustments-Outstanding Expenses and Income, Prepaid Expenses, Pre received Income, Depreciation –Provision for bad debts.

UNIT III: Cost Account-Meaning elements of cost-Preparation of cost sheet with simple adjustments.

UNIT IV: Material cost: Stores Ledger-FIFO-LIFO-weighted average, simple average method. Management Account-Meaning –Objectives- Management account with financial Account.

UNIT V: Budget and Budgetary control-Preparation of various budgets-Flexible Budget-Production Budget-Cash Budget – Sales Budget.

Note: **Distribution of Marks between Problems and Theory shall be 60% and 40%.**

TEXT BOOK:

1. Accounting for Management, N.P.Srinivasan and M.Sakthivel Murugan, S.Chand & Company Ltd., New Delhi.

REFERENCE BOOKS:

1. Double entry book Keeping, T.S Grewal, Sultan Chand & Sons, New Delhi.

2. Management Accounting, Sharma and Gupta, Kalyani Publishers, New Delhi.

SKILL-2 BSc CT : NETWORK LAB

1. Write a program to Detect Errors using Vertical Redundancy Check (VRC).

2. Write a program to Detect Errors using Longitudinal Redundancy Check (LRC).

3. Write a program to Detect Errors using Cyclic Redundancy Check (CRC).

4. Write a Socket program to implement Asynchronous Communication.

5. Write a Socket program to implement Isochronous Communication.

6. Write a program to implement Stop & Wait Protocol.

7. Write a program to implement Sliding Window Protocol.

8. Write a program to implement the Shortest Path Routing using Dijkstra algorithm.

9. Write a Socket Program to Perform file transfer from Server to the Client.

10. Write a Program to implement Remote Procedure call under Client / Server Environment

SEMESTER-5

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**V**
Subject	**CORE 8: RDBMS AND ORACLE**

Subject Description: This subject deals with RDBMS concepts using Oracle SQL and PL/SQL.

Goal: Knowledge on Oracle Programming techniques.

Objective: To inculcate knowledge on RDBMS concepts and Programming with Oracle.

UNIT I: Database Concepts: A Relational approach: Database – Relationships – DBMS – Relational Data Model – Integrity Rules – Theoretical Relational Languages. Database Design: Data Modeling and Normalization: Data Modeling – Dependency – Database Design – Normal forms – Dependency Diagrams – De -normalization – Another Example of Normalization.

UNIT II: Oracle9*i*: Overview: Personal Databases – Client/Server Databases – Oracle9i an introduction – SQL *Plus Environment – SQL – Logging into SQL *Plus - SQL *Plus Commands – Errors & Help – Alternate Text Editors - SQL *Plus Worksheet - *i*SQL *Plus. Oracle Tables: DDL: Naming Rules and conventions – Data Types – Constraints – Creating Oracle Table – Displaying Table Information – Altering an Existing Table – Dropping, Renaming, Truncating Table – Table Types – Spooling – Error codes.

UNIT III: Working with Table: Data Management and Retrieval: DML – adding a new Row/Record – Customized Prompts – Updating and Deleting an Existing Rows/Records – retrieving Data from Table – Arithmetic Operations – restricting Data with WHERE clause – Sorting – Revisiting Substitution Variables – DEFINE command – CASE structure. Functions and Grouping: Built-in functions –Grouping Data. Multiple Tables: Joins and Set operations: Join – Set operations.

UNIT IV: PL/SQL: A Programming Language: History – Fundamentals – Block Structure – Comments – Data Types – Other Data Types – Declaration – Assignment operation – Bind variables – Substitution Variables – Printing – Arithmetic Operators. Control Structures and Embedded SQL: Control Structures – Nested Blocks – SQ L in PL/SQL – Data Manipulation – Transaction Control statements. PL/SQL Cursors and Exceptions: Cursors – Implicit & Explicit Cursors and Attributes – Cursor FOR loops – SELECT…FOR UPDATE – WHERE

CURRENT OF clause – Cursor with Parameters – Cursor Variables – Exceptions – Types of Exceptions.

