C. ABDUL HAKEEM COLLEGE

(AUTONOMOUS)

[Affiliated to Thiruvalluvar University, Vellore]

Melvisharam-632 509

Syllabus under CBCS Pattern

Learning Outcome Based Curriculum Frame work [LOCF]

with effect from 2018 onwards

B.C.A.

Prepared By

Department of Computer Applications

Programme Outcomes (PO) for Bachelor of Computer Applications (B.C.A):

PO1: Critical Thinking and Scientific Reasoning

Capable of critical thought after attaining basic disciplinary knowledge and understanding of major concepts, theoretical principles and experimental findings for scientific reasoning in the field of basic sciences.

PO2: Problem Solving

Ability to have effective problem solving skills in relevance to the society based on the knowledge and skills acquired from sciences.

PO3: Skill Development

Capable of demonstrating research, including wider interdisciplinary areas, as well as the ability to use current instruments/information technology in science-related fields. Improving the standard of science with a strong scientific temperament, leadership, and governing abilities.

PO4: Computational/Digital Literacy

Capable of locating, retrieving, and evaluating various science-related needs using computer/mobile-based digital literacy and search resources.

PO5: Effective Communication

Ability to communicate deep technical science information in writing and orally.

PO6: Moral and Ethical Awareness

Capable of carrying out their work with integrity and accuracy, avoiding unethical behaviors such as exaggeration, falsification, misrepresentation or plagiarism.

PO7: Social Responsibility

Demonstrate numerous social issues, empathy and equity-based personal growth, as well as the opportunity to volunteer in real life and function as a true citizen.

PO8: Life-long Learning

Capable of self-paced and self-directed learning for personal growth, as well as imparting knowledge/skills for society re-skilling.

PSO for B.C.A.

PSO1: An ability to understand the Principles and working of Computer Systems.

PSO2: Project Development Skills: An ability to understand the structure and development Methodologies of Software Systems.

PSO3: Comprehend, explore and build up Computer Programs in the allied areas like Algorithms, System Software, Multimedia, Web Design and Data Analytics for efficient design of Computer-based Systems of varying complexity.

PSO4: The Program Prepares the young professional for understand the concept of virtualization and different products for doing the same.

PSO 5: The program Prepares the young Professional for understand how the different IT Services can be Provided with the help of Windows Azure, AWS, Google Cloud.

PSO 6: The Program Prepares the young Professional for a range of Computer Applications, Computer Organization, techniques of Computer Networking, Software Engineering – Commerce, Web Designing, Big Data, Io T, Python and Advance JAVA.

PSO 7: The Program Prepares the young Professional for Fundamentals of Cloud computing.

PSO 8: In order to enhance Programming skills of the young IT Professionals, the program has introduced the concept of project development in each language / technology learnt during Semester.

PSO 9: To develop skills on Cloud Computing technical Planning.

PSO 10: Learn Programming language such as Java, C++, HTML, SQL, etc….

PSO 11: Information about various computer applications and latest development in IT and communication system is also provided.

PSO 12: BCA gives a number of opportunities to individuals to go ahead and shine in their lives.

For Candidates admitted from June 2018 onwards)
C. ABDUL HAKEEM COLLEGE (AUTONOMOUS), MELVISHARAM-632509
DEPARTMENT OF COMPUTER APPLICATION

B.C.A. COMPUTER APPLICATION
CBCS PATTERN (REGULATIONS 2018 - 2019)

The Course of Study, Credits and Scheme of Examination
I YEAR

S.No	Part	Course Title	Subject Codes	Hrs/ week	Credits	Title of the Paper	Maximum Marks		
I YEAR			**SEMESTER I**				**CIA Mark**	**EXT Mark**	**TOTAL Mark**
1	I	Language	U18FTA102/ U18FUR102	6	4	Tamil/Urdu/ Others-I	25	75	100
2	II	English	U18FEN101	6	4	English-I	25	75	100
3	III	Main-Theory	U18MCA101	6	5	Fundamentals of IT and C Programming	25	75	100
4	III	Main-Practical	U18MCAP11	3	2	Practical-I MS Office and C Programming Lab	25	75	100
5	III	Allied-I Theory	U18AMA101 / U18AMA102	7	5	Mathematics-I/ Mathematical Foundations-I	25	75	100
6	IV	Environmental Studies	U18CES101	2	2	Environmental Studies	25	75	100
				30	**22**		**150**	**450**	**600**
I YEAR			**SEMESTER II**				**CIA Mark**	**EXT Mark**	**TOTAL Mark**
7	I	Language	U18FTA202 / U18FUR202	6	4	Tamil/Urdu/Others-II	25	75	100
8	II	English	U18FEN201	4	4	English-II	25	75	100
9	III	Main-Theory	U18MCA201	6	4	C++ and Data Structure	25	75	100
10	III	Main-Practical	U18MCAP21	3	3	Practical-II C++ and Data Structure Lab	25	75	100
11	III	Allied-I Theory	U18AMA201/ U18AMA202	7	5	Mathematics-II/ Mathematical Foundations-II	25	75	100
12	IV	Soft Skills	U18CSS201	2	1	Soft Skills	25	75	100
13	IV	Value Education	U18CVE201	2	2	Value Education	25	75	100
				30	**23**		**175**	**525**	**700**

S.No	Part	Course Title	Subject Codes	Hrs/ week	Credits	Title of the Paper	Maximum Marks		
II YEAR		**SEMESTER III**					**CIA Mark**	**EXT Mark**	**TOTAL Mark**
14	III	Main-Theory	U18MCA301	5	3	Python	25	75	100
15	III	Main-Theory	U18MCA302	5	3	Computer Architecture	25	75	100
16	III	Main-Theory	U18MCA303	5	3	Advance Data Structure & Algorithm	25	75	100
17	III	Main-Practical	U18MCAP31	3	3	Practical-III Python Lab	25	75	100
18	III	Allied-II Theory	U18ACM301/ U18AMCA301	7	4	Financial and Management Accounting-I/Object Oriented Analysis & Design-I	25	75	100
19	IV	Skill Based Subject	U18SCA301	3	3	Operating System **(SBS-I)**	25	75	100
20	IV	Non Major Elective	U18NCA301	2	2	Introduction to Information Technology **(NME-I)**	25	75	100
				30	**21**		**175**	**525**	**700**
II YEAR		**SEMESTER IV**					**CIA Mark**	**EXT Mark**	**TOTAL Mark**
21	III	Main-Theory	U18MCA401	5	4	Advance Java Programming	25	75	100
22	II	Main-Theory	U18MCA402	5	3	Computer Graphics	25	75	100
23	III	Main-Theory	U18MCA403	4	3	Software Engineering Concepts	25	75	100
24	III	Main-Practical	U18MCAP41	4	3	Practical-IV Advance Java Lab	25	75	100
25	III	Allied-II Theory	U18ACM401/ U18AMCA401	7	6	Financial and Management Accounting-II/ Object Oriented Analysis & Design-II	25	75	100
26	IV	Skill Based Subject	U18SCA401	3	3	Internetworking and TCP/IP **(SBS-II)**	25	75	100
27	IV	Non Major Elective	U18NCA401	2	2	HTML Basics **(NME-II)**	25	75	100
				30	**24**		**175**	**525**	**700**

II YEAR

S.No	Part	Course Title	Subject Codes	Hrs/ week	Credits	Title of the Paper	Maximum Marks		
III YEAR			**SEMESTER V**				**CIA Mark**	**EXT Mark**	**TOTAL Mark**
28	III	Main- Theory	U18MCA501	6	6	Database Management System	25	75	100
29	III	Main-Theory	U18MCA502	6	5	Visual Basic Programming	25	75	100
30	III	Main-Practical	U18MCAP51	6	3	Practical-V Visual Basic Programming Lab	25	75	100
31	III	Main-Practical	U18MCAP52	6	3	Practical-VI Oracle Lab	25	75	100
32	III	Elective	U18ECA501/ U18ECA502/ U18ECA503	4	3	**(Choose any one)** Digital Logic and Microprocessor/ Programming in C #/ Software Testing **(Elective-I)**	25	75	100
33	III	Main	U18EINP51	0	2	Internship Training	25	75	100
34	IV	Skill Based Subject	U18SCA501	2	2	Cryptography and Network Security **(SBS-III)**	25	75	100
				30	**24**		**175**	**525**	**700**
III YEAR			**SEMESTER VI**				**CIA Mark**	**EXT Mark**	**TOTAL Mark**
35	III	Main- Theory	U18MCA601	6	6	Web Programming	25	75	100
36	III	Main-Theory	U18MCA602	6	5	R Programming	25	75	100
37	III	Main-Practical	U18MCAP61	3	3	Practical-VII Web Programming Lab	25	75	100
38	III	Main-Practical	U18MCAP62	4	3	Practical-VIII R Programming Lab	25	75	100
39	III	Main-Project	U18MCAP60	4	3	Project and Viva Voce	25	75	100
40	III	Elective	U18ECA601/ U18ECA602/ U18ECA603	4	3	**(Choose any one)** Grid and Cloud Computing/Mobile Computing/ Introduction to Data Mining **(Elective-II)**	25	75	100
41	IV	Skill Based Subject	U18SCA601	3	2	Big-Data Analytics **(SBS-IV)**	25	75	100
42	V	Extension Activities	U18CEA601	0	1	Extension Activities	100	-	100
				30	**26**		**275**	**525**	**800**

OVERALL COURSE
CREDITS & MARKS STRUCTURE

PART	COURSE TITLE	NO OF PAPERS	HOURS	CREDITS	MARKS FOR EACH PAPER	TOTAL MARKS
I	Tamil/Urdu/Others	2	12	8	100	200
II	English	2	10	8	100	200
III	Main-Theory	12	65	50	100	1200
III	Main- Practical	8	32	23	100	800
III	Main- Project	1	4	3	100	100
III	Allied-I Theory	2	14	10	100	200
III	Allied-II Theory	2`	14	10	100	200
III	Major Elective	2	8	6	100	200
III	Internship Training	1	0	2	100	100
IV	Non Major Elective	2	4	4	100	200
IV	Skill Based-Subjects	4	11	10	100	400
IV	Soft Skills	1	2	1	100	100
IV	Environmental Studies	1	2	2	100	100
IV	Value Education	1	2	2	100	100
V	Extension Activities	1	0	1	100	100
	TOTAL	**42**	**180**	**140**	**-**	**4200**

PART TYPE	COURSE TYPE	NUMBER OF PAPERS	NUMBER OF HOURS	CREDITS	MARKS
I	TAMIL/URDU/OTHERS	2	12	8	200
II	ENGLISH	2	10	8	200
III	MAJOR, ALLIED, ELECTIVE & INTERNSHIP TRAINING	28	137	104	2800
IV	NON-MAJOR, EVS, SOFT SKILLS, SKILL BASED & VALUE EDUCATION	9	21	19	900
V	EXTENSION ACTIVITIES	1	-	1	100
	TOTAL	**42**	**180**	**140**	**4200**

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Re-accredited by NAAC with 'A' Grade.
Hakeem Nagar, Melvisharam – 632 509, Vellore District.

Syllabus for B.Com., Commerce / B.B.A., /B.C.A., Course effective from the year 2018-2019

Year: Ist Year **Subject Code : U18FTA102** **Semester: I**

Part : I **Title: TAMIL - I**

Credits: 4 **Max. Marks. 75**

பாடத்திட்டம்

அலகு–I பக்தி

1. இராமலிங்கஅடிகள் - திருவருட்பா - பிள்ளைச் சிறுவிண்ணப்பம் (10 பாடல்கள்)
2. உமறுப்புலவர் - சீறாப்புராணம் - மழைஅழைப்பித்தபடலம்(21 பாடல்கள்)
3. எச்.ஏ.கிருட்டிணப்பிள்ளை - இரட்சணயாத்திரிகம் - சிலுவைப் பாடு(26பாடல்கள்)

அலகு–II கவிதை

1. பாரதியார் - 1.காணிநிலம் வேண்டும்...
   2.தேடிச் சோறுநிதந் தின்று...
2. பாரதிதாசன் - உலகப்பன் பாட்டு
3. கவிமணி - ஆசியஜோதி–'அருள் உரிமை'
4. அபதுல் ரகுமான் - ஆறாதஅறிவு
5. சிற்பி - முள்... முள்...முள்...

அலகு–III உரைநடை

1. மணவை முஸ்தபா - தமிழில் அறிவியல்
2. எம்.ஆர்.எம்.அப்துற் றஹீம் - வாழ்க்கையில் வெற்றி
3. இறையன்பு - தேசம் எனும் நேசம்

அலகு–IV சிறுகதை

1. ஆ.விநாயக மூர்த்தி - பரிசு
2. தோப்பில் முகமதுமீரான் - தங்கவயல்
3. வைரமுத்து - ஏழையின் தாஜ்மகால்

அலகு–V

(அ) இலக்கியவரலாறு

1. பக்தி&சமய இலக்கியங்கள் - அறிமுகம் (சைவம், இசுலாம்,கிறித்தவம்)
2. இக்கால இலக்கியங்கள் - தோற்றமும் வளர்ச்சியும் (கவிதை,உரைநடை,சிறுகதை)

(ஆ) திறனறிப் பயிற்சி

1. அகரவரிசைப்படுத்துதல்
2. வல்லினம் மிகும் இடங்கள்
3. வல்லினம் மிகா இடங்கள்
4. சந்திப்பிழைநீக்குதல்
5. பொதுக் கட்டுரை

பாடத்திட்டம்

அலகு - 1 பக்தி

1. திருமூலர் - திருமந்திரம் (7 பாடல்கள்)
2. மு. மேத்தா - நாயகம் ஒரு காவியம்
   அ. தலைக்கு விலை
   ஆ. சிலந்தி செய்த செயல்
3. சேவியர் - இயேசுவின் கதை
   அ. சிலுவை, ஆ. உன்னதரின் உயிர்ப்பு

அலகு - 2 கவிதை

1. பாரதியார் - கண்ணம்மா என் குழந்தை (முழுவதும்)
2. பாரதிதாசன் - குடும்ப விளக்கு - முதியோர் காதல்
   (தேர்ந்தெடுத்த 10 பாடல்கள்)
3. கவிமணி - ஆறு தன் வரலாறு கூறுதல்
4. நா.காமராசன் - கறுப்பு மலர்கள்
   அ. வானவில், ஆ. கடல்
5. அப்துல் காதர் - மின்னல் திரிகள் -
   மெழுகுவர்த்தியும் ஊதுவத்தியும்

அலகு - 3 உரைநடை

1. அப்துல் ரகுமான் - எம்மொழி செம்மொழி
2. வா.செ. குழந்தைசாமி - அறிவியலும் வறுமையொழிப்பும்
3. வெ. இறையன்பு - நேரம் கடிகாரத்தில் இல்லை

அலகு - 4 சிறுகதை

1. மேலாண்மை பொன்னுசாமி - அன்பூவாசம்
2. வைரமுத்து - இப்படியும் ஒருவன் இறந்தான்
3. வண்ணதாசன் - ஓர் உல்லாசப் பயணம்

அலகு - 5

அ. இலக்கிய வரலாறு

1. பக்தி & சமய இலக்கியங்கள் - அறிமுகம்
   (சைவம், இசுலாம், கிறித்தவம்)
2. இக்கால இலக்கியங்கள் - தோற்றமும் வளர்ச்சியும்
   (கவிதை, உரைநடை, சிறுகதை)

ஆ. திறனறிப் பயிற்சி

1. அகரவரிசைப்படுத்துதல்
2. வல்லினம் மிகும் இடங்கள்
3. வல்லினம் மிகா இடங்கள்
4. சந்திப்பிழை நீக்குதல்
5. பொதுக் கட்டுரை

பார்வை நூல்கள்

1	இலக்கியச் சோலை	-	சி.அப்துல் ஹக்கீம் கல்லூரி வெளியீடு. 2018 சூன் வெளியீடு
2	மினனல் திரிகள்	-	அப்துல் காதர் சல்மா பதிப்பகம்,வாணியம்பாடி, முதல் பதிப்பு,2004
3	இயேசுவின் கதை	-	சேவியர் யாளி பதிவு வெளியீடு, கோடம்பாக்கம் சென்னை- 24 முதல் பதிப்பு -2005
4	எம்மொழி செம்மொழி	-	கவிக்கோ அப்துல் ரகுமான் நேஷனல் பப்ளிஸர்ஸ்,தி.நகர், சென்னை -17 முதல் பதிப்பு -2010
5	தமிழ் இலக்கிய வரலாறு	-	பேரா.மது.ச.விமலானந்தம் அபிராமி பதிப்பகம், இராயபுரம், சென்னை -13 மறு பதிப்பு -2002
6	நற்றமிழ் இலக்கணம்	-	டாக்டர்.சொ.பரமசிவம், பட்டுப் பதிப்பகம், 1269, 32-ஆம் தெரு அண்ணாநகர் மேற்கு, கம்பர் குடியிருப்பு, சென்னை -40 பன்னிரண்டாம் பதிப்பு -2012

C. ABDUL HAKEEM COLLEGE (AUTONOMOUS), MELVISHARAM.

Year : I Subject code: U18FUR102 SEMESTER: I

Part : I Title : URDU-I

Credit: 4 Max. Marks: 75

Prose, Grammar &Letter Writing

OBJECTIVES:	✓ To promote students' proficiency in the basics of Urdu. ✓ To accelerate their zeal to cultivate Writing Skills. ✓ To strengthen their reading and receptive skills.
COURSE OUTCOMES	➢ Students will acquire the required academic efficiency. ➢ They will be learning the techniques of exemplary writing. ➢ They will develop ability to foster fast reading of Texts.