UNIT V: PL/SQL Composite Data Types: Records – Tables – arrays. Named Blocks: Procedures – Functions – Packages –Triggers –Data Dictionary Views.

TEXT BOOK:

1. Database Systems using Oracle, Nilesh Shah, 2nd edition, PHI.

REFERENCE BOOKS:

1. Database Management Systems, Majumdar & Bhattacharya, 2007, TMH.
2. Database Management Systems, Gerald V. Post, 3rd edition, TMH.

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**V**
Subject	**CORE 9: VISUAL BASIC**

UNIT I: Getting Started with VB6, Programming Environment, Working with Forms, Developing an application, Variables, Data types and Modules, procedures and control structures, arrays. Working with Controls: Creating and using controls, working with control arrays.

UNIT II: Menus, Mouse events and Dialog boxes: Mouse events, Dialog boxes, MDI and Flexgrid: MDI, Using the Flexgrid control.

UNIT III: ODBC and Data Access Objects: Data Access Options, ODBC, Remote data objects, ActiveX EXE and ActiveX DLL: Introduction, Creating an ActiveX EXE Component, Creating ActiveX DLL Component.

UNIT IV: Object Linking and Embedding: OLE fundamentals, Using OLE Container Control, Using OLE Automation objects, OLE Drag and Drop, File and File System Control: File System Controls, Accessing Files.

UNIT V: Additional controls in VB: sstab control, setting properties at runtime, adding controls to tab, list control, tabstrip control, MSFlexgrid control, Why ADO, Establishing a reference, Crystal and Data reports.

TEXT BOOKS:

1. Visual Basic 6.0 Programming, Content Development Group, TMH, 8th reprint, 2007. **(Unit I to Unit IV)**
2. Programming with Visual Basic 6.0, Mohammed Azam, Vikas Publishing House, Fourth Reprint, 2006. **(Unit V)**

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**V**
Subject	**CORE LAB 6: PROGRAMMING LAB – VB and Oracle**

VISUAL BASIC:

1. Write a simple VB program to accept a number as input and convert them into

    a) Binary b) Octal c) Hexadecimal

2. Write a simple VB program to add the items to list box with user input and move the selected item to combo box one by one.

3. Write a simple VB program to develop a calculator with basic operation.

4. Design a form using common dialog control to display the font, save and open dialog box without using the action control property.

5. Write a VB Program to develop a menu driven program Add a MDI window in the form and arrange them in the cascading/horizontal style using menus (Create a menu to add form, arrange) (Menu Item 1). Also change the form color using the menu in another menu item (Menu Item 2).

6. Develop a simple project for Student Database Management System using VB as front end and Oracle as back end.

ORACLE:

1. Create a table for Employee details with Employee Number as primary key and following fields: Name, Designation, Gender, Age, Date of Joining and Salary. Insert at least ten rows and perform various queries using any one Comparison, Logical, Set, Sorting and Grouping operators.

2. Create tables for library management system which demonstrate the use of primary key and foreign key. Master table should have the following fields: Accno, Title, Author and Rate. Transaction table should have the following fields: User id, Accno, Date of Issue

    and Date of Return. Create a Report(Select verb) with fields Accno, Title, Date of Issue for the given Date of Return with column formats.

3. Write a PL/SQL to update the rate field by 20% more than the current rate in inventory table which has the following fields: Prono, ProName and Rate. After updating the table a new field (Alter) called for Number of item and place for values for the new field without using PL/SQL block.

4. Write a PL/SQL to split the student table into two tables based on result (One table for

‒Pass‖ and another for ‒Fail‖). Use cursor for handling records of student table. Assume necessary fields and create a student details table.

5. Create a database trigger to implement on master and transaction tables which are based on inventory management system for checking data validity. Assume the necessary fields for both tables.

6. Write a PL/SQL to raise the following Exception in Bank Account Management table when deposit amount is zero.

ELECTIVE -I : MOBILE COMPUTING

UNIT I: Introduction: Mobility of Bits and Bytes –Wireless The Beginning – Mobile Computing – Dialogue Control – Networks – Middleware and Gateways – Application and services- Developing Mobile computer Applications – security in mobile computing – Standards _ Why is it necessary – Standard bodies. MOBILE COMPUTTING ARCHITECTURE: History of computers and Internet – Architecture for mobile computing – Three-tier architecture – Design considerations for mobile computing – Mobile computing through Internet – Making exiting applications mobile enabled

UNIT II: MOBILE COMPUTING THROUGH TELEPHONY: Evaluation of telephony – Multiple access procedures – Mobile computing through telephone – IVR Application – Voice XML – TAPI

UNIT III: EMERGING TECHNOLOGIES: Blue Tooth – RFID – WiMAX – Mobile IP – IPv6 – Java Card. GSM : Global System for mobile communications – GSM Architecture – GSM Entities – Call routing in GSM – PLMN Interfaces – GSM Addresses and Identifiers – Network Aspects in GSM – GSM Frequency allocations – Authentications and Security. SMS

UNIT IV: GPRS – GPRS and packet data network – GPRS network architecture – GPRS network operations – Data services in GPRS – Application for GPRS- Limitations – Billing and Charging. WAP : MMS – GPRS Applications

UNIT V: CDMA and 3G: Spread spectrum technology – Is 95 – CDMA vs GSM – Wireless Data – Third generation networks – Applications on 3G WIRELESS LAN: Wireless LAN advantages – IEEE 802.11 standards – Architecture – Mobile in Wireless LAN – Deploying wireless LAN – Mobile adhoc networks and sensor networks – Wireless LAN Security – WiFi vs 3G

TEXT BOOK:

1. MOBILE COMPUTING, Asoke K Talukder , Roopa R Yavagal, TMH, 2005

ELECTIVE- I : DISTRIBUTED COMPUTING

Subject Description This Course presents the distributed computing techniques emphasizing the client server model

Goals To enable the students to learn the concepts of distributed computing

Objectives On successful completion of the course the students should have understood the trends and principles of distributed computing

UNIT I: Distributed Systems: Fully Distributed Processing systems – Networks and interconnection structures – designing a distributed processing g system.

UNIT II: Distributed systems: Pros and Cons of distributed processing – Distributed databases – the challenges of distributed data – loading, factors – managing the distributed resources division of responsibilities.

UNIT III: Design considerations: Communication Line loading – line loading calculations- partitioning and allocation - data flow systems – dimensional analysis- network database design considerations- ration analysis- database decision trees- synchronization of network databases

UNIT IV: Client server network model: Concept – file server – printer server and e-mail server

UNIT V: Distributed databases: An overview, distributed databases- principles of distributed databases – levels of transparency- distributed database design- the R* project techniques problem of heterogeneous distributed databases

REFERENCE BOOKS:

1. John A. Sharp, An introduction to distributed and parallel processing, *Blackwell Scientific Publication(Unit I & III)*