BOOK PRESCRIBED:

"ADAB-E-JAMEEL" Published by Dept. of Urdu,
C. Abdul Hakeem College, Melvisharam.

Unit – I

1.SAIR PAHLAY DARWESH KI –Meer Amman Dehalvi
2.UMEED KI KHUSHI -Sir Syed
3.Letter to the Principal Seeking Leave

Unit – II

1.MIRZA GHALIB KE AKHLAQ WA ADAT – Moulanahali
2.ZUBAIDA KHATOON – Abdul Haleem Sharar
3.Zameer AurUskiKhismien
4.Letter to the Manager of a Firm Seeking Employment

Unit – III

1.NOOR JHAN – Mohamed Hussain Azad
2.SAWERE JO KAL ANKH MERI KHULI – Patras Bukhari
3.Sifat AurUskiKhimein
4.Letter to a Publisher of Book Seller Placing Order for Books

Unit – IV

1.KHUD GHARAZ DOST – Duputi Nazeer Ahmed
2.SIR SYED MARHOOM AUR URDU LITERATURE– Allama Shibli
3.Letter to the Father / Guardian Asking Money for Payment of College Fees

Unit – V

1.Letter to a Friend Inviting Him to Your Sister's Marriage
2.Sifat AurUskiKhimein
3.Fe'l AurUskiKhimein
4.Lawazim-E-Ism
5.Alamat-E-Fael "Nay" Aur Alamat-E-Mafo'ol "Ko" KeQuaide

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for All UG Course effective from the year 2018-2019

Year: I Year Subject Code : **U18FHN101** Semester : I

Part - I Title: **Hindi - I**

Credits: 4 Max. Marks. 75

UNIT – I PROSE: GADYA MUKUR

Lessons prescribed:

1. AATMA NIRBHARTHA by Pt.Balkrishna Bhatt

2. MITRATA by Ramchandra Shukla

3. MADHUR BHASHAN by Gulab Roy

4. HEENGVALA by Subhadrakumari Chouhan

5. AJATSHATRU by Jayshankar Prasad

UNIT – II.APPLIED GRAMMAR-

Prescribed Points: 1. Gender, 2. Number, 3. Causal Verbs,

4.VoicE, 5.Spell Check.

UNIT –III LETTERWRITING:

Prescribed Letters:(Personal & Commercial):

1. Ordering for books, 2. Letter for Employment, 3. Letter of Complaint,

4.Openingan Accounting Banks,5. Letter to Parents, 6. Letter to a Friend.

UNIT –IV FUNCTIONALHINDI - I:Administrative & Business

Terminology : TERMS from English to Hindi & Terms from Hindi to English

UNIT –V FUNCTIONAL HINDI - II: Administrative & Business

Terminology: PHRASES from Hindi to English

BOOK FOR STUDY: GADYA MUKUR, Ed. SHAIK ABDUL WAHAB, RAKA PRAKASHAN, ALLAHABAD, 2011

BOOKS FOR REFERENCE:

1.HINDI VYAKARAN BY SHASTRI & APTE, D.B.H. PRACHARSABHA, CHENNAI, 1998

2. PRAMANIK ALEKHAN AUR TIPPAN, PROF. VIRAJ, RAJPAL & SONS, KASHMERE GATE, DELHI, 2001

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for all I Year UG Course effective from the year 2018-2019

Year:	I Year	**Subject Code:**	**U18FEN101**	Semester: I
Part - I	Title:	ENGLISH - I		
Credits:	4			Max. Marks. 75

UNIT - I **PROSE**

1. The Curse of Untouchability — M.K. Gandhi
2. India and Democracy — Dr. B.R. Ambedkar
3. The Ant and the Grasshopper — W.S. Maugham
4. My Lost Dollar — Stephan Leacock

UNIT – II **POETRY**

1. All the World is a Stage — William Shakespeare
2. La Belle Dame Sans Merci — John Keats
3. Ozymandias — P.B. Shelley
4. River — A.K. Ramanujan

UNIT - III **SHORT STORIES**

1. The Doctor's Word — R. K. Narayan
2. The Model Millionaire — Oscar Wilde

UNIT - IV **ONE-ACT PLAY & BIOGRAPHY**

1. The Refund — Fritz Karinthy
2. Biography of Socrates

UNIT - V **WARM UP**

1. Lexical Skills:

1. Words
2. Synonyms and Antonyms
3. Homonyms, Homophones
4. Words often confused

2. **Descriptive Grammar:**

    1. Describing the Parts of Speech
    2. The Phrase and The Clause
    3. The Sentence and its types
    4. Nouns

3. **Traditional Grammar:**

    1. The Tenses- Introduction

    Present Tense

    - Simple Present Tense
    - Present Continuous Tense
    - Present Perfect Tense
    - Present Perfect Continuous Tense

    2. Voice of the Verb

4. **Communication Skills (LSRW):**

    1. Greeting
    2. Introducing
    3. Inviting someone
    4. Seeking Permission

    English for Communication - I

5. **Composition:**

    1. Letter Writing
    2. Dialogue Writing
    3. Report Writing
    4. Précis Writing
    5. Reading for Comprehension

    English for Communication - I

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for Computer Application effective from the year 2018-2019

Year: I Year **Subject Code: U18MCA101** Semester :I Major - 1

Title: **Fundamentals of IT and C Programming**

Credits: 5 Max. Marks. 75

Objectives	To provide the students basic knowledge of computers and to know the basic of IT and to the C basics programming Knowledge
COURSE OUTCOME(S)	
CO1	❖ To know the basic, computer memory and its storage also about architecture
CO2	❖ Understand input and output media, computer languages and also about computer software
CO3	❖ To get idea about internet tools computer security, trends of IT
CO4	❖ Able to study the c language, its operators and expression, input & output statements, knowledge of using loop control statements
CO5	❖ Usage of arrays, pointers, the study of functions, need of storage class, purpose of structure and union

Objective:

- To provide the students basic knowledge of computers and to know thebasics of IT and to the C basics Programming Knowledge.

UNIT: 1

Computer Basics- Computer Organization and Architecture-

Computer Memoryand Storage [Chapter 1,2 & 3]

UNIT:2

Input Output Media-IT Basics-Computer Programming in

Languages-ComputerSoftware [Chapter 4,8,10 & 11]

UNIT: 3

The Internet-Internet tools-Computer Security-Current and

future trend in IT[Chapter 17, 18, 19 & 23]

UNIT: 4

Introduction to C- The C Declaration-Operators and Expression-

Input and Outputin C-Decision Statements- Loop Control

Statements.

[Chapter 1 to 6]

UNIT: 5

Arrays- Pointers-Functions-Storage Class-

Structure and Union-Files[Chapters-7, 9,10,11,13

& 14]

TEXT BOOK:

1. Introduction to Information Technology, ITL Education Solutions Limited,Second Edition, Pearson Education.
2. Programming with ANSI and Turbo C, Ashok.N.Kamthane, PearsonEducation, Seventh Edition.

REFERENCE BOOKS:

1. Let us C, Kanetkar-BPB publications
2. Programming in C,E.Balagurusamy-TMH
3. The Complete Reference, H.Schild-TMH edition

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for Computer Application effective from the year 2018-2019

I Year Subject Code : **U18MCAP11** Semester : I Year:

Practical - I Title: **MS Office & C Programming Lab**

Credits: 2

Instruction hours/week: 3 **Maximum External Marks: 75**

Objectives	❖ To enhance the basic understanding of Ms word basic ❖ To impart Ms Excel Basics ❖ To make students familiarize with ms power point Basics

MS- Office

1. MS- Word Basics
2. MS- Excel Basics
3. MS-Power Point Basics

C Programming Lab

1. Summation of Series: Sin [X],Cos[X] and Exp[X].Compare with built infunction
2. Counting the number of vowels, constants, words, white space in a line oftext and array of lines
3. Reverse a String and check for palindrome
4. G.C.D. of two numbers using recursion
5. Npr/Ncr [in a Single Program] using recursion
6. Matrix Manipulation: Matrix addition, subtraction and Multiplication
7. Program to sort an element using quick sort
8. Program to find the specified element from array, binary search
9. Program to print student grade using structure
10. Program for Command Line Arguments
11. Program for File Copying

On completion of the course, students will be able to

- Design simple program Using summation of series they are sin(x), cos(x) and exp(x) understand various concepts using recursion provides solution to structure, command line arguments and also about file copying

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for B.Sc.,Physics / Chemistry/ Computer Science effective from the year 2018-2019

Year: I Year Subject Code : **U18AMA101** Semester : I

Allied - 1 Title: **ALLIED MATHEMATICS - I (ALLIED)**

Credits: 5 Max. Marks. 75

OBJECTIVES:	This course covers basic ideas of theory of equations, matrices & calculus.
COURSE OUTCOME(S): At the end of the course, the students will able to:	
CO1	Evaluate the sum of the series by using Binomial, Logarithm, and Exponential series.
CO2	Examine the nature of the roots of the polynomial equation, reciprocal equations and Application of Newton's method to find approximate solution of the polynomial equations.
CO3	Identify the different types of a matrix and calculate eigen values and corresponding eigen vectors of a square matrix.
CO4	Compute nth derivative, Jacobians , Evaluate Curvature, Radius of Curvature ,Construct the PDE by eliminating arbitrary constants, arbitrary functions and solve different types of nonlinear PDE's.

UNIT-I: ALGEBRA

Partial Fractions – Binomial - Exponential and logarithmic Series (without Proof)- Simple problems.

UNIT-II: THEORY OF EQUATIONS

Polynomial Equations with real Coefficients - Irrational roots - Complex roots- Transformation of equation by increasing or decreasing roots by a constant - Reciprocal equations - Newton's method to find a root approximately - Simple problems.

UNIT-III: MATRICES

Symmetric - Skew-Symmetric - Orthogonal and Unitary matrices - Rank of a matrix - Consistency of equations - Eigen roots and eigen vectors - Cayley Hamilton theorem (without proof)-Verification and computation of inverse matrix.

UNIT-IV: DIFFERENTIAL CALCULUS

n^{th} derivatives - Leibnitz theorem (without proof) and applications - Jacobians - Concepts of polarco-ordinates-Curvature and radius of curvature in Cartesian co-ordinates.

UNIT-V: PARTIAL DIFFERENTIAL EQUATIONS

Formation - complete integrals and general integrals - Four standard types - Lagrange's equation and simple problems.

Recommended Text:

P.Duraipandian and S.Udayabaskaran,(1997) Allied Mathematics, Vol. I & II. Muhil Publishers,Chennai.

Reference Books:

1. P.Balasubramanian and K.G.Subramanian,(1997) Ancillary Mathematics. Vol. I & II. TataMcGraw Hill, New Delhi.

2. S.P.Rajagopalan and R.Sattanathan,(2005) Allied Mathematics .Vol. I & II. Vikas Publications,New Delhi.

3. P.R.Vittal (2003) Allied Mathematics . Marghan Publications, Chennai

4. P.Kandasamy, K.Thilagavathy (2003) Allied Mathematics Vol-I, II S.Chand & company Ltd., NewDelhi-55.

5. Isaac, Allied Mathematics. New Gamma Publishing House, Palayamkottai**.**

C. Abdul Hakeem College (Autonomous), Melvisharam.
Syllabus for Computer Application effective from the year 2018-2019

Year: I Year Subject Code: **U18AMA102** Semester: I Major - 1

Max. Marks. 75 Title: **MATHEMATICAL FOUNDATION - I** Credits: 5

Objectives	This course covers basic ideas of symbolic logic, sets, binary operations, Differentiations & Analytical geometry of two dimensions.
COURSE OUTCOME(S)	
CO1	❖ Define various types of logical operators and test whether the given argument is valid or not
CO2	❖ Show different types of properties of sets by using venn diagram and find the number of elements of a set
CO3	❖ Distinguish between permutations and combinations and solve problems using permutation and combination formulas
CO4	❖ Find the value of the limits and compute the derivative of a function calculate the radius of the curvature.
CO5	❖ Drive equations of a straight line and circle in different forms and also express the equation of circle passing through the points.

UNIT-I: SYMBOLIC LOGIC

Proposition, Logical operators, conjunction, disjunction, negation, conditional and biconditional operators, converse, Inverse, Contra Positive, logically equivalent, tautology and contradiction. Arguments and validity of arguments.

UNIT-II: SET THEORY

Sets, set operations, Venn diagram, Properties of sets, number of elements in a set, Cartesian products, relations & functions.

Relations: Equivalence relation. Equivalence class, partially and totally Ordered sets.

Functions: Types of Functions, Composition of Functions.

UNIT-III: BINARY OPERATIONS

Types of Binary Operations: Commutative, Associative, Distributive and identity.

Boolean **Algebra:** simple properties.

Permutations and Combinations.

UNIT-IV: DIFFERENTIATION

Simple problems using standard limits,

$\lim_{x\to a}\frac{x^n-a^n}{x-a}$, $\lim_{x\to 0}\frac{\sin x}{x}$, $\lim_{x\to 0}\frac{\tan x}{x}$, $\lim_{x\to 0}\frac{e^x-1}{x}$, $\lim_{n\to\infty}(1+\frac{1}{n})^n$, $\lim_{n\to o}(1+n)^{\frac{1}{n}}$

Differentiation, successive differentiation, Leibnitz theorem, Tangent and normal, angle between two curves, Curvature and radius of Curvature (Cartesian coordinates).

UNIT-V: TWO DIMENSIONAL ANALYTICAL GEOMETRY

Straight Lines - Circles.

Recommended Text:

P.R.Vittal, Mathematical Foundations - Margham Publication, Chennai.

Reference Books:

1. U. Rizwan, Mathematical Foundation - SciTech, Chennai

2. V.Sundaram & Others, Dircrete Mathematical Foundation - A.P.Publication, sirkali.

3. P.Duraipandian & Others, Analytical Geometry 2 Dimension - Emerald publication 1992 Reprint.

4. Manicavachagom pillay & Natarajan. Analytical Geometry part I - Two Dimension - S.Viswanathan (printers & publication) Put Ltd., 1991.

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for All UG I year effective from the year 2018-2019

Year: I Year Subject Code U18CES11 Semester I

Part IV Title: Environmental Studies

Credits: 2 Max. Marks. 75

Objectives	To understand the environment around us and to conserve our nature. Course outcome: At the end of course the
COURSE OUTCOME(S)	
CO1	❖ Describe the available food and natural resources
CO2	❖ Explain the structure and functions of ecosystem
CO3	❖ Elaborate the control of environmental pollution
CO4	❖ Analyze the social issues of human beings.

UNIT-I: INTRODUCTION TO ENVIRONMENTAL SCIENCES: NATURAL RESOURCES : Environmental Sciences - Relevance - Significance - Public awareness - Forest resources - Water resources - Mineral resources - Food resources - conflicts over resource sharing - Exploitation - Land use pattern - Environmental impact - fertilizer - Pesticide Problems - case studies.

UNIT-II: ECOSYSTEM, BIODIVERSITY AND ITS CONSERVATION: Ecosystem - concept - structure and function - producers, consumers and decomposers - Food chain - Food web - Ecological pyramids - Energy flow - Forest, Grassland, desert and aquatic ecosystem. Biodiversity - Definition - genetic, species and ecosystem diversity - Values and uses of biodiversity - biodiversity at global, national (India) and local levels - Hotspots, threats to biodiversity - conservation of biodiversity - Insitu & Exsitu.

UNIT-III: ENVIRONMENTAL POLLUTION AND MANAGEMENT Environmental Pollution - Causes - Effects and control measures of Air, Water, Marine, soil, solid waste, Thermal, Nuclear pollution and Disaster Management - Floods, Earth quake, Cyclone and Landslides. Role of individuals in prevention of pollution - pollution case studies.

UNIT-IV: SOCIAL ISSUES - HUMAN POPULATION Urban issues - Energy - water conservation - Environmental Ethics - Global warming - Resettlement and Rehabilitation issues - Environmental legislations - Environmental production Act. 1986 - Air, Water, Wildlife and forest conservation Act - Population growth and Explosion - Human rights and Value Education - Environmental Health - HIV/AIDS - Role of IT in Environment and Human Health - Women and child welfare - Public awareness - Case studies.

UNIT-V: FIELD WORK Visit to a local area / local polluted site / local simple ecosystem - Report submission

Suggested Readings:

1. KUMARASAMY, K., A.ALAGAPPA MOSES AND M.VASANTHY, 2004. ENVIRONMENTAL STUDIES, BHARATHIDSAN UNIVERSITY PUB, 1, TRICHY

2. RAJAMANNAR, 2004, ENVIRONEMNTAL STUDIES, EVR COLLEGE PUB, TRICHY

3. KALAVATHY,S. (ED.) 2004, ENVIRONMENTAL STUDIES, BISHOP HEBER COLLEGE PUB., TRICHY

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for B.Com., Commerce / B.B.A., /B.C.A., Course effective from the year 2018-2019

Year:	I Year	**Subject Code :**	**U18FTA202**	Semester : II
Part I	Title:		TAMIL - II	
Credits:	4			Max. Marks. 75

பாடத்திட்டம்

அலகு–I சங்க இலக்கியங்கள்

1. குறுந்தொகை - 6 செய்யுட்கள்
2. புறநானூறு - 6செய்யுட்கள்
3. சிறுபாணாற்றுப்படை - 1 முதல் 111 அடிவரை

அலகு–II நீதி இலக்கியங்கள்

1. திருக்குறள் - 1.பெரியாரைத் துணைக் கோடல்,2.கல்வி 3.காதல் சிறப்புரைத்தல்
2. பழமொழிநானூறு - 10 செய்யுட்கள்
3. இனியவைநாற்பது - தேர்ந்தெடுத்த10செய்யுட்கள்

அலகு–III பல்சுவை இலக்கியங்கள்

1. குற்றாலக் குறவஞ்சி - தேர்ந்தெடுத்த7பாடல்கள்
2. முத்தொள்ளாயிரம் - தேர்ந்தெடுத்த9பாடல்கள்
3. காளமேகப்புலவர் - தேர்ந்தெடுத்த7பாடல்கள்

அலகு–IV வாழ்க்கைவரலாறு

1. தமிழ்த் தாத்தாடாக்டர். உ.வே.சாமிநாதையர்
2. நவாப்.சி.அப்துல் ஹக்கீம்
3. அன்னைதெரசா

அலகு–V (அ) இலக்கியவரலாறு

1. சங்க இலக்கியங்கள்
2. நீதி இலக்கியங்கள்

(ஆ) திறனறிப் பயிற்சி

1. மரபுப் பெயர்கள் - அறிமுகம்
2. வழூஉச் சொற்கள் - அறிமுகம்
3. பிறமொழிச் சொற்களைநீக்குதல்
4. வடமொழிச் சொற்களைநீக்குதல்
5. விண்ணப்பம் எழுதுதல்

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for All UG Course [for B. Com., B.B.A., & B.C.A.,] effective from the year 2018-2019

Year: I Year Subject Code : **U18FUR202** Semester : II

Part - I Title: **URDU - II**

Credits: 4 Max. Marks. 75

Poetry, Afsana& translation

OBJECTIVES:	✓ **To streamline students' alarcrity towards Top Writers in Urdu.** ✓ **To augment their affinity for enriched Urdu Literature.** ✓ **To further their skills to translate from English to Urdu.**
COURSE OUTCOMES	➢ **Students will get inspired to read more Writers in Urdu.** ➢ **They will expose themselves to more Urdu Literature.** ➢ **They will emerge as Masters of translation in specified languages.**

BOOK PRESCRIBED: "ADAB-E-JAMEEL"

Published by Dept. of Urdu, C. Abdul Hakeem College, Melvisharam.

Unit – I

1. JAMUN KA PED – Krishan Chander
2. QAUMI GEETH – Allama Iqbal
3. MEER TAQI MEER - HasthiApniHabbab Ki Si Hai
4. KHAJA MEER DARD - Tohmaten Chand ApneZimmz Dhar Chale

Unit – II

1. BADA GHAR KI BATI – Prem Chan
2. TAJ MAHAL – SahirLudhyanwi
3. SHAIK IBRAHIM ZAUQ - LayiHayathAayeQaza Le Chali
4. MIRZA GHALIB - Dil Hi To Hai Na Sang WaKhisht

Unit – III

1. KHUSH NASEEB – Ali Akbar Amburi
2. MOMIN KHAN MOMIN - Adam Mein Rehthe
3. JIGAR MURADABADE - Dil Gaya RonaqHayathGayi
4. A General Passage Translation from English to Urdu

Unit – IV

1. DARD KA EHSAS – Ameerunnisa
2. FIRAQ - Sar Mein SoudaBhiNahin
3. KAWISH BADRI - Az Sare Nav Fikr Ka Aaghaaz Karna Chahiye
4. A General Passage Translation from English to Urdu

Unit – V

1. NAGHMA-E-HASRATH – Akbar Allahbadi
2. SHAKIR NAITHI - Shahid Maqsood Ek Din Rubaroo Ho Jayega
3. PARVEEN - Chalna Ka HosalaNaye

A General Passage Translation from English to Urdu

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for All UG Course effective from the year 2018-2019

Year:	I Year	Subject Code :	U18FHN201	Semester :	II
Part - I	Title:	**Hindi - II**			
Credits:	4			Max. Marks. 75	

Syllabus and books prescribed:

Unit –I one act play: '**gadya mukur'**

lessons prescribed:

1. Deepdan by ramkumarvarma,
2. Beemar ka ilaaj by uday shankar bhatt
3. Gaon ka eeshwar by laxminarayan lal

Unit –II short story: text – 'gadya **mukur'**

lessons prescribed:

1.namak ka daaroga by premchand
2. Usne kaha tha by guleri
3. Mahuye ka ped by markandey

Unit –III Translation practice: English to English.

Passages.

Unit –IV dialogue writing:

Prescribed communications:

1. Adhyapak aur vidyarthi
2. Doctor aur rogi
3. Dukandar aur grahak
4. Do yaatri (ya) musafir
5. Dukandar aur vidyarthi.
6. Dak ghar mein

Unit –V applied grammar: usage in two different

Meanings.

Books for study:

1. Gadya mukur, ed. Shaik abdul wahab, raka prakashan, allahabad, 2011.

2.anuvad abhyas – iii d.b. Hindi prachar sabha, chennai 2009.

Books for reference:

1. Bolchal ki hindi, dr.susheela gupta, lokbharati Prakashan, allahabad, 2006

2. Hindi vyakaran: sastri & apte, d.b.h.p. Sabha, chenna, 1998.

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for all I Year UG Course effective from the year 2018-2019

Year: I Year Subject Code: **U18FEN201** Semester: II

Part - II Title: ENGLISH - II

Credits: 4 Max. Marks. 75

UNIT - I **PROSE**

1. The Eternal Silence of These Infinite Crowds N.C. Chaudhari
2. Comfort Aldous Huxley
3. The Challenge of Our Time E.M. Foster
4. Words of Wisdom ChetanBhagat

UNIT – II **POETRY**

1. Kubla Khan S.T. Coleridge
2. I Know Why the Caged Bird Sings Maya Angelo
3. Punishment in Kindergarten Kamala Das
4. The Unknown Citizen W.H. Auden

UNIT - III **SHORT STORIES**

1. A Devoted Son Anita Desai
2. A Cup of Tea Katherine Mansfield

UNIT - IV **ONE-ACT PLAY & BIOGRAPHY**

1. Funeral Oration from Julius Caesar William Shakespeare
2. Biography of Sir Syed Ahmed Khan

UNIT - V **WARM UP**

1. Lexical Skills:

1. One Word Substitutes
2. Correct Usage of words
3. Commonly misspelt words
4. Formation of plurals

2. **Descriptive Grammar:**

    1. Articles and its kinds
    2. Prepositions and its kinds
    3. Pronouns
    4. Kind of Pronouns
    5. Verbs – Transitive and Intransitive Verbs

3. **Traditional Grammar:**

    1. The Tenses- Introduction

    Past Tense

    (a) Simple Past Tense
    (b) Past Continuous Tense
    (c) Past Perfect Tense
    (d) Past Perfect Continuous Tense

    2. Direct and Indirect Speech

4. **Communication Skills (LSRW):**

    1. Offering a Suggestion
    2. Asking For Advice
    3. Persuading
    4. Complimenting

    } English for Communication - I

5. **Composition:**

    1. Electronic Mail
    2. Body Language
    3. Facing and Interview
    4. Negotiating

    1. Group Discussion

    } English for Communication - I

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for Computer Application effective from the year 2018-2019

Year: I Year Subject Code: **U18MCA201** Semester:II

Major - 2 Title: **C++ and Data Structure**

Credits: 4 Max. Marks. 75

Objectives	On the completion of the course students will be able to
COURSE OUTCOME(S)	
CO1	❖ To know the basic, of C++ understanding of control structures
CO2	❖ Able to understand the idea of function constructors and destructors
CO3	❖ Effects of pointers and arrays purpose of exception handling
CO4	❖ Meaning of string processing and its users
CO5	❖ To know the value of Arrays, records and pointers, stacks, queues, recursion

Objective:

- To understand the basics of Object Oriented Programming and their applications.
- To gain knowledge of objects, Class, Data Abstraction, Encapsulation,Inheritance, Polymorphism and Dynamic Binding.
- To know about constructing programs and easy to learn all the basic datastructure concepts.

Unit: 1

Introduction to C++ - Input and Output –Declaration- Control Structures [Chapter-1 to 4]

Unit: 2

Functions – Classes and Objects – Constructors and Destructors - Operatoroverloading & type Conversion-Inheritance [Chapter- 5 to 9]

Unit: 3

Pointers and Arrays-Polymorphism and Virtual Functions-Applications with Files-Exception Handling [Chapter-10, 12, 13, 14 & 15]

Unit: 4

Introduction - Preliminaries – String Processing [Chapter 1, 2 & 3]

Unit: 5

Arrays, Records and Pointers-Linked List – Stacks, Queues, Recursion[Chapter- 4, 5& 6]

TEXT BOOK:

1. Ashok N.Kamthane, "Object Oriented Programming with ANSI & TurboC++",Pearson Education Publications, Fifth Editions.
2. Data Structures, Revised First Edition, Seymour Lipschutz, McGraw HillEducation (India) Private Limited.

REFERENCE BOOKS:

1. E. Balagurusamy,"C++Programming"T.M.H.Publications
2. Herbert Schildt,"C++ the Complete Reference"T.M.H. Publications
3. Robert Lafore,"OOP with C++"
4. Ellis Horowitz & Sartaj Sahni" Fundamentals of Data Structures, Galgotiabooksource.
5. Tanenbaum, " Data Structures Using C" ,TMH
6. A.K. Sharma, " Data Structure Using C", Pearson Education
7. P. S. Deshpande and O.G. Kakde, "C & Data Structure", Wiley Dreamtech,

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for Computer Application effective from the year 2018-2019

Year: I Year **Subject Code :U18MCAP21** Semester :II

Practical – II Title **C++ and Data Structure Lab**

Credits:3 Max. Marks. 75

Course Objectives	
CO1	❖ To enhance the understanding of classes, creating objects and member function in C++
CO2	❖ To impart simple interest and about data elements using private key world
CO3	❖ To make students familiarize with operator overloading, all types of inheritance

1. Program to implement classes, create object and member functions
2. Program to count the number of vowels, consonants, white spaces, specialcharacters in a string
3. Program to calculate simple interest. Hide the data elements of the classusing private keyword
4. Program to find the area of rectangle, triangle and sphere. Use concept ofFunction Overloading
5. Program to Implement the concept of Operator Overloading
6. Program to Implement the Concept of all types of Inheritance
7. Program to write and read text in a file. Use ofstream and ifstream classes
8. Program to perform read and write operations with objects using write ()and read () functions.
9. Bubble Sort
10. Stack Using rray
11. Queue Using Pointer
12. Infix to Postfix Conversion
13. Postfix Expression Evaluation
14. Quick Sort
15. Towers of Hanoi

❖ On the completion of the course students will be able to The usage of pointers and understanding of stream classes and function overloading knowledge of strings, purpose of all types of inheritance, able to develop read and write operations with objects using write() and read() function understanding of conversions and expression evaluation

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for BCA effective from the year 2018-2019

Year: I Year Subject Code : **U18AMA201** Semester : II

Allied - 2 Title: **ALLIED MATHEMATICS - II(ALLIED)**

Credits: 5 Max. Marks. 75

OBJECTIVES:	This course covers basic ideas of integrals, trigonometry functions, Laplace transform & Vector analysis.
COURSE OUTCOME(S): At the end of the course, the students will able:	
CO1	Use Bernoulli and Reduction formulae to evaluate the single integrals and Define Beta and Gamma functions and to solve the double & triple integrals & to expand Fourier series for several functions.
CO2	Express multiples of θ interms of powers of θ of trigonometry function and vice versa..
CO3	DefineLaplaceTransforms,Inverse LaplaceTransforms and is application to solve ordinary differential equations.
CO4	To know the concepts and simple applications of Vector differentiation and Vector integration.

UNIT-I : INTEGRAL CALCULUS

Bernoulli's formula for integration by parts - Reduction formulae for: $\int x^n e^{ax}, \int \sin^n x dx, \int \cos^n x dx$,(with proof & problems), $\int_0^{\pi/2} \sin^m x \cos^n x dx$ (no proof , problems only) - properties of definiteintegrals and simple problems.

UNIT-II: APPLICATION OF INTEGRATION

Evaluation of double, triple integrals -

Fourier series forfunctions in $(0,2\pi)$ and $(-\pi, \pi)$.

UNIT-III: TRIGONOMETRY

Expansions of $\sin^n \theta$, $\cos^n \theta$, $\sin n\theta$, $\cos n\theta$, $\tan n\theta$ - Expansions of $\sin \theta$, $\cos \theta$, $\tan \theta$ in terms of θ - Hyperbolic and inverse hyperbolic functions - Logarithms of complex numbers.

UNIT-IV : LAPLACE TRANSFORMS

Laplace Transformations of standard functions and simple properties - Inverse Laplace transforms- Applications to solutions of linear differential equations of order 1 and 2-simple problems.

UNIT-V: VECTOR ANALYSIS

Scalar point functions - Vector point functions - Gradient - divergence - curl - Directional derivatives- Unit to normal to a surface - Line and surface integrals - Guass, Stoke's and Green'stheorems(without proofs) - Simple problem based on these Theorems.

Recommended Text:

P.Duraipandian and S.Udayabaskaran,(1997) Allied Mathematics, Vol. I & II. Muhil Publishers,Chennai.