2. Uyless D. Black, Data communication and distributed networks‖(unit II)

3. Joel M.Crichllow , Introduction to distributed & parallel computing (Unit IV)

4. Stefans Ceri, Ginseppe Pelagatti , Distributed database Principles and systems, McGraw Hill

ELECTIVE- I : PYTHON PROGRAMMING

Units	Contents	Hrs
Unit I	**BASICS :** Python - Variables - Executing Python from the Command Line - Editing Python Files - Python Reserved Words - Basic Syntax-Comments - Standard Data Types – Relational Operators - Logical Operators - Bit Wise Operators - Simple Input and Output.	10
Unit II	**CONTROL STATEMENTS:** Control Flow and Syntax - Indenting - if Statement - statements and expressions- string operations- Boolean Expressions -while Loop - break and continue - for Loop. **LISTS:**List-list slices - list methods - list loop – mutability – aliasing - cloning lists - list parameters. **TUPLES:**Tuple assignment, tuple as return value -Sets – Dictionaries.	11
Unit III	**FUNCTIONS:** Definition - Passing parameters to a Function - Built-in functions- Variable Number of Arguments - Scope – Type conversion-Type coercion-Passing Functions to a Function - Mapping Functions in a Dictionary – Lambda - Modules - Standard Modules – sys – math – time - dir - help Function.	10
Unit IV	**ERROR HANDLING:** Run Time Errors - Exception Model - Exception Hierarchy - Handling Multiple Exceptions - Data Streams - Access Modes Writing - Data to a File Reading - Data From a File - Additional File Methods - Using Pipes as Data Streams - Handling IO Exceptions - Working with Directories.	11
Unit V	**OBJECT ORIENTED FEATURES:** Classes Principles of Object Orientation - Creating Classes - Instance Methods - File Organization - Special Methods - Class Variables – Inheritance – Polymorphism - Type Identification - Simple Character Matches - Special Characters - Character Classes – Quantifiers - Dot Character - Greedy Matches – Grouping - Matching at Beginning or End - Match Objects – Substituting - Splitting a String - Compiling Regular Expressions.	10
	Total Contact Hrs	52
TEXT BOOKS	1. Mark Summerfield. —Programming in Python 3: A Complete introduction to the PythonLanguage, Addison-Wesley Professional, 2009. 2. Martin C. Brown, —PYTHON: The Complete Reference‖, McGraw-Hill, 2001.	
REFERENCES	1. Allen B. Downey, ``Think Python: How to Think Like a Computer Scientist'', 2nd edition, Updated for Python 3, Shroff/O'Reilly Publishers, 2016 2. Guido van Rossum and Fred L. Drake Jr, —An Introduction to Python – Revised and updated for Python 3.2, Network Theory Ltd., 2011. 3. Wesley J Chun, —Core Python Applications Programming‖, Prentice Hall, 2012.	

PYTHON PROGRAM LIST

1. Write a python program that displays the following information: Your name, Full address Mobile number, College name, Course subjects.

2. Write a python program to find the largest three integers using if-else and conditional operator.

3. Write a python program that asks the user to enter a series of positive numbers (The user should enter a negative number to signal the end of the series) and the program should display the numbers in order and their sum.

4. Write a python program to find the product of two matrices [A]mxp and [B]pxr

5. Write recursive functions for GCD of two integers.

6. Write recursive functions for the factorial of positive integer

7. Write recursive functions for Fibonacci Sequence up to given number n.

8. Write recursive functions to display prime number from 2 to n.

9. Write a python program that writes a series of random numbers to a file from 1 to n and display.

10. Write a python program to sort a given sequence: String, List and Tuple.

11. Write a python program to make a simple calculator.

12. Write a python program for Linear Search.

13. Write a python program for Binary Search.

14. Write a python program to implement merge sort.

15. Write a python program to find the sum of array of numbers.

16. Write a python program to find the distance between two points.

17. Write a python program for Inheritance.

18. Write a python program to slice a given list.

19. Write a python program to count the number of words.

20. Write a python program to copy a file.

21. Write a python program to check the given password is correct or not.

SKILL- 3 - BSc CT: NETWORK SECURITY AND MANAGEMENT

UNIT I Introduction: Why Network Security is needed – Management principles – Security principles - Network management - Security attacks – Qualities of a Good Network. **Organizational Policy and Security:** Security policies, Standards and Guidelines – Information Policy – Security Policy - Physical Security – Social Engineering – Security Procedures – Building a Security Plan. **Security Infrastructure:** Infrastructure Components - Goals of Security Infrastructure – Design Guidelines – Security Models.

UNIT II Cryptography: Terminology and background – Data Encryption Methods – Cryptographic Algorithms- Secret Key Cryptography - Public key cryptography – Message Digest – Security Mechanisms – Speech Cryptography. **Hardware and Software Security:** Hardware security – Smart Card – Biometrics – Virtual Private Networks (VPNs) - Trusted Operating Systems – Pretty Good Privacy (PGP) – Security Protocols. **Database Security:** Introduction to Database – Characteristics of a Database Approach – Database Security Issues - Database Security – Vendor-Specific Security – Data Warehouse Control and Security.