Reference Books:

1. P.Balasubramanian and K.G.Subramanian,(1997)Ancillary Mathematics. Vol. I & II. Tata McGrawHill, New Delhi.

2. S.P.Rajagopalan and R.Sattanathan,(2005) Allied Mathematics .Vol. I & II. Vikas Publications, NewDelhi.

3. P.R.Vittal(2003). Allied Mathematics . Marghan Publications, Chennai.

4. P.Kandasamy, K.Thilagavathy (2003) Allied Mathematics Vol-I, II S.Chand & company Ltd., NewDelhi-55.

5. Isaac, Allied Mathematics. New Gamma Publishing House, Palayamkottai.

C. Abdul Hakeem College (Autonomous), Melvisharam.
Syllabus for BCA effective from the year 2018-2019

Year: I Year Subject Code : **U18AMA202** Semester : II

Allied - 2 Title: **MATHEMATICAL FOUNDATIONS-II (ALLIED)**

Credits: 5 Max. Marks. 75

Objectives	This Course Covers Basic ideas of matrices, integrations and Analytical geometry of three dimensions
COURSE OUTCOME(S)	
CO1	❖ Identify whether the given square matrix is a symmetric or skew symmetric or hermitian or skew hermitian or not and find the rank, characteristic equation, eigen values, eigen vectors of a matrix.
CO2	❖ Analyze whether the given system of linear equations consistent or not consistent solve simultaneous linear equations.
CO3	❖ Discuss the different types of integrations involving trigonometric functions and solve integrations by using simple substitutions methods.
CO4	❖ Evaluate some special kinds of integrals and evaluate integrals by applying integration by parts, Reduction formulas.
CO5	❖ Drive the equations of plane passing through points and express the equation of straight line.

UNIT-I: MATRICES

Multiplication of matrices, Singular and Non-Singular matrices, Adjoint of a Matrix, Inverse of a matrix Symmetric and Skew-Symmetric, Hermitian and Skew-Hermition, Orthogonal and unitary matrices, Rank of a matrix, Solution of Simultaneous Linear equations by

(i) Cramer's rule.

(ii) Matrix Inversion Method.

UNIT-II: MATRICES

Test for Consistency and Inconsistency of linear equations, (Rank Method), characteristic roots and characteristic vectors, Cayley - Hamilton theorem, matrix of linear transformations: reflection about the x, y axes and the line y = x, rotation about the origin through an angle, expansion or compression, shears, translation.

UNIT-III: INTEGRATION

Simple problems, integration of rational function involving algebraic expressions of the form

$\frac{1}{ax^2+bx+c}$, $\frac{1}{\sqrt{ax^2+bx+c}}$, $\sqrt{ax^2+bx+c}$, $\frac{px+q}{ax^2+bx+c}$, $\frac{px+q}{\sqrt{ax^2+bx+c}}$,

$(px+q)\sqrt{ax^2+bx+c}$. Integrations using simple substitutions, integrations involving trigonometric functions of the form

$\frac{1}{a+b\cos x}$, $\frac{1}{a+b\sin x}$, $\frac{1}{a^2sin^2x+b^2cos^2x}$ Integration by parts.

UNIT-IV: INTEGRATION

Properties of definite integrals. Reduction formulae for

$\int \mathrm{x^n e^{ax}}\, dx$, $\int sin^n x\, dx$, $\int cos^n x\, dx$, $\int x^m(1-x)^n dx$, $\int sin^m x cos^n x\, dx$.

UNIT-V: ANALYTICAL GEOMETRY OF THREE DIMENSIONS

Planes, Straight lines.

Recommended Text:

P.R.Vittal, Mathematical Foundations - Margham Publication, Chennai.

Reference Books:

1. U. Rizwan, Mathematical Foundation - SciTech, Chennai

2. V.Sundaram & Others, Dircrete Mathematical Foundation - A.P.Publication, sirkali.

3. P.Duraipandian & Others, Analytical Geometry 3 Dimension – Emerald publication 1992 Reprint.

4. Manicavachagom pillay & Natarajan. Analytical Geometry part II - three Dimensions-S.Viswanathan (printers & publication) Put Ltd., 1991.

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Year:	I Year	Subject Code:	**U18CSS201**	Semester:	II
Part - II	Title:		**SOFT SKILLS**		
Credits:	1			Max. Marks. 75	

UNIT I

1. Ability to listen and document what you have heard
2. Reading and comprehension

UNIT II

3. Ability to read and follow instructions
4. Ability to interpret and transcode information

UNIT III

5. Asking for and responding to information
6. Communication skills with public, fellow employees, supervisors and customers

UNIT IV

7. Spelling and Grammar
8. Ability to fill out a job application

UNIT V

9. Expressing courtesy
10. General and Individual Traits:
    (a) Honesty
    (b) Reliability
    (c) Good Attitude
    (d) Common Sense

C. Abdul Hakeem College (Autonomous), Melvisharam

Year: **I Year** **Subject Code :** **U18CVE201** **Semester :** **II**

Part IV **Title: Value Education**

Credits: **2** **Max. Marks. 75**

Objectives	To understand the human values and ethical issues.
COURSE OUTCOME(S)	
CO1	❖ Describe the basic concept of human values.
CO2	❖ Explain the structure and responsibility of families
CO3	❖ Elaborate the human ethical relationships
CO4	❖ Analyze the modern welfare and globalization.

UNIT-I Value Education - Definition - relevance to present day - Concept of Human Values - self introspection - Self-esteem.

UNIT-II Family values - Components, structure and responsibilities of family - Neutralization of anger - Adjustability - Threats of family life - Status of women in family and society - Caring for needy and elderly - Time allotment for sharing ideas and concerns.

UNIT-III Ethical values - Professional ethics - Mass media ethics - Advertising ethics - Influence of ethics on family life - psychology of children and youth - Leadership qualities - Personality development.

UNIT-IV Social values - Faith, service and secularism - Social sense and commitment - Students and Politics - Social awareness, Consumer awareness, Consumer rights and responsibilities - Redressal mechanisms.

UNIT-V Effect of international affairs on values of life/ Issue of Globalization - Modern warfare - Terrorism. Environmental issues - mutual respect of different cultures, religions and their beliefs.

Suggested Readings

1. T. Anchukandam and J. Kuttainimathathil (Ed) Grow Free Live Free, KrisituJyoti Publications, Bangalore (1995)
2. Mani Jacob (Ed) Resource Book for Value Education, Institute for Value Education, New Delhi 2002.
3. DBNI, NCERT, SCERT, Dharma Bharti National Institute of Peace and Value Education, Secunderabad, 2002.
4. Daniel and Selvamony - Value Education Today, (Madras Christian College, Tambaram and ALACHE, New Delhi, 1990)
5. S. Ignacimuthu - Values for Life - Better Yourself Books, Mumbai, 1991.
6. M.M.M.Mascaronhas Centre for Research Education Science and Training for Family Life Promotion - Family Life Education, Bangalore, 1993

Semester: III Core Theory Paper-III

Python

Subject code: U18MCA301

Instruction hours/week: 4 **Credit: 3**

Maximum External Marks: 75

Objectives	Python facilitates the students to enrich the programming skills
COURSE OUTCOME(S)	
CO1	❖ Provides the basics of Python development ❖ Writing simple Python programs gives basic knowledge
CO2	❖ Students benefits with Control Structure ❖ Creating functions and std maths function
CO3	❖ Makes students bright in function development with module ❖ Provides easy acquaintance of function oriented programmingskills
CO4	❖ Programming skills through list ❖ Arranging elements through sorting skill
CO5	❖ Enriching knowledge through objects ❖ Creating awareness about inheritance and exception handling

Unit-1

The context of software development: software, development tools, programming with python, writing python program - Values and variables: integer values, variables and assignments, identifiers, floating point types, control codes, user input, eval function, controlling the print function – Expressions and arithmetic: expression, operator precedence, comments, errors, arithmetic examples, more arithmetic operators, algorithms [Chapter: 1, 2 and 3]

Unit-2

Conditional execution: Boolean expression, simple if statement, if else statement, compound Boolean, nested conditional, multiway decisions, conditional expressions, errors in conditional statement – Iterations: while statement, definite vs indefinite loops, for statement, nested loops, abnormal loop termination, infinite loops, iterations examples.- Using functions: Introduction-standard mathematical functions, time function, random numbers, importing issues [Chapter 4, 5, 6]

Unit-3

Writing functions: function basics, using functions, name function, parameter passing, function example, custom vs standard functions- More on functions: global variables, default parameters, recursion, function reusable, documenting function and module, function as data. [Chapter 7, 8]

Unit-4

Lists: using list, list assignment and equivalence, list bounds, slicing, list and functions, prime generation- List Processing: sorting, flexible sorting, searching, list permutation, random permuting a list, reversing a list [Chapter 9, 10]

Unit-5

Object: Using object, string object, list object- Custom types: geometricpoints, methods, custom type's examples, class inheritance- Handling exceptions: Motivations, exception examples, using exception, customexception. [Chapter 11, 12, 13]

Prescribed Text Books:

1. "Learning to program with Python", Richard.L.Halterman,2011 edition

Books for Reference:

1. Mark Lutz, Learning Python,O'Reilly,fifith edition, 2013
2. Bill Lubanovic, Introducing Python, fifth edition, 2014
3. David.M.Beazley, Python Essential reference, developer's library,fourth edition 2009.

Semester: III Core Theory Paper-IV

Computer Architecture

Subject Code: U18MCA302

Instruction hours/week: 5 **Credit: 3**

Maximum External Marks: 75

Objectives	To study the basic organization and architecture of digital computers that leads to better understanding and utilization of digital computers
COURSE OUTCOME(S)	
CO1	❖ Ability to understand basic introduction of computer organization ❖ Ability to perform computer arithmetic operations
CO2	❖ Ability to design memory organization that uses for different operations
CO3	❖ Ability to understand the concept of input/output organizations
CO4	❖ Easy to understand and conceptualize the instruction level parallelism
CO5	❖ To analyze processor performance improvement using instruction level parallelism

Unit-1

Introduction –Organization and architecture-Structure and functions- Computer evaluation and performance-top level view of computer-functionsand interconnections [Chapter 1,2,3]

Unit-2

Cache memory – internal memory technology [Chapter 4 & 5]

Unit-3

External memory – input/output – OS Support [Chapter 6, 7, 8]

Unit-4

Computer Arithmetic – Instruction set: Characteristics and functions[Chapter 9 & 10]

Unit-5

Instruction set: Addressing modes and formats- Processor Structures and functions [Chapter 11 & 12]

Prescribed Text Books:

1. Computer Organization and Architecture, William Stallings, Eighth edition, Pearson Education

Books for Reference:

1. Advanced Computer Architecture, Kai Hwang, TMH
2. Computer Architecture and Parallel Processing, Faye.A. Briggs, TMH

Semester: III Core Theory Paper-V

Subject Code: U18MCA303

Advanced Data Structure and Algorithm

Instruction hours/week: 5 **Credit: 3**

Maximum Marks: 75

Objectives	❖ To assess how the choice of data structures and algorithm designmethods ❖ To solve problems using data structures such as linear list and stack, queue and etc
COURSE OUTCOME(S)	
CO1	❖ To gain experience with binary search trees and building new ideas in list
CO2	❖ To explain the basic concepts and definitions of graphs
CO3	❖ To implement and gain knowledge in different types of sorting
CO4	❖ To develop spanning tree in the form of greedy methods
CO5	❖ Understand the concepts of multistage graph and backtracking

Unit-1: Trees

Binary tree – Complete binary tree - linked and sequential representationof binary tree – traversing binary tree – algorithm- binary search tree- searching, inserting and deleting in a binary search tree.

Unit-2: Trees & Graph

B-Tree (definition, searching, insertion and deletion in a B-Tree) - Graph and multigraph - Sequential representation of graph – linked representationof graph –Operations of graph – traversing a graph

Unit-3: Algorithm & Sorting

Definition of algorithm-Criteria-Algorithm Specification-Divide and Conquer algorithm- Binary Search – Maximum and Minimum- Merge sort – Insertion Sort – Selection Sort – Heap Sort - Strassen's matrix multiplication.

Unit-4: Minimum Cost & Greedy Method

Spanning tree- minimum Spanning tree: Prim's & Kruskal algorithm –Shortest Path: Dijkstra's algorithm – topological sorting- Knapsack Problem – Greedy algorithm for job sequencing with deadlines.

Unit-5: Backtracking

Multistage Graph – Backtracking: General Method – 8 Queens Problem –Sum of Subsets - Graph Coloring – Hamiltonian Cycles – travelling salesperson.

Prescribed Text Books:

1. Data Structures,[Seymour Lipschutz],Second Edition, McGraw Hill Book Company.
2. Computer Algorithms/C++, Second Edition, [Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran],Universities Press

Books for Reference:

1. Introduction to algorithms, Coreman T.H., Leiserson C.E. and Rivest R.L., PHI 1998
2. Introduction to the design and analysis of algorithms, AnanyLevitin, Pearson Education, 2nd Edition
3. Data Structures using C++, Varsha.H.Patil, Oxford University Press, 2012 Edition.

Semester: III Core

PracticalPractical-3

Practical Code: U18MCAP31

Python Lab

Instruction hours/week: 4 **Credit: 3**

Maximum Marks: 75

Objectives	❖ Skills developed thorough basic Python programs ❖ Knowledge enriches via searching & sorting Python programs ❖ Provides game development skills through Python Programming

1. Compute GCD of two numbers
2. Find the square root of number (Newton's Method)
3. Exponentiation (Power of a number)
4. Find the maximum of a list of numbers
5. Linear Search
6. Binary Search
7. Selection Sort
8. Insertion Sort
9. Merge Sort
10. Find a Prime numbers
11. Multiply matrices
12. Programs that take command line arguments(word count)
13. Find the most frequent words in a text read from a file
14. Simulate Elliptical orbits in Pygame

15. Simulate Bouncing ball using Pygame
16. Odd or Even
17. Simple Calculator
18. Leap year or not
19. Factorial
20. Fibonacci Series
21. Armstrong Number
22. Exchange the values of two variables
23. Distance between two points
24. Circulating N-Values
25. Sum of N-Numbers

Learning Outcome:

- Students yields maximum benefits from Python programming. Itenhances the student's knowledge with latest development in programming skills. It benefits students through basic mathematical programming skills.

Year: II **Subject Code: U18ACM301** **Semester: III**

Allied: 3 Title: FINANCIAL AND MANAGEMENT ACCOUNTIG I

Credits: 4 **Max. Marks: 75**

OBJECTIVES:	To enable the students to gain basic knowledge of Financial and Management accounting
COURSE OUTCOME(S)	
CO1	Discuss basic concepts and conventions of accounting
CO2	Preparation of final accounts of sole traders and partnership firms.
CO3	Compare the different methods of depreciation.
CO4	Compute the Due date of bills.
CO5	Apply marginal costing in decision making process.

UNIT-I - INTRODUCTION

Basic Accounting Concepts and Conventions- Groups interested in accounting- Accounting Equations – journal-Ledger- subsidiary Books- Trial Balance.

UNIT-II – FINAL ACCOUNTS

Final Accounts: Meaning- Preparation of Final Accounts- Trading, Profit and loss account and Preparation of Balance Sheet (with simple adjustment entries) – Distinction between trial balance & balance sheet.

UNIT-III – DEPRECIATION

Depreciation Accounting: Meaning of Depreciation – Methods of providing Depreciation- Methods - Original Cost – Diminishing Balance Method.

UNIT-IV – AVERAGE DUE DATE

Average Due Date: Meaning – Practical uses of average due date- basic problems in Average Due Date.

UNIT –V – MARGINAL COSTING

Introduction-definition of Marginal Costing- advantages and limitations of marginal cost – cost volume/profit analysis-fixed cost- variable cost-BEP-Margin of Safety.

Books for Reference:

1. Advance Accounts and Management Accounts – T.S.Reddy and Y.Hariprasath Reddy.
2. Advanced Accounts by Shukla.
3. Management Accounting – Manmohan and Goyal.
4. Financial Accounting – T.S.Reddy and A.Murthy.