UNIT III Intrusion Detection Systems: What is not ad IDS – Infrastructure of IDS – Classification of Intrusion Detection Systems – Host-Based IDS – Network-Based IDS - Anomaly Vs Signature Detection – Manage an IDS – Intrusion Detection Tools – IDS Products and Vendors. **Network Security:** Fundamental Concepts – Identification and Authentication – Access Control – A Model for Network Security – Malicious Software – Firewalls.

UNIT IV Network Management: Goal of Network Management – Network Management Standards – Network Management Model – Infrastructure for Network Management - Simple Network Management Protocol (SNMP). **Security Management:** Security Plan - Security Analysis - Change Management - Disaster Recovery - Systems Security Management - Protecting Storage Media- Protection of System Documentation -Exchanges of Information and Software – Security Requirements of Systems.

UNIT V Electronic Mail Policy: Electronic Mail – What are the E-mail threats that organization_s face - Why do you need an E-mail Policy - How do you create an E-mail Policy - Publishing the E-mail Policy - University E-mail Policy. **Security of Internet Banking Systems:** Introduction Banking System – Security Problem – Methodology for Security Problem – Schematic flow of Internet Banking – A layered approach to security.

Text Book:

1. Network Security and Management, Brijendra Singh, PHI 2007.

SEMESTER-6

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**VI**
Subject	**CORE 11: GRAPHICS AND MULTIMEDIA**

Subject Description: This subject deals with Graphics Concepts and Multimedia methodologies.

Goal: Mathematical Knowledge on Graphics and Technical background of Multimedia.

Objective: To inculcate knowledge on Graphics & Multimedia concepts.

(GRAPHICS – UNITS I & II)

UNIT I: Output Primitives: Points and Lines – Line-Drawing algorithms – Loading frame Buffer – Line function – Circle-Generating algorithms – Ellipse-generating algorithms. Attributes of Output Primitives: Line Attributes – Curve attributes – Color and Grayscale Levels – Area-fill attributes – Character Attributes.

UNIT II: 2D Geometric Transformations: Basic Transformations – Matrix Representations – Composite Transformations – Other Transformations. 2D Viewing: The Viewing Pipeline –

Viewing Co-ordinate Reference Frame – Window-to-Viewport Co-ordinate Transformation - 2D Viewing Functions – Clipping Operations.

(MULTIMEDIA – UNITS III, IV &V)

UNIT III: Text: Types of Text – Unicode Standard – Font – Insertion of Text – Text compression – File formats. Image: Image Types – Seeing Color – Color Models – Basic Steps for Image Processing – Scanner – Digital Camera – Interface Standards – Specification of Digital Images – CMS – Device Independent Color Models – Image Processing software – File Formats – Image Output on Monitor and Printer.

UNIT IV: Audio: Introduction – Acoustics – Nature of Sound Waves – Fundamental Characteristics of Sound – Microphone – Amplifier – Loudspeaker – Audio Mixer – Digital Audio – Synthesizers – MIDI – Basics of Staff Notation – Sound Card – Audio Transmission – Audio File formats and CODECs – Audio Recording Systems – Audio and Multimedia – Voice Recognition and Response - Audio Processing Software.

UNIT V: Video: Analog Video Camera – Transmission of Video Signals – Video Signal Formats – Television Broadcasting Standards – PC Video – Video File Formats and CODECs – Video Editing – Video Editing Software. Animation: Types of Animation – Computer Assisted Animation – Creating Movement – Principles of Animation – Some Techniques of Animation – Animation on the Web – Special Effects – Rendering Algorithms. Compression: MPEG-1 Audio – MPEG-1 Video - MPEG-2Audio – MPEG-2 Video.

TEXT BOOKS:

1. Computer Graphics, Donald Hearn, M.Pauline Baker, 2nd edition, PHI. *(UNIT-I: 3.1-3.6,4.1-4.5 & UNIT-II: 5.1-5.4,6.1-6.5)*

2. Principles of Multimedia, Ranjan Parekh, 2007, TMH. *(UNIT III: 4.1-4.7,5.1-5.16 UNIT-IV: 7.1-7.3,7.8-7.14,7.18-7.20,7.22,7.24,7.26-28 UNIT-V: 9.5-9.10,9.13,9.15,10.10-10.13)*

REFERENCE BOOKS:

1. Computer Graphics, Amarendra N Sinha, Arun D Udai, TMH.

2. Multimedia: Making it Work, Tay Vaughan, 7th edition, TMH.

Course	**BSc CS, IT, CT, SS, CSA, MM & B.C.A (Regular)**
Effective from	**2016-2017 and Onwards**
Semester	**VI**
Subject	**CORE LAB 7:** **PROGRAMMING LAB – GRAPHICS AND MULTIMEDIA**

Graphics:

1. Write a program to rotate an image.

2. Write a program to drop each word of a sentence one by one from the top.

3. Write a program to drop a line using DDA Algorithm.

4. Write a program to move a car with sound effect.

5. Write a program to bounce a ball an move it with sound effect.

6. Write a program to test whether a given pixel is inside or outside or on a polygon.

Multimedia:

1. Create Sun Flower using Photoshop.

2. Animate Plane flying in the Clouds using Photoshop.

3. Create Plastic Surgery for the Nose using Photoshop.

4. Create See-through text using Photoshop.

5. Create a Web Page using Photoshop.

6. Convert Black and White Photo to Color Photo using Photoshop.

ELECTIVE –II: ANIMATION TECHNIQUES

UNIT I: What is meant by Animation – Why we need Animation – History of Animation – Uses of Animation – Types of Animation – Principles of Animation – Some Techniques of Animation – Animation on the WEB – 3D Animation – Special Effects - Creating Animation.

UNIT II: Creating Animation in Flash**:** Introduction to Flash Animation – Introduction to Flash – Working with the Timeline and Frame-based Animation - Working with the Timeline and Tween-based Animation – Understanding Layers - Actionscript.

UNIT III: 3D Animation & its Concepts – Types of 3D Animation – Skeleton & Kinetic 3D Animation – Texturing & Lighting of 3D Animation – 3D Camera Tracking – Applications & Software of 3D Animation.

UNIT IV: Motion Caption – Formats – Methods – Usages – Expression – Motion Capture Software_s – Script Animation Usage – Different Language of Script Animation Among the Software.

UNIT V: Concept Development –Story Developing –Audio & Video – Color Model – Device Independent Color Model – Gamma and Gamma Correction - Production Budgets - 3D Animated Movies.

TEXT BOOKS:

1. Principles of Multimedia, Ranjan Parekh, 2007, TMH. (Unit I, Unit V)
2. Multimedia Technologies, Ashok Banerji, Ananda Mohan Ghosh, McGraw Hill Publication. (Unit II: Chapter 10)
3. Text for Unit III, IV & V is appended.

ELECTIVE -II : MIDDLEWARE TECHNOLOGIES

UNIT I: Client-Server architecture: 2-tier model – 3-tier model – n-tier model – J2EE architecture – DOTNET architecture – MVC architecture

UNIT II: Presentation services: Servlets – JSP – Interaction services: RMI – CORBA – XML – JAXP - JMS – Data Management services: JDBC

UNIT III: Component model: EJB: Session Beans: Stateless and Stateful – Entity Beans – CMP and BMP - Message Driven Beans

UNIT IV: ASP.NET : Introduction – architecture – ASP.NET Runtime – Internet Information Services – Visual Web Developer Web Server – ASP.NET Parser – Assembly – Page class. Web Server Controls – HTML Controls – AdRotator and Calendar controls – Validation Controls – Security Management.

UNIT V: ASP.NET and ADO.NET: System.Data.SqlClient and Xml namespaces – Provider objects and Consumer objects – Disconnected data access – GridView FormView. Web Services: Provider – WSDL – UDDI – SOAP – HTTP – Developing simple web services – Connecting a Web Service to a data source – Developing ASP.NET Clients for Web Services.