OBJECT ORIENTED ANALYSIS AND DESIGN

Credits: 4 **Max. Marks: 75**

Subject code: U18AMCA301

OBJECTIVES

CO1	To understand the object oriented life cycle
CO2	To know how to identify objects, relationships, services and attributes through UML..
CO3	To understand the use-case diagrams
CO4	To know the Object Oriented Design process.
CO5	To know about software quality and usability.

UNIT I INTRODUCTION

An Overview of Object Oriented Systems Development -
Object Basics – Object Oriented Systems Development Life Cycle.

UNIT II OBJECT ORIENTED METHODOLOGIES

Rumbaugh Methodology - Booch Methodology - Jacobson Methodology - Patterns – Frameworks – Unified Approach – Unified Modeling Language – Use case - class diagram -Interactive Diagram - Package Diagram - Collaboration Diagram - State Diagram - Activity Diagram.

UNIT III OBJECT ORIENTED ANALYSIS

Identifying use cases - Object Analysis - Classification – Identifying Object relationships -Attributes and Methods.

UNIT IV OBJECT ORIENTED DESIGN

Design axioms - Designing Classes – Access Layer - Object Storage - ObjectInteroperability.

UNIT V SOFTWARE QUALITY AND USABILITY

Designing Interface Objects – Software Quality Assurance – System Usability - MeasuringUser Satisfaction

Books for Reference:

1. Object- Oriented Modeling and Design With UML , Second Edition Michael Blaha James Rumbaugh Pearson
2. Object-Oriented Modeling and Design with UML, Second Edition, Michael R Blaha James R Rumbaugh
3. Object- Oriented Analysis and Design for Information State, Modeling with UML, OCL and IFML

Subject Code: U18SCA301

Operating System

Instruction hours/week: 3 **Credit: 3**

Maximum External Marks: 75

Objectives	Acquires basic skill of operating system
COURSE OUTCOME(S)	
CO1	❖ Understanding the basic structure of OS
CO2	❖ Promotes Os interface with OS debugging
CO3	❖ Enriches the process scheduling skills, IPC
CO4	❖ Provides thread to support multiprogramming
CO5	❖ Facilitates the basics of Synchronization

Unit-1

Introduction to OS – OS System Structure – OS system operation – Process management – memory management – Storage management –Protection and Security.

Unit-2

OS services – user OS interface – system calls – types – System Programs – OS design and implementation – virtual machines – OS debugging

Unit-3

Process Management – Process Concepts – Process Scheduling –Operations on Process – IPC – Multithreaded Programming.

Unit-4

Process Scheduling – Basic Concepts - Scheduling Criteria – Scheduling algorithm – thread scheduling - Multiple processors scheduling

Unit-5

Synchronization – Critical Section Problem - Monitors – Semaphores – Deadlocks

Prescribed Text Book

1. Operating system concepts Abraham Silberschatz, Peter B Galvin, Gerg Gagne, Wiley Publications, Ninth Edition
2. Operating system Principles silberschatz Wiley Publications,

Books for Reference:

1. Operating system Design & Implementation 3rd edition Andrew S.Tanenbaum, Albert S. Woodhull, Pearson Publishers
2. Principles of operating system, Naresh Chuhan, oxford Publishers
3. Operating systems internals and design principles, William Stallings, Pearson Publishers

Class	: Second year UG Programmes	Semester	: III
Subject Code	: U18NTA301	Title : Basic Tamil (Non Major-1)	
Credits	: 2	Max Marks	: 75

OBJECTIVES	தமிழ்மொழியின் அடிப்படை இலக்கண, இலக்கியப் பண்புகளை எழுத மற்றும் வாசிக்க ஆயத்தப்படுத்தல்.
COURSE OUTCOME(S)	
CO1	தமிழ் எழுத்துக்களை ஒலி வடிவம், வரி வடிவம் என பிரித்து வகைப்படுத்தல். தமிழின் அடிப்படை இலக்கிண வடிவ மாறுதல்களை எடுத்துரைத்தல்.
CO2	எளிமையான தமிழ்ச் சொற்களை அறிமுகப்படுத்தி பொருளை விளக்குதல். அதிகம் பயன்படும் பெயர், வினை, மற்றும் தொகுப்புச் சொற்களை அமைக்க பயிற்சி வழங்கல்
CO3	எளிமையான சிறுகதைகளின் வழி வாசிப்புத் திறனை மேம்படுத்தல்.

பாடத்திட்டம்

அலகு–I எழுத்து

1. உயிர் எழுத்துக்கள். மெய்யெழுத்துக்கள் - வகை, எண்ணிக்கை அறிதல்
2. உயிர் மெய் எழுத்துக்கள், வல்லினம், மெல்லினம், இடையினம்

அலகு–II எழுத்து

திணை, பால், எண், இடம், காலம், ஒருமை - பன்மை வேறுபாடு, குறில் நெடில் வேறுபாடு

அலகு–III சொல்

1. ஒரெழுத்து ஒரு மொழி பெயர் (பூ,ஆ,கா...) வினை (வா,போ...)
2. ஈரெழுத்து ஒரு மொழி பெயர் (கனி, பனி...) வினை (நில், படி...)
3. தொடர் மொழி : முக்கனி ,முத்தமிழ், மூவேந்தர் ,நாற்றிசை, ஐம்பொறி , அறு சுவைகள் - இவற்றை விளக்குக.

அலகு–IV சொல்

1. பெயர்ச்சொல் , வினைச்சொல் வகைகள்
2. பறவைப் பெயர்கள், விலங்குகளின் பெயர்கள், மலர்கள், வானவில்லின் வண்ணங்கள், இந்திய மொழிகள், எண்கள் (ஒன்று முதல் பத்து வரை எழுத்தால் எழுதுதல்)

அலகு–V சிறுகதை

1. நேர்மை தந்த பரிசு

பாடத்திட்டம்

அலகு–I எழுத்து

1.அகர வரிசையில் அமைத்தல் (ஒவ்வொன்றிற்கும் 10 பெயர்கள்)
தமிழ் மாதங்கள், தமிழ்ப் புலவர்கள், தமிழக ஊர்கள் , தலைவர்கள், தமிழ் நூல்கள்,

2. பிழை நீக்கி எழுதுதல்

1..ஆளும் வேளும் பல்லுக்கு உறுதி
2. ஆரம் செய விறும்பு
3.பனிவுடைமை நல்ல பன்பு
4. எண்ணை குலியல் நல்லது
5.இங்கு விரகு விற்க்கப்படும்
6. நூன் பள் மருத்துவரைப் பார்த்தேன்
7.பேரூந்து நிருத்தும் இடம்
8. உணக்கு உனவு தேவையா?
9.கம்பண் வீட்டுக் கட்டுத்தரியும் கவி பாடும்
10. ஐந்திள் வலையாதது ஐம்பதில் வளையுமா?

அலகு–II

(அ) சேர்த்து எழுதுதல் : சுட்டு, வினா, திசைப் பெயர் - அடிப்படையிலான சொற்கள்
எ.கா : அ + இடம் = அவ்விடம், எ + பையன் = எப்பையன், வடக்கு+ மேற்கு=வடமேற்கு

(ஆ) பிரித்து எழுதுதல் : கனி, மரம் - அடிப்படையிலான சொற்கள்
எ.கா : வாழை + பழம் = வாழைப்பழம் மரம் + வேர் = மரவேர்

(இ) எதிர்ச்சொல் தருதல் : பண்பு அடிப்படையிலான சொற்கள்
எ.கா : நன்மை X தீமை நல்ல X கெட்ட உயரம் X குட்டை .

அலகு–III செய்யுள்

(அ) ஆத்திசூடி (முதல் 12 செய்யுள்)
(ஆ) திருக்குறள் (குறள் எண்கள் : 10, 15, 82, 398, 788)
(இ) கவிமணி - நூறு வயது தருவன

அலகு–IV சிறுகதை

1. கொடிக்குக் காய் பாரமா ?
2. மூன்று பொற்காசுகள்

அலகு–V(அ) தமிழில் மொழிபெயர்க்க

Cell phone , Computer, Television, Demand Draft, E- Mail, Environment, Fax, Internet,

Post office , xerox. Encyclopedia, fond, Laptop, Soft copy, file , car, lorry,

(ஆ) நேர் காணல்

கலைத் துறையினர், அரசியல் தலைவர், விளையாட்டு வீரர், அறிவியல் அறிஞர்

C. Abdul Hakeem College (Autonomous), Melvisharam.
Syllabus for B.A., / B.Sc., / B.Com., (CS) effective from the year 2019-2020

Year:	II Year	Subject Code:	U18FUR301	Semester:	III
Language - 3	Title:	**Urdu - III**			
Credits:	4			Max. Marks. 75	

afsana, mazmoonnawesi&mukalama nigari

OBJECTIVES:	✓ **To arouse interest for Non-Detailed Texts.** ✓ **To equip them with ample knowledge to pen their own articles.** ✓ **To instill in them a flair for translation.**
COURSE OUTCOMES	➢ **Students will care more for Non-Detailed Texts on par with Detailed Texts.** ➢ **They will sharpen necessary skills to draft essays on varied themes.** ➢ **They will succeed in their official routine with their ability to translate.**

BOOK PRESCRIBED: "ADAB-E-JAMEEL" Published by Dept. of Urdu, C.Abdul Hakeem College, Melvisharam.

Unit – I

1.KAFAN – Prem Chand

2.JAMUN KA PED – Krishan Chander

Unit – II

1.KHUSH NASEEB – Ali Akbar Amburi

2.DARD KA EHSAS – Ameerunnisa

Unit – III

1.BHOLA – Rajender Singh Bedi

2.NAYA QANOON – Saadath Husain Manto

Unit – IV

1.NOOR-O-NAR – Ali Abbas Hussani

2.AAKHR PAISA BACH HI GAYA – B.S.Ramaiya

Unit – V

1.Guldasta-E-Mazameen-O-InshaPardazi By **Mohammed Arif Khan**

2. A General Passage forTranslationFromUrdu To English

C. Abdul Hakeem College (Autonomous), Melvisharam.

Year: II Year **Subject Code: U18NEN301** Semester: III

Non Major - 1 Title: **ENGLISH FOR COMMUNICATION - I (NME – I)**

Credits:2 Max. Marks. 75

Objectives:

- To streamline students' knowledge of sending communication through e-means.
- To strengthen their Non-Verbal Communication.
- To activate their ability to prepare an effective Resume.

Course Outcome:

- Students will learn the benefits of e-business and e-mail.
- They will have the skill to promote their Marginal and Projective Listening Skills.
- They will be able to overcome the problems related to Interviews.

Unit-1 : Mail Communication

- **E-Business**
- **E-Mail**
- **Writing an E-Mail**
- **Formatting an E-mail**

Unit-2 : on-Verbal Communication

- **Elements of Non-Verbal Communication**
- **Body Language / Kinesics**
- **Facial Expressions**
- **Eye Contact**
- **Posture**
- **Gestures**

Unit-3 : Effective Listening

The Listening Process

- **Types of Listening**
- **Passive Listening**
- **Sensitive Listening**
- **Active Listening**
- **Summary**

Unit-4 : Interview Techniques

- **Interview Problems**
- **Team Interviews**
- **Group Discussion**

Unit-5 : Preparing an Effective CV

- **Types of CVs**
- **Skills-based CV**
- **CV Templates**
- **CV Cover Letters.**

Prescribed Text : Business Communication Techniques and Methods,

by P.Juneja & Aarati Mujumdar, Orient Black Swan.

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.C.A effective from the year 2019-2020

Year:II Year Subject Code:U18NCH301 Semester: III

Non-Major - 1 Title: **CHEMISTRY IN DAILY LIFE – I (NME – I)**

Credits:2 Max. Marks. 75

Objective(s)	To introduce students to a breadth of ways in which chemistry impacts every aspect of modern life, from the food we eat to the clothes we wear, the way we communicate and work, the way we keep ourselves healthy and how we diagnose and treat those who aren't. Chemistry's role in our everyday life and how chemistry will impact on people's lives in the future.
Course Outcome(s)	
CO1	Understand the basic concepts in chemistry.
CO2	Explore the knowledge of comestics and their hazardous in our daily life.
CO3	Gain the knowledge of water analysis and their treatment methods.
CO4	Understand the concepts of pH and buffer action in our daily life.
CO5	Learn about the nature of food, food sources, balanced diet, various adulterants and their governing laws.

UNIT: I Basic Concepts in Chemistry

Elementary ideas of Atoms, elements, Atomic mass and Molecular mass. Isotopes, isobars and isotones. Methods of expressing concentration: Weight percentage, molality, molarity, normality and ppm.

UNIT: II Cosmetics

General formulation, preparation and toxicology of different types of cosmetics - Tooth paste, Shampoos, Hair dyes, lipstick, nail polish, perfumes, deodorants, Shaving cream Talcum powder, soaps and detergents.

UNIT-II Water Analysis

Sampling of Water for analysis - Chemical Substances affecting Potability - Colour, Turbidity, Odour, Taste, Temperature, pH and Electrical Conductivity. Purification of water Hard and soft water. Analysis of pollutant water by COD and BOD.

UNIT-IV Acid - Base balance

Definition classification, preparation properties and uses of acids and bases of Neutralisation reactions in everyday life. Indicators pH and their biological significance of pH; Buffer solutions – Importance of buffer in living system.

UNIT-V Food and Nutrition

Carbohydrates, Proteins, Fats, Minerals and Vitamins, definitions, sources and their physiological importance - balanced diet.

Adulterants in milk, ghee, oil, coffee powder, tea, asafoetida, chilli powder, pulses and turmeric powder - identification. Food laws, Safety and Standards.

REFERENCES:

1. Chemical Process Industries (4th Edition) R. Norris Shreve Joseph A.Brink,Jr.

2. Perfumes, Cosmetics and Soaps W.A.Poucher (Vol.3) Environmental Chemistry A.K.D

3. B. Sreelakshmi, Food Science, New Age International, New Delhi, 2015.

4. Shashi Chowla; Engineering Chemistry, Danpat Rai Publication.

5. B.K. Sharma; Industrial Chemistry. Goel Publishing House, Meerut, 2003.

6. C.N.R. Rao; Understanding Chemistry, Universities Press.

7. M.K. Jain and S.C. Sharma; Modern Organic Chemistry, Vishal Pub. Co., Jalandhar, 2(

8. V.R.Gowariker; N.V. Viswanathan and J. Sreedhar; Polymer Science, 2nd edn., New Ag
New Delhi, 2015.

9. P.C. Pall; K. Goel and R.K. Gupta; Insecticides, Pesticides and Argobased Industries.

10. Singh, K., Chemistry in Daily Life; Prentice Hall of India, New Delhi, 2008.

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.C.A. effective from the year 2019-2020

Year:	II Year	Subject Code:	**U18NCM301**	Semester:	III
Non-Major - I	Title:	**BUSINESS MANAGEMENT AND COMMUNICATION (NME – I)**			
Credits:	2			Max. Marks. 75	

OBJECTIVES:	To enable the students to know management and impart skill in communication to draft business letters.
COURSE OUTCOME(S)	
CO1	To understand the management principles and functions
CO2	To perceive the knowledge in planning and organising
CO3	To understand the knowledge of leaders and their qualities.
CO4	To impart skills in communication and provide guideline for effective communication.
CO5	To seek knowledge about letters and became aware of drafting letters to various organization.

UNIT-I – INTRODUCTION TO MANAGEMENT

Management – Meaning – Nature – Levels of Management -Functions of Management - Henry fayol's principles of Management;

UNIT-II - PLANNING

Planning – Meaning – Merits & Demerits of Planning - Steps in Planning - Organizing – Meaning – characteristics — Principles of organization.

UNIT-III – LEADERSHIP

Meaning– Importance-Leadership styles – Qualities of a Leader.

UNIT-IV - INTRODUCTION TO COMMUNICATION

Business Communication – Meaning - Importance – Media of Communication (Written, oral, face to face and visual communication) – Principles of an Effective Communication – Types of communication.

UNIT- V – BUSINESS LETTERS

Layout of a letter –Application for Situation - Letter of enquiry and complaint.

TEXT BOOK

1.Dr. C.B. Gupta, Business Management –Sultan Chand & Sons

Reference Books:

1. Rajendra Pal & J S Korlahali, Essentials of Business Communication.

2. Ramesh and Pattanchetti, Business Communication, R Chand & Co.

3. Jayashankar, Business Management –Margham Publications, Chennai.

4. Dr.N.Premavathy, Principles of Management, Sri Vishnu Publications, Chennai.

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.C.A. effective from the year 2019-2020

Year:	II Year	Subject Code:	U18NBA301	Semester:	III

Non-Major - 1 Title: **Management Concepts (NME - I)**

Credits: 2 Max. Marks. 75

Unit - 1

Management-Definition-Importance of management–Henry Fayol Principles of Management - -Function of Management-Level of Management-

Unit-2

Planning - meaning- importance- steps in planning- features of a good plan.

Unit-3

Staffing- Functions of staffing- Importance - Recruitment-Sources of Recruitment.

Unit-4

Selection- Selection Procedure –Test: (Aptitude test, Intelligence test, Proficiency test, Interest test, Personality test)-Interview: Types of interview.

Unit-5

Training- Need for training - Advantages– Methods of training (On the Job and Off the Job Training)

Text Book

1. Business Management- Dr. C.B Gupta – Sultan Chand & Sons.

Semester: IV Core Theory Paper-VI

Advanced Java Programming

Subject Code: U18MCA401

Instruction hours/week: 5 **Credit: 4**

Maximum External Marks: 75

Objectives	❖ Ability to assess how the advanced java works
COURSE OUTCOME(S)	
CO1	❖ Ability to understand the basics of java
CO2	❖ To learn how control structures work in java
CO3	❖ Explain the terms and concepts of inheritances
CO4	❖ Recognize the role of exception handling in java
CO5	❖ Illustrate how AWT used in advanced java

Unit-1

The history and evolution of Java – an overview of java – Data types,variables, arrays [Chapter 1, 2, 3]

Unit-2

Operators – Control Statements – Introducing Classes [Chapter 4, 5, 6]

Unit-3

Methods and Classes – Inheritance – Packages and Interfaces[Chapter 7, 8, 9]

Unit-4

Exception Handling – Multithreaded programming – The Applet Class –Event Handling [Chapter 10, 11, 21, 22]

Unit-5

Introducing the AWT: Working with windows, graphics – AWT controls –Exploring Swing [Chapter 23, 24, 30]

Prescribed Text Books:

1. The Complete Reference Java,Seventh Edition, HerbertSchildt,TMH

Books for Reference:

1. Programming With Java, Second Edition, Vijay Nicole Imprints, C.Muthu
2. The Java Programming Language, Addission Wesley Publication,Ken Arnold Gosling and Davis Holmen.

Semester: IV Core

Theory Paper-VII

Computer Graphics

Subject code: U18MCA402

Instruction hours/week: 4 **Credit: 3**

Maximum External Marks: 75

Objectives	❖ This subject enriches the graphics knowledge ❖ To introduce the use of the components of graphics system, components and algorithms related ❖ To inculcate basic principles of 2D, 3D ❖ To provide an understanding of tools for vector graphics and transformations ❖ To discuss the applications of computer graphics in development of visual realism
COURSE OUTCOME(S)	
CO1	❖ Students can understand the basics of computer graphics and various drawing methods in computers
CO2	❖ Students will describe the applications of drawing tool and vector tools for graphics
CO3	❖ To understand and implement the various algorithms for transformation of objects
CO4	❖ Students will define the fundamental of modeling in polygonal meshes
CO5	❖ Students will design a application with 3D basics in a virtual reality environment

Unit-1

Introduction to Computer Graphics - Getting started drawing figures [Chapter: 1, 2]

Unit-2

More drawing tools – Vector tools for graphics [Chapter 3, 4,]

Unit-3

Transformations of objects [Chapter 5]

Unit-4

Modeling Shapes with Polygonal Meshes [Chapter 6]

Unit-5

Three dimensional viewing- Rendering faces for visual realism. [Chapter 7, 8]

Prescribed Text Books:

1. Computer Graphics Using open GL , F.S.Hill,JR., Pearson Education

Books for Reference:

1. Computer Graphics Principles and Practice, Foley, VanDam, Feine, Hughes, Addison Wesley
2. Computer Graphics C version, Second Edition, Donald Hearn , M.Pauline Baker, Pearson Education

Semester: IV Core

Theory Paper -VIII

Software Engineering Concepts

Subject Code : U18MCA403

Instruction hours/week: 5 Credit: 3

Maximum External Marks: 75

Objectives	❖ To inculcate the nature of software development life cycle, process models and implementation issues in a real time scenario
COURSE OUTCOME(S)	
CO1	❖ Students will be able to define software engineering domains and different planning strategies
CO2	❖ Students will be able to understand the cost estimation techniques and requirement analysis in SDLC
CO3	❖ Students will be able to design simple software modules, plans and testing cases
CO4	❖ Students will be able to distinguish modern programming languages and their features required for software development
CO5	❖ Students can justify the verification and validation techniques and different activities involved in software maintenance.

Unit-1

Introduction to Software Engineering – Planning a Software Project

[Chapter 1, 2]

Unit-2

Software Cost Estimation, Software Requirement Definitions

[Chapter 3 & 4]

Unit-3

Software Design: Fundamental Design, Modules and Modularization, Design Notations, Design techniques, Detailed design considerations, realtime and distributed system design, test plans, milestones, walkthrough and inspection, design guidelines [Chapter 5]

Unit-4

Implementation Issues – Modern Programming Language features

[Chapter 6, 7]

Unit-5

Verification and Validation Techniques – Software Maintenance

[Chapter 8, 9]

Prescribed Text Books:

1. Richard Fairley, Software Engineering Concepts, TMH

Books for Reference:

1. Software Engineering Practitioner's Approach by Roger S. Pressman, Sixth Edition
2. An integrated approach to Software Engineering by Pankaj Jalote
3. Jibitesh Mishra and Ashok Mohanty, "Software Engineering", Pearson Education

Semester: IV Core Practical 4

Advanced Java Lab

Practical Code: U18MCAP41

Instruction hours/week: 4 Credit: 3

Maximum External Marks: 75

Objectives	Promotes the programming skill development with advanced java lab

1. Implementing Dialogs, Menus and Frame
2. Implementing Package, Inheritances and Interfaces
3. Implementing Flow, Border and Grid Layouts
4. Implementing user defined Exception Handling
5. Implementing multithreading
6. Implementing I/O stream file handling
7. Implementing the Calculator using Swing
8. CRUD operation using JDBC
9. Client Server using TCP & UDP socket
10. GUI Application with JDBC
11. Draw a rectangle & Circle using Swing
12. Enable and Disable button using Swing

Learning Outcome:

- This Advanced Java Lab exercise provides an innovative method of designing interactive web page using swing. It also promotes database connections skills with JDBC concept.

Title: FINANCIAL AND MANAGEMENT ACCOUNTIG – II

Subject Code: U18ACM401

Credits: 6 **Max. Marks: 75**

OBJECTIVES:	To enable the students to gain basic knowledge of Financial and Management accounting
COURSE OUTCOME(S)	
CO1	Evaluate Hire purchase system.
CO2	Illustrate Departmental accounts.
CO3	Analyze flow of funds.
CO4	Analyze flexible and cash budget in decision making.
CO5	Preparation of Capital budgeting and its uses in investment decisions.

UNIT-I - HIRE PURCHASE SYSTEM

Hire Purchase System: Meaning and Legal Position- Accounting aspects- Complete Repossession (Simple Problems only).

UNIT-II – DEPARTMENTAL ACCOUNTS

Departmental Accounts: Basis for allocation of expenses- Inter departmental transfer at cost or selling price- treatment of expenses which cannot be allocated.

UNIT-III – FUND FLOW ANALYSIS

Fund Flow Analysis: Meaning and importance- difference between funds flow analysis and cash flow analysis- advantages & limitations of Fund flow statement- Computation of Working Capital and Fund flow Statement.

UNIT –IV – BUDGETARY CONTROL

Budget and Budgetary Control: Introduction-meaning-definition- objectives of budgetary control-difference between forecast and budget- budgeting and budgetary control- classification of budgets- Flexible and Cash Budget only.

UNIT-V - CAPITAL BUDGETING

Capital Budgeting: Introduction-Factor influencing capital Expenditure Decisions- Methods of Capital Budgeting- Payback Method-Accounting Rate of Return methods(ARR) - Net Present Value Method(NPV)- Profitability Index Method(PI)

Books for Reference:

1. Advance Accounts and Management Accounts – T.S.Reddy and Y.Hariprasath Reddy.
2. Advanced Accounts by Shukla.
3. Management Accounting – Manmohan and Goyal.
   Financial Accounting – T.S.Reddy a

OBJECT ORIENTED ANALYSIS AND DESIGN

Credits: 6 **Max. Marks: 75**

Subject Code: U18AMCA401

Objectives	
CO1	To understand the object oriented life cycle.
CO2	• To know how to identify objects, relationships, services and attributes through UML
CO3	• To understand the use-case diagrams.
CO4	• To know the Object Oriented Design process.
CO5	• To know about software quality and usability.

Unit-I

Rational Unified Process, Process Notation, Business Modeling Workflow, Review of Object Orientation, definition of OOA, OOD and OOP

Unit -II

Object Oriented Analysis: Requirements Overview, Problem Statement, Glossary, Use-CaseModel, Supplementary Specifications, Analysis and Design Overview Architectural Analysis: Analysis Mechanisms, Key Abstractions, Pattern, Frame, Initial Architectural Layers,Use Case Analysis: finding classes from use case behavior, describe responsibility, attribute and association, qualify analysis Mechanism

Unit – III

Architectural Design**:** Design &Implementation Mechanisms, Design Classes & Subsystems,

Reuse opportunities Use-Case Design**:** Interactions between Design Objects, Persistence-Related Behavior, Refine the Flow of Events Description, Unify Classes and Subsystems

Unit – IV

Subsystem Design**:** Subsystems and Interfaces, Distribute Subsystem Behavior to Subsystem Elements, Document Subsystem Elements, Subsystem Dependencies Class Design**:** Create Initial Design Classes, Identify Persistent Classes, Define Operations, Class Visibility, Methods, States, Attributes, Dependencies, Associations, Generalizations, Resolve Use-Case Collisions

Unit – V

Concurrency and Distribution Overview, UML, case study of OOAD application

Books for Reference:

1. Object- Oriented Modeling and Design With UML , Second Edition Michael Blaha James Rumbaugh Pearson
2. Object-Oriented Modeling and Design with UML, Second Edition, Michael R Blaha
   James R Rumbaugh
3. Object- Oriented Analysis and Design for Information State, Modeling with UML, OCL and IFML

Semester: IV

Skill Based Paper-2

Internetworking with TCP/IP

Subject Code: U18SCA401

Instruction hours/week: 3 **Credit: 3**

Maximum Marks: 75

Objectives	This paper provides an opportunities for students to ➢ Analyze, design and implement the internet working ➢ Understand the basics of TCP/IP protocol for simulations
COURSE OUTCOME(S)	
CO1	❖ To aware the history of internet with IP ❖ To test the ARPANET & IP routers working
CO2	❖ Provides the familiarity of internet address with IP address class ❖ Makes the students to understand ARP refinement andimplementation
CO3	❖ Facilitates the purpose of IP with reliable and unreliable delivery ❖ Trap the error in ICMP and debug the error
CO4	❖ It enhances the networking knowledge with UDP ❖ Provides awareness of UDP reliability with encapsulation
CO5	❖ Makes the students to understand about DNS with TCP/Ip ❖ Basic understanding of FTP,TFTP,NFS

Unit-1:

TCP/IP internet services - History & scope of the internet - the internet architecture board - internet protocol and standardization - Wide area andlocal area networks - Ethernet technology- ARPANET technology - properties of internet - internet architecture - interconnection through IP routers.

Unit-2:

Internet addresses: introduction – universal identifiers –three primary classes of IP addresses – network and broadcast addresses- lookback address – internet addressing authority – the address resolution problem –resolution through direct mapping – ARP refinements – ARP implementations – ARP protocol format.

Unit-3:

Internet Protocol: Introduction – the concept of unreliable delivery – connectionless delivery system – purpose of the internet protocol – the internet datagram – the internet control message protocol – error reportingvs error correction

Unit-4:

User datagram protocol [UDP] : introduction – UDP protocol – format of UDP messages – UDP encapsulation and protocol layering – TCP: introduction – the need for stream delivery – properties of reliable deliveryservices – providing reliability – passive and active opens

Unit-5:

DNS : introduction – names for machines – flat name space – hierarchical names – TCP /IP internet domain names – inverse mappings – abbreviationof domain names - telnet protocol – FTP,TFTP,NFS.

Prescribed Text Books:

1. Internetworking with TCP / IP Principles, Protocols and Architecture, Douglas E. Comer, third edition , Volume 1, PHI

Books for Reference:

1. Design, implementation and internals – Volume 2, Douglas E.Comer, David .L.Stevens, PHI
2. TCP/IP architecture, design and implementation, Sameer SETH, M.Ajaykumar Venkatesulu. Wiley

Class	: Second year UG Programmes	Semester	: IV
Subject Code	: U18NTA401	Title : Basic Tamil (Non Major-2)	
Credits	: 2	Max Marks	: 75

OBJECTIVES	தமிழ் மொழியின் அடிப்படை பண்புகளை அறிய வைத்து எளிய இலக்கண, இலக்கியப் பயிற்சிகளின் வழி மதிப்பீடு செய்தல்.
COURSE OUTCOME(S)	
CO1	தமிழ் அகராதிகளைப் பயன்படுத்தவும் எழுத்துக்களை நினைவில் கொள்ளவும் பயிற்சி வழங்கல். தமிழ்ச் சொற்களில் சந்திப்பிழை தவிர்க்க எளிய பயிற்சி வழங்கல்
CO2	தமிழில் உள்ள எளிய மற்றும் இனிய இலக்கியங்களை அறிமுகப்படுத்தி பொருளை விளக்குதல். எளிமையான சிறுகதைகளின் வழி வாசிப்புத் திறனை மேம்படுத்தல்.
CO3	கலைச் சொற்களையும் ,மரபுத் தொடர்புகளையும் மொழிபெயர்த்தல்

பாடத்திட்டம்

அலகு–I எழுத்து

1.அகர வரிசையில் அமைத்தல் (ஒவ்வொன்றிற்கும் 10 பெயர்கள்)
தமிழ் மாதங்கள், தமிழ்ப் புலவர்கள், தமிழக ஊர்கள் , தலைவர்கள், தமிழ் நூல்கள்,

2. பிழை நீக்கி எழுதுதல்

1..ஆளும் வேளும் பல்லுக்கு உறுதி
2. ஆரம் செய விரும்பு
3.பனிவுடைமை நல்ல பன்பு
4. எண்ணை குலியல் நல்லது
5.இங்கு விரகு விற்க்கப்படும்
6. நூன் பள் மருத்துவரைப் பார்த்தேன்
7.பேருந்து நிருத்தும் இடம்
8. உணக்கு உனவு தேவையா?
9.கம்பண் வீட்டுக் கட்டுத்தரியும் கவி பாடும்
10. ஐந்திள் வலையாதது ஐம்பதில் வளையுமா?

அலகு–II

(அ) சேர்த்து எழுதுதல் : சுட்டு, வினா, திசைப் பெயர் - அடிப்படையிலான சொற்கள்
எ.கா : அ + இடம் = அவ்விடம், எ + பையன் = எப்பையன், வடக்கு+ மேற்கு=வடமேற்கு

(ஆ) பிரித்து எழுதுதல் : கனி, மரம் - அடிப்படையிலான சொற்கள்
எ.கா : வாழை + பழம் = வாழைப்பழம் மரம் + வேர் = மரவேர்

(இ) எதிர்ச்சொல் தருதல் : பண்பு அடிப்படையிலான சொற்கள்
எ.கா : நன்மை X தீமை நல்ல X கெட்ட உயரம் X குட்டை .