TEXT BOOKS:

1. Justin Couch and Daniel H Steinberg, "J2EE bible", Willey India Pvt. Ltd, New Delhi, 2002.
2. Paul Tremblett, "Instant Enterprise Java Beans", TMH Publishing company, New Delhi, 2001

ELECTIVE-II : COMPUTER INSTALLATION AND SERVICING

UNIT I: PC SYSTEM Personal Computer System - Functional Blocks - System Unit - Display Unit - Keyboard. INSIDE PC Motherboard - BIOS - CMOS-RAM – Motherboard types – Processors – Chipsets – USB. ON-BOARD MEMORY PC_s Memory Organization - Memory packaging - I/O Ports - USB Port.

UNIT II: Floppy Disk Drive and Controller - Hard Disk Drive and Controller, MMX – Multimedia Extensions.

UNIT III: Input Devices - Monitors and Display Adapters.

UNIT IV: Output Devices DOT Matrix Printer - Printer Controller - Laser Printer - Inkjet Printer. Computer Installation Power supply - PC Installation.

UNIT V: Troubleshooting and servicing POST, Trouble shooting the mother board - Trouble shooting the Keyboard - Trouble shooting the disk devices - Trouble shooting the printer. Maintenance Diagnostic Software_s - Data Security. Computers and Communication Networking – Modem - Internet.

TEXT BOOK:

1. Computer Installation and Servicing, 2nd Edition, D.Balasubramaniam, Tata McGraw-Hill, 2005.

ELECTIVE-III : DATA MINING

Subject Description: This Subject deals with the Data Mining

Goal: To learn about Data Mining

Objective: On Successful Completion of this subject the students should have knowledge on Data mining Concepts

UNIT I: Basic Data Mining Tasks – Data Mining Versus Knowledge Discovery in Data Bases – Data Mining Issues – Data Mining Matrices – Social Implications of Data Mining – Data Mining from Data Base Perspective.

UNIT II: Data Mining Techniques – a Statistical Perspective on data mining – Similarity Measures – Decision Trees – Neural Networks – Genetic Algorithms.

UNIT III: Classification: Introduction – Statistical – Based Algorithms – Distance Based Algorithms – Decision Tree – Based Algorithms – Neural Network Based Algorithms – Rule Based Algorithms – Combining Techniques.

UNIT IV: Clustering: Introduction – Similarity and Distance Measures – Outliers – Hierarchical Algorithms. Partitional Algorithms.

UNIT V: Association Rules: Introduction - Large Item Sets – Basic Algorithms – Parallel & Distributed Algorithms – Comparing Approaches – Incremental Rules – Advanced Association Rules Techniques – Measuring the Quality of Rules.

TEXT BOOK:

1. Margaret H.Dunbam, Data Mining Introductory and Advanced Topics, Pearson Education – 2003.

REFERENCE BOOK:

1. Jiawei Han & Micheline Kamber, Data Mining Concepts & Techniques, 2001 Academic Press.

ELECTIVE – III: EMBEDDED SYSTEMS

UNIT I: Introduction to Embedded System: An Embedded System – Processor in the System – Other Hardware units – Software embedded into a system – Exemplary embedded system – Embedded system on chip and in VLSI circuit. Processor and Memory organization: Structural units in a processor – Processor selection – Memory devices – Memory selection - Allocation of memory – DMA – Interfacing processor, memories and I/O devices

UNIT II: Devices and buses for device networks: I/O devices – Timer and counting devices – Serial communication – Host system. Device drivers and Interrupts servicing mechanism: Device drivers – Parallel port device drivers – Serial port device drivers – Device drivers for IPTD – Interrupt servicing mechanism – Context and the periods for context-switching, dead- line and interrupt latency

UNIT III: Programming concepts and embedded programming in C and C++: Software programming in ALP and C – C program elements – Header and source files and processor directives – Macros and functions – Data types – Data structures – Modifiers – Statements – Loops and pointers – Queues – Stacks – Lists and ordered lists – Embedded programming in C++ - Java – C program compiler and cross compiler – Source code for engineering tools for embedded C / C++ - Optimization of memory needs