அலகு–III செய்யுள்

(அ) ஆத்திசூடி (முதல் 12 செய்யுள்)
(ஆ) திருக்குறள் (குறள் எண்கள் : 10, 15, 82, 398, 788)
(இ) கவிமணி - நூறு வயது தருவன

அலகு–IV சிறுகதை

1. கொடிக்குக் காய் பாரமா ?
2. மூன்று பொற்காசுகள்

அலகு–V(அ) தமிழில் மொழிபெயர்க்க

Cell phone , Computer, Television, Demand Draft, E- Mail, Environment, Fax, Internet,

Post office , xerox. Encyclopedia, fond, Laptop, Soft copy, file , car, lorry,

(ஆ) நேர் காணல்

கலைத் துறையினர், அரசியல் தலைவர், விளையாட்டு வீரர், அறிவியல் அறிஞர்

C. Abdul Hakeem College (Autonomous), Melvisharam.
Syllabus for all UG Courses effective from the year 2019-2020

Year: II Year Subject Code: U18NEN401 Semester: IV

Non -Major - 2 Title: **ENGLISH FOR COMMUNICATION - II (NME – II)**

Credits: 2 Max. Marks. 75

Objectives:

- To motivate students to build interesting Communication.
- To accelerate their efficiency of Business Correspondence.
- To provide to them effective instruction to excel in different Skills.

Course Outcome:

- Students will master the skill of drafting Notices and Writing Minutes.
- They will strengthen their ability to streamline Business Correspondence.
- They will gain proficiency in Editing and Team-Work Skills.

Unit-1:

An Introduction to Communication

Notices, Agendas and Minutes

Unit-2:

Business Correspondence

Speeches

Unit-3:

Meetings

Vocabulary Development

Unit-4:

Editing Skills

Reference Skills

Unit-5:

Teamwork Skills

Emotional Intelligence Skills

Prescribed Text: Synergy:
Communication in English and Study Skills, by Board of Editors, Orient Longman.

C. Abdul Hakeem College (Autonomous), Melvisharam.
Syllabus for BCA effective from the year 2019-2020

Year: II Year Subject Code: **U18NCH401** Semester: IV

Non-Major - 2 Title: **CHEMISTRY IN DAILY LIFE – II (NME – II)**

Credits: 2 Max. Marks. 75

Objective(s)	To introduce students to a breadth of ways in which chemistry impacts every aspect of modern life, from the food we eat to the clothes we wear, the way we communicate and work, the way we keep ourselves healthy and how we diagnose and treat those who aren't. Chemistry's role in our everyday life and how chemistry will impact on people's lives in the future.
Course Outcome(s)	
CO1	Acquire fundamental knowledge in preparations of cosmetics and their toxicology.
CO2	Gain the knowledge of using the chemicals as food in day to day life.
CO3	Understand the usage of chemicals as food production agents and their hazardous.
CO4	Understand the importance of plastics and their pollution.
CO5	Learn about the man made materials and their importance.

UNIT-I Common Drugs

Antibiotics, Antipyretics, Analgesics, Anti-inflammatory agents, Sedatives, Antiseptics, disinfectants, Antihistamines, Tranquilizers, Hypnotics and Antidepressant drugs - Definition, Examples, uses and side effects.

UNIT-II Colour chemicals and Food additives

Definition- Preservatives, Food colours - permitted and non-permitted. Artificial sweeteners, Emulsifying agents, Antioxidants. Artificial Sweetening agents – Saccharin – Cyclamate – Advantages and Disadvantages.

UNIT-III Chemicals in food production

Fertilizers used in natural sources - Fertilizers urea, NPK and Super phosphates need - uses and hazards. Biofertilizers and Pesticides – definition and examples.

UNIT-IV Plastic technology

Plastics, Polythene, PVC, Bakelite, Polyesters, Resins and their Applications. Natural Rubber - Synthetic rubbers - Vulcanisation - Preparation and its Applications. Environmental hazards of plastics.

UNIT – V Man made Materials

Colour chemicals – pigments and dyes, classification, examples and applications.

Raw materials and manufacturing process of Cement, and glass.

REFERENCES:

1. Chemical Process Industries (4^{th} Edition) R. Norris Shreve Joseph A.Brink,Jr.
2. Perfumes, Cosmetics and Soaps W.A.Poucher (Vol.3) Environmental Chemistry A.K.De.
3. B. Sreelakshmi, Food Science, New Age International, New Delhi, 2015.
4. Shashi Chowla; Engineering Chemistry, Danpat Rai Publication.
5. B.K. Sharma; Industrial Chemistry. Goel Publishing House, Meerut, 2003.
6. C.N.R. Rao; Understanding Chemistry, Universities Press.
7. M.K. Jain and S.C. Sharma; Modern Organic Chemistry, Vishal Pub. Co., Jalandhar, 2009.
8. V.R.Gowariker; N.V. Viswanathan and J. Sreedhar; Polymer Science, 2^{nd} edn., New Age, New Delhi, 2015.
9. P.C. Pall; K. Goel and R.K. Gupta; Insecticides, Pesticides and Argobased Industries.
10. Singh, K., Chemistry in Daily Life; Prentice Hall of India, New Delhi, 2008.

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for Business Administration effective from the year 2019-2020

Year: II Year Subject Code: U18NBA401 Semester: IV

Non-Major - 2 Title: **Business Correspondence(NME - II)**

Credits: 2 Max. Marks. 75

UNIT-I INTRODUCTION

Communication-Importance and Needs of Business correspondence - Objectives –Principles of effective Communication- Formal and Informal Communication-Communication Barriers.

UNIT-II MEDIA OF COMMUNICATION

Written, Oral, Visual, Audio and Computer based Communication and the merits and demerits of each.

UNIT-III BUSINESS LETTERS

Business Letters Kinds of Business Letters-Layout of Business Letter.

UNIT-IV LETTER WRITING

Application for the Situation- Bio-data- Business Enquiries- Complaint Letter.

UNIT-V HI-TECH COMMUNICATION

Hi-tech Communication -internet: Websites-Email -Video Conferencing- social Networking (face book, whatsapp, twitter)

Text Books:

1. Rajendra Pal and Korlehalli- Essentials of BusinessCommunication

Reference Book

2. S.M Ramesh & C.C Pattanshetti- BusinessCommunication.
3. Kathiresan And Dr. Radha - BusinessCommunication
4. R.S.N. Pillai &Bagavathi - Modern CommercialCorrespondence

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for all UG Courses effective from the year 2019-2020

Year: II Year Subject Code: U18NCM401 Semester: IV

Non-Major - II Title: **GENERAL COMMERCIAL KNOWLEDGE (NME – II)**

Credits: 2 Max. Marks. 75

OBJECTIVES:	To enable the students to gain basic knowledge of Trade, Commerce and Industry
COURSE OUTCOME(S)	
CO1	To understand basic concept of trade, commerce and industry
CO2	To glimpse the knowledge in different form of organization.
CO3	To learn about company and its workings
CO4	To impart knowledge in company management and administration.
CO5	To seek knowledge about Company Meetings, Minutes, Agenda, Quorum and Resolution.

UNIT-I - INTRODUCTION

Commerce, Trade, Industry – Meaning – Scope and Importance of Commerce – Economic Basis of Commerce.

UNIT-II – TYPES OF BUSINESS

Sole Trade – characteristics- advantages and disadvantage – Partnership - Features – Merits and Demerits - Co-operatives – Features – Types of co-operatives

UNIT-III – JOINT STOCK COMPANY

Joint Stock Company – Features – Memorandum and Articles – Contents – Prospectus and Contents.

UNIT-IV – MANAGEMENT OF COMPANY

Management of Joint Stock Company – Directors – Qualification, Appointment, Removal, Powers and Duties.

UNIT-V – COMPANY MEETINGS

Company Meetings – Types – Minutes – Agenda – Quorum – Resolution.

REFERENCE BOOKS:

1. Gosh and Bhutan, General Commercial Knowledge, Sultan Chand & Sons, New Delhi

2. J.C. Bahl&E.R.Dhongde, Elements of Commerce & Business Methods, New Book & Co., Mumbai

3. P.N. Reddy &S.S.Gulshan, Commerce – Principles & Practice, S. Chand & Co., New Delhi

4. J.C. Sinha &V.N.Mughali, A text book of Commerce, R. Chand & Co., New Delhi

5. K.L.Nagarajan, Vinayagam, Radhasamy and Vasudevan, Principles of Commerce and General Commercial Knowledge, S.Chand & Co., New Delhi.

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for B.C.A., effective from the year 2020-2021

Year: III Year Subject Code: U18MCA501 Semester: V

Major – 5 Title: DATA BASE MANAGEMENT SYSTEM

Credits: 6 Max. Marks. 75

Course Objectives:

1. To design conceptual and implementation schema of a database
2. To implement and manipulate relational and object relational database using SQL and PL/SQL
3. To introduce the concept of distributed database, multimedia database, semi-structured and unstructured database.

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

Objective	Course Outcome(s)
CO1	Explain the concepts of data models, database languageand architecture
CO2	Understand the concepts of query language and ER model
CO3	Design good relational database using Normalization
CO4	Demonstrate the database recovery system and database security
CO5	Understand the challenges of Emerging database technologies

UNIT-1

Introduction to Database System:

Introduction-basic concepts and definition-data dictionary-database and DB system-DA and DBA-File-oriented system vs DB system-DB language-Transaction Management.

Database System Architecture, Relational Algebra and Calculus:

Introduction- Schemas, sub-schemas and instances, three level ANSI-SPARCDB architecture-Data Independence-Mappings-Structure, components and functions of DBMS-Data Models, Types of DB systems – Relational Algebra introduction-structure of Relational database-Relation Algebra operations-Relational Calculus.

(Refer the Chapter: 1,2 and 4)

UNIT-2

Relational Query Languages:

Introduction-Codd's rules, ISBL, QUEL, SQL.Embedded SQL, QBE.

Entity-Relationship(ER) Model:

Introduction- Basic ER Concepts-ER diagram Symbols(Refer the Chapter: 5 and 6)

UNIT-3

Functional Dependency, Decomposition and Normalization:

Introduction-Functional Dependency-Decomposition-Introduction to Normalization-Normal forms-Types-BCNF-4NF-5NF

(Refer the Chapter: 9 and 10)

UNIT-4

Database Recovery System:

Introduction-Concepts-types of database failures and recovery, recovery techniques,buffer management

Database Security:

Introduction-goals, Discretionary Access Control, Mandatory Access Control, Firewalls, Statistical Database Security, Data Encryption
(Refer the Chapter:13 and 14)

UNIT-5

Object-Relational Database

Introduction-History of ORDBMS-ORDBMS Design

Distribution Database Systems:

Introduction-Distributed Databases-architecture-DDBS design

Emerging Database Technologies:

Introduction-internet databases-Digital libraries-Multimedia Databases, Mobile Databases, Spatial Databases

(Refer the Chapter: 16,18 and 21)

Text Book:

1. Database Systems-Concepts, Designs and Application, by Shio KumarSingh, Pearson Edition

Books for Reference:

1. Database System Concepts, by Abraham SIlberschatz,Henry Korth,S.Sudharshan,MGH Edition.

2. Database Systems Models, Languages, design and Application Programming, by Ramez Elmasri,Shamkant,B.Navathe , Pearson Edition.

3. DBMS, by Rajesh Narang,PHI learning Private Limited

4. Introduction to DB System , by Data CJ,Kannan A,S.Swamynathan, Pearson Education.

5. The Complete Reference Oracle database, by Bob Bryla, Kevin

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for B.C.A., effective from the year 2020-2021

Year: III Year **Subject Code: U18MCA502** **Semester: V** Major - 6

Title: **VISUAL BASIC PROGRAMMING** Credits: 5

Max. Marks. 75 Instruction Hours/Week**:6**

Course Objectives:

1. To enhance the basic understanding of various elements in VB.
2. To impart UI design and access to back end using various VB objects.
3. To make students familiarize with windows programming through Microsoft Foundation Class [MFC].

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

#	Course Outcome(s)
CO1	Design simple programs using simple and multiple forms in Visual Basic.
CO2	Understand various event handling mechanisms in VisualBasic.
CO3	Design effective user interface and test Visual Basic applications for real time problems.
CO4	Selects various objects to connect with back-end databasesfor the given scenario.
CO5	Provides solutions to various contemporary issues usingthe features of VB and Windows Programming.

UNIT-1

Introduction to VB- Getting started in Visual Basic – Adding an event procedure-The VB environment: Menu bar –Toolbar - Project Explorer – Toolbox - Properties window - Form designer - Form layout - Immediate window. Adding an event procedure – Adding controls

UNIT-2

Basics of Programming: Variables: Declaring variables, Types of variables, converting variables types, User-defined data types, Scope & lifetime of variables. Operators: Arithmetic, Relational & Logical operators. I/O in VB: Various controls for I/O in VB, Message box, Input Box, Print statement.

UNIT-3

Decisions and conditions: If statement, If-then-else, Select-case. Looping statements: Do-loops, For-next, While-wend, Exit statement. Nested control structures. Arrays: Declaring and using arrays, one-dimensional and multi-dimensional arrays, Static &dynamic arrays

UNIT-4

Procedures: General & event procedures, Subroutines, Functions, calling procedures-Working with forms and menus: Adding multiple forms in VB, Hiding& showing forms, Load & unload statements, creating menu, submenu, popup menus, Activate & deactivate events, Form-load event, menu designing in VB Simple programs in VB.

UNIT-5

Basic graphical user interface concepts - Advanced graphical user interface concepts - Windows common dialogs - The chart and grid controls - The timer,shape, line and toolbar Controls-Files and Files System Control.

Text Book:

1. Visual Basic 6 from the Ground Up, by Gary Cornell, Indian Edition Publications.

2. Visual Basic 6, by Noel Jerke, TMH Publications.

Books for Reference:

1. Programming in Visual Basic 6.0, by Rakesh Saini, M.M.S.Rauthan,ALok Agarwal, Sanjeev Kumar Sharma, Dreamtech Publications.

2. Visual Basic 6.0 Programming by Content Development Group.

3. Visual Basic 2015 unleashed, by Alessandro Del Sole, Pearson Education.

4. Visual Basic 6 How to Program,by Deitel & Deitel, Pearson Education.

5. Oracle Programming with Visual Basic, by Nick Showdon,Sybex Publications.

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for B.C.A. effective from the year 2020-2021

Year: III Year Subject Code:U18MCAP51 Semester:V

Practical - 5 Title: VISUAL BASIC PROGRAMMING LAB

Credits: 3 Max. Marks. 75

Instruction Hours/Week: 5

Course Objectives:

- To study the command and syntax of Visual Basic, to able make a small application to solve a business problem and to understand object oriented programming concepts and how to apply in an application.
- Students become proficient business analysts, technical experts in SQLand develop essential "Professional Skills" including teamwork, project management and presentation and interviewing techniques.

Perform the following using VB

1. Building Simple Application for Calculator
2. Application with Multiple Forms
3. Application with Dialogs
4. Application with Menus
5. Application using Data Control
6. Application using Format Dialog
7. Drag and Drop Events
8. Creating ActiveX Controls

Perform the following using VB as front-end and Oracle as back-end

9. Student Information System [ADODC Connection]
10. Student Mark Sheet Processing [ADODC Connection]
11. Electricity Bill Preparation [ADODC Connection]
12. Banking Management System [ADODC Connection]
13. Railway Reservation System [ADODB Connection]

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for B.C.A. effective from the year 2020-2021

Year: II Year **Subject Code: U18MCAP52** **Semester: V**

Practical – 6 **Title: ORACLE LAB** **Credits:3** **Max. Marks. 75**

Instruction Hours/Week: 5

Course Objectives:

- PL/SQL Programming is an intense subject that is designed to give the student hands-on exposure to Oracle PL/SQL. The student learns by coding and the class has dozens of in-class exercises and the student will be guided from very simple PL/SQL coding techniques.