UNIT IV: Program modeling concepts in single and multi processor systems: Modeling process for software analysis before software implementation – Programming models for event controlled or response time constrained real time programs – Modeling of multiprocessor systems. Software engineering practices: Software algorithm complexity – Software development process life cycle and its models – Software analysis – Software design – Implementation – Testing, Validation and debugging – Software maintenance

UNIT V: Inter-process communication and synchronization of processes, tasks and threads: Multiple processor – Problem of sharing data by multiple tasks and routines – Inter process communication. Real time operating systems: Operating system services – I/O subsystem – Network operating systems – Real time and embedded operating systems – Interrupt routine in RTOS environment – RTOS task scheduling – Performance metric in scheduling

TEXT BOOK:

1. Raj Kamal, ― Embedded Systems – Architecture, Programming and Design, TMH, 2007

ELECTIVE – III: INTERNET OF THINGS

UNIT I: Introduction - Definition & characteristics of IoT - physical design of IoT - logical design of IoT - IoT enabling Technologies - IoT levels & Deployment templates. Domain specific Iots : Home Automation - cities - Environment - Energy - retail - logistics - Agriculture - Industry i Health and life style.

UNIT II: IoT and M2M - Deference between Iot and M2M - SDN and NFV for lot - IoT systems management - SNMP - YANG - NETOPEER

UNIT III: IoT platforms design Methodology - purpose and specification - process specification - Domain model specification - Information model specification - Service specification - IoT level specification - functional view specification - operational view specification - Device and component Integrators - Application Development.

UNIT IV: Logical design using python - Installing python - type conversions - control flow - functions - modules - File handling - classes. IoT physical devices and End points, building blocks of IoT device - Raspberry Pi - Linux on Raspberry Pi - Raspberry Pi interfaces.

UNIT V: IoT physical servers & cloud computing - WAMP - Xively cloud for IoT - python Web application frame work - Amazon web services for IoT.

Text Book	:	Internet of Things - A hands on Approach
Authors	:	Arshdeep Bahga, Vijay Madisetti
Publisher	:	Universities press.

SKILL-4 - BSc CT: NETWORK SECURITY LAB

1. Write a program to encrypt the data using the encryption methods:

   i.   Substitution Ciphers
   ii.   Transposition Ciphers

2. Write a program to implement DES algorithm.

3. Write a program to implement the Public Key Cryptography using Diffie - Hellman Algorithm.

4. Write a program to implement the Public Key Cryptography using RSA algorithm.

5. Write a program to secure the Database using User Authentication Security.

6. Write a server security program for Dynamic Page Generation.

BHARATHIAR UNIVERSITY: COIMBATORE-641 046

B.Sc. CS/IT/CT/SS/MM/CSA &BCA

(For the students admitted from the academic year **2016-2017** and onwards)

CBCS PATTERN GUIDELINES FOR PROJECT WORK

- The aim of the project work is to acquire practical knowledge on the implementation of the programming concepts studied.

- Each student should carry out individually one project work and it may be a work using the software packages that they have learned or the implementation of concepts from the papers studied or implementation of any innovative idea focusing on application oriented concepts.

- The project work should be compulsorily done in the college only under the supervision of the department staff concerned.

Viva Voce

- Viva-Voce will be conducted at the end of the year by both Internal (Respective Guides) and External Examiners, after duly verifying the **Annexure Report** available in the College, for a total of 200 marks at the last day of the practical session.

- Out of 200 marks, 160 marks for project report and 40 marks for Viva Voce.

PROJECT WORK
TITLE OF THE DISSERTATION

Bonafide Work

Done by STUDENT

NAME REG. NO.

Dissertation submitted in partial fulfillment of the

requirements for the award of <Name of the Degree>

of Bharathiar University, Coimbatore-46**.**

College emblem

GUIDE   HOD

Submitted for the Viva-Voce Examination held on _____

Internal Examiner   External Examiner

MONTH – YEAR

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