SQL & PL/SQL

1. Table Creation with simple queries
2. Constraints[Primary key, foreign key, NOT NULL, Referential integrity]
3. Joins [left, right and equi-joins]
4. Sub Queries
5. Built in Functions[Date & time, mathematical Functions]
6. Procedures
7. Functions
8. Functions with exception handling
9. Cursors
10. Triggers

Perform the following using VB as front-end and Oracle as back-end

11. Library Management System [ADODC Connection]
12. Employee Details for IT company [ADODC Connection]
13. Hospital Management System [ADODB Connection]

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for B.C.A. effective from the year 2020-2021

Year: III Year Subject Code: U18ECA501 Semester:V

Elective - 1 Title:**DIGITAL LOGIC AND MICROPROCESSOR (ELECTIVE - I)**

Credits: 3 Max. Marks. 75

Instruction Hours/Week**:5**

Course Objectives:

1. Introduce the basic concept of digital and binary system
2. Give the students the concept of digital logic deisn
3. Students learn the basic tools for the design and implementation of digital modules and sub systems.

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

#	Course Outcome(s)
CO1	➢ Have a thorough understanding of the fundamental concepts and techniques used in digital electronics. ➢ Understand and examine the structure of various number systems , codes and its application in digitaldesign.
CO2	➢ Understand, analyze and design the various combinational and sequential circuits
CO3	➢ Develop the skill to build and troubleshoot digital circuits. ➢ Apply the basic postulates of Boolean algebra and shows the correlation between Boolean expressions. ➢ Apply the methods for simplifying the Boolean expressions using Quine MC Clauskey Tabulation method
CO4	➢ Understand the concepts of flip flops and types of flip flops, counters, memories, Programmable logic devices,memory unit, accumulator and digital ICs.

CO5	➢ Assess and solve basic binary math operations sing the microprocessor and explain the microprocessors and microcontroller's internal architecture and its operations within the area of manufacturing and its performance.

UNIT: 1

Introduction-Definition of Digital Computer-Structure-number systems- conversion from one number system to another system-Binary addition, subtraction, multiplication and division-Compliments and its types-Binary Codes[Including Problems]-Problems in gray code-Error Detection and Correction Code-Binary Logic-Truth Tables-Problems in Truth Table-Integrated Circuits. [Question Pattern: theory 4 marks and problems 20 marks]

UNIT: 2

Basic Definitions of Boolean Algebra-Axiomatic Definition of Boolean Algebra-Basic theorems, properties-De-morgan theorem-simple problems in Boolean algebra-Boolean functions-Laws of Boolean Algebra-Rules in Boolean Algebra-Duality Theorem-canonical and standard forms-problems in canonical and standard forms-Digital Logic Gates

[Question Pattern: theory 5 marks and problems 19 marks]

UNIT: 3

The Map Method-two, three, four, five variable map-POS Simplifications-SOP Simplifications-Don't Care Conditions-Prime Implicant Method

[Quine- Mc Clauskey Tabulation Method Problem] [Question Pattern: theory 4 marks and problems 20 marks]

UNIT: 4

Adder-Subtractor- Encoder-MUX-De-MUX-Problems in MUX-Flip Flops and its Types-Registers: Shift Registers-Ripple and Synchronous Counters-PLA-Designof ALU, Status Register and Accumulator

[Question Pattern: theory 14 marks and Compulsory Problem in Multiplexer: 10 marks]

UNIT: 5

Microprocessors, Microcomputers and Assembly Languages: Microprocessors-Microprocessor instruction set and computer languages- from large computers to single chip microcontrollers, introduction to 8085 Assembly Language Programming: The 8085Programming model-Instruction Classification- Instruction Data format and storage-how to write, assemble and execute a simple program-overview of 8085 instructions set-Microprocessor architecture and its operations-memory- input and output devices.

[Question Pattern: theory 24 marks]

TEXT BOOKS:

1. Digital Logic and Computer Design, by M.Mooris Mano ,PHI Education. [Refer for Unit-1,2,3,4]
2. Microprocessor Architecture-Programming and Applications ,by R.S.Gaonkar,Wiley Eastern Limited [Refer Unit-5]

Books for Reference:

1. Introduction to Microprocessor, by A.Mathur,Tata MC Graw Hill Publications.
2. Digital Logic and Design, by Lyoyd,PHI Education.
3. Digital Principles Design, by Givone, Tata MC Graw Hill Publications.
4. Computer Architecture and Logical Design, by T.C.Bartee,Tata MC Graw Hill Publications.
5. Microprocessors and Interfacing, by N.SenthilKumar, M.Saravanan, S.Jeevananthan,SK Shah, OXFORD Higher Education.

C. Abdul Hakeem College (Autonomous), Melvisharam
Syllabus for B.C.A. effective from the year 2020-2021

Year: **III Year** **Subject Code:U18ECA502** **Semester:V**

Elective - 1 **Title:** **Programming in C#**

Credits: **3** Max. Marks. 75

Instruction Hours/Week:5

Course Objectives:

1. Gains the skills to exploit the capabilities of C# and of the .NET framework to develop programs useful for a broad range of desktopand web applications.

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

#	Course Outcome(s)
CO1	Outline the .NET environment and its basics.
CO2	Know the C# Operators, branching and looping methods effectively.
CO3	Analyze the C# Arrays strings and structures.
CO4	Learn the concepts of Inheritance, Polymorphism and delegates in C#.
CO5	Develop the skills on Web Based Application Developmenton .NET Programming.

UNIT-1

Introducing C# - Understanding .NET: The C# Environment – Overview of C# - Literals, Variables and Data types.
(Refer the Chapter-1, 2, 3, 4)

UNIT-2

Operators and Expressions- Decision Making and Branching- Decision Makingand Looping- Methods in C#
(Refer the Chapter-5, 6, 7,8)

UNIT-3

Handling Arrays- Manipulating Strings- Structures and Enumerations- Classesand Objects.

(Refer the Chapter- 9, 10, 11, 12)

UNIT-4

Inheritance and Polymorphism- Interface: Multiple Inheritance- Operator Overloading-Delegates and Events

(Refer the chapter- 13, 14, 15, 16)

UNIT-5

Managing Console I/O Operations- Managing Errors and Exceptions- Multithreading in C#- Windows Forms and Web Based Application Development on .NET.

(Refer the Chapter- 17, 18, 19, 20)

Text Book:

1. Programming in C# A Primer, by E.Balagurusamy, Tata MC Graw HillEducation.

Books for Reference:

1. C # Programming "Quickly Learn C# Programming", by Jason Hamilton, Pearson Education.
2. C# for Beginners, by Jonas Fagerberg,Csharp School Education.
3. C# for Beginners, by Nathan Metzler, Pearson Education.
4. C#, by Ryan Turner, Tata MC Graw Hill Education.
5. For Beginners C#, by Erik Myers, Pearson Education.

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for & B.C.A. effective from the year 2020-2021

Year: III Year Subject Code: U18ECA50 Semester: V

Elective – 1 Title : **SOFTWARE TESTING (ELECTIVE - I)**

Credits: 3 Max. Marks. 75

Instruction Hours/Week: 5

Course Objectives:

1. To describe the principles of system and components testing.
2. To describe the strategies for generating system test cases.
3. To understand the essential characteristics of tool used for test automation.

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

#	Course Outcome(s)
CO1	➢ Master the knowledge and comparison of various testing strategies. ➢ Learn the understanding and implementation of a Software Development Process.
CO2	➢ Apply the software testing techniques in commercial environments and assess the adequacy of test suitesusing control flow, data flow and program mutation. ➢ Analyze the requirements specification documents.
CO3	➢ Build the role of management in a software development. ➢ Master in working on a team in a moderate-size software development project.
CO4	➢ Understanding of Load Testing and its methods. ➢ Attain the attributes and assessment of quality, reliabilityand security of software.

CO5	➢ Identify the inputs and deliverables of a testing processand work together as a team in preparing a report. ➢ Master in Application of Software Testing techniques in commercial environments.

UNIT-1

Software Testing Tools: Building software testing strategy- Software TestingDesign Techniques- Software Testing tools and Selection of test Automation Products- Software Testing lifecycle and software testing process.

UNIT-2

Test Plan: Testing effort estimation and test planning- Software test effort estimation technique- predevelopment testing requirements and design phase-best practices in program phase unit, system and integration testing.

UNIT-3

Issues in Testing: A Case Study on Acceptance testing- implementation on effective test management process- building an effective test organization- performance issues and optimization techniques.

UNIT-4

Testing Strategies: Choosing a load testing strategy-Dodging the bullets- Validating Mission Critical Server Software for Reliability- Probing the BlindSpot- Testing in today's business and usability.

UNIT-5

Testing Metrix: Testing of Web-based Applications- Testing of embedded software system used in Aerospace Applications- Testing Application for Security- Testing Metrices, Best Practices and Benchmarks.

Text Book:

1. Software Testing Effective Methods, Tools and Techniques, by RenuRajani and Pradeep Oak, Tata MC Graw Hill Education.

Books for Reference:

1. Software Testing Principlesand Practices,Seenivasan Desigan and Gopalswamy Ramesh, Pearson Education.

2. Software Testing, Concepts and Operations, by S.A.Kelkar, Willey Publications.

3. Software Quality and Testing, by S.A.Kelkar, Pearson Education.

4. Software Testing, by Paul C.Jorgensen,CRC Press.

5. Software Testing, by Sandeep Desai and Abhishek Srivastava,Pearson Education.

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for B.C.A. effective from the year 2020-2021

Year:III Year **Subject Code:U18EINP51** **Semester:V**

Title: INTERNSHIP TRAINING

Credits: 2 **Max. Marks. 75**

Instruction Hours/Week: 0

Course Objectives:

- Internships are educational and career development opportunities, providing practical experience in a field or discipline.

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

#	Course Outcome(s)
CO1	Apply knowledge of theoretical concepts, tools and resources on the project.
CO2	Analyze and solve complex problems in order to reach substantiated conclusions.

Instructions for Internships:

1. **Internship –**
   a. Internship with Industry/ Government / NGO / PSU / AnyMicro / Small / Medium Enterprise / Online Internship.
   b. Inter/Intra Institutional Activities-Inter/Intra Institutional Workshop /Training/ Working for Consultancy / research Project.

2. **Suggested Periods-** During summer vacation 4th Semester.

3. **Duration-** 2 Weeks.

4. **Proposed document to be submitted as evidence-** Internship Reportand Certificate.

Internship Report:

After completion of Internship, the student should prepare a comprehensive report to indicate what he has observed and learnt in the training period. The Student may contact Industrial Supervisor/ Faculty Mentor for assigning special topics and problems and should prepare the final report on the assigned topics. Daily diary will also help to a great extent in writing the industrial report since much of the information has already been incorporated by the student into the daily diary. The training report should be signed by theInternship Supervisor and Faculty Mentor.

5. **Evaluation Method –** Viva-voce Examination by the Faculty mentor and Faculty from other department.

Internal: 25 Marks (for attendance)

External: 75 Marks (Internship report)

The internship report will be evaluated on the basis of the following criteria:

i. Originality (15 Marks).
ii. Adequacy and Purposeful write-up (15 Marks).
iii. Organization, format, drawings, sketches, style, language etc (15 Marks).
iv. Variety and relevance of learning experience (15 Marks).
v. Practical applications, relationships with basic theory and concepts taught in the course (15 Marks).

Note: Internships may be full-time or part-time; they are full-time in the summer vacation and part-time during the academic session.

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for B.C.A. effective from the year 2020-2021

Year: III Year Subject Code: U18SCA501 Semester: V Skilled

Title: CRYPTOGRAPHY AND NETWORK SECURITY (SBS - III)

Credits: 2 Max. Marks. 75

Instruction Hours/Week: 3

Course Objectives:

1. This course is very useful to understand the Network Security Attacks.
2. Intruders Protection Mechanisms can be applied through this course.
3. This course is able to understand the Encryption and Decryption Standards

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

#	Course Outcome(s)
CO1	Know the security attacks and services
CO2	Understand the concept of Encryption Standards
CO3	Implement the authentication details of information
CO4	Understand the Email security and IP Security concepts
CO5	Study about intruders and Malicious Software details

UNIT-1

Introduction-Security trends-OSI Security Architecture-Security Attacks-Security Services-Security Mechanisms-A Model for network Security- Advanced Encryption Standard. (Refer the Chapter 1, 5)

UNIT-2

Confidentiality Using Symmetric Encryption-Introduction to number theory-Public Key Cryptography and RSA

(Refer the Chapter 7, 8, 9)

UNIT-3

Key Management: other Public Key Cryptosystems- Digital Signatures and Authentication Protocols- Email Security

(Refer the Chapter 10, 13, 15)

UNIT-4

IP Security: overview, Architecture, authentication header, encapsulating security payload, combining security associations.

Web Security: Considerations, Secure Socket Layer and Transport Layer Security-Secure E-transactions.

Intruders: Introduction-definition-intruders detection-password management.(Refer the Chapter 16, 17, 18)

UNIT-5

Malicious Software: Viruses and related threats, virus counter measures, distributed denial of service attacks.

Firewalls: Design principles, trusted systems, common criteria for IT SecurityEvaluation.

(Refer the Chapter 19, 20)

Text Book:

1. Cryptography and Network Security, by William Stallings, 4th Edition,Pearson Education

Books for Reference:

1. Understanding Cryptography, by Christof Paar, Jan Pelzl,Springer Publications
2. Introduction to Modern Cryptography, by Jonathan Katz, Yehuda Lindell,Chapman & Hall/CRC Taylor & Francis Group Publication
3. Crytography and Network Security, by Santosh A.Darade, Tech-Neo Publications.
4. Crytography and Network Security, by Behrouz A Forouzan, Debdeep Mukhopadhyay,MGH Publications.
5. Crytography and Network Security, by Ajay Raj Parashar, Deepti Mittal,Laxmi Publications.

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Syllabus for B.C.A. effective from the year 2020-2021

Year: III Year Subject Code: U18MCA601 Semester: VI

Major - 7 Title: WEB PROGRAMMING

Credits: 6 Max. Marks. 75

Instruction Hours/Week: 6

Course Objectives:

1. To explain the student the need of scripting languages in programming environment
2. This subject deals various tags available in scripting language
3. This course explain about the intrinsic event handlers

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

#	Course Outcome(s)
CO1	➢ Understand the different types of scripting languages currently available highlighting their major advantages, disadvantages and uses ➢ Understand Methods used to implement client side scripts within web pages ➢ Improve the embedded coding and externally storedcode
CO2	➢ Apply advance terminology and standards ➢ Understand the implication for application design
CO3	➢ Understand the client – side scripting versus server-side scripting ➢ Illustrate features of PHP, XHTML, advantages of PHP over other scripting languages, running a PHPscript ➢ Describe the user defined function in PHP, types of arrays, traversing arrays using Loops and working with files and directories
CO4	➢ Make use of Relational Database, SQL, PHP/MySQL Functions and creating MySQL database with PHP

CO5	➢ Examine HTML and database tables, building formsform queries, basic form submission to a Database and editing data with an HTML form

UNIT-1

Understanding HTML and XHTML Connections - Understanding Cascading Style Sheets - Understanding Java Script - Working with Fonts, Text Blocks, and Lists- Using Tables to Display information - Using External and InternalLinks -Working with Colors, images, and Multimedia.
[Refer the Chapter-2, 3, 4, 5, 6, 7,8]

UNIT-2

Working with Margin, Padding, Alignment, and Floating-
Understanding the CSS Box Model and Positioning -Using CSS to do morewith Lists, Text and Navigation - Creating Fixed or Liquid Layouts - Understanding Dynamic Websites - Getting Started with Java Script Programming.
[Refer the Chapter-9, 10, 11, 12, 13, 14]

UNIT-3

Using JavaScript Variables, Strings, and Arrays -
Using JavaScript function and objects- Controlling Flow with Conditions and Loops- Responding to Events- Using Windows and frames -AJAX Remote Scripting.
[Refer the Chapter-16, 17, 18, 19, 20, 24]

UNIT-4

PHP Language Structure: The Building Blocks of PHP -Flow Control Functionsin PHP- Working with Functions -Working with Arrays - Working with objects - Getting involved with the code: Working with Strings, Date and Time.
[Refer the Chapter-5, 6, 7, 8, 9,10]

UNIT-5

Working with Forms – working with cookies and user session - working with Images - PHP and MySQL Integration: Understanding the Database Design Process-Using Transactions and Stored Procedures in MySQL-Interacting with MySQL using PHP. [Refer the Chapter-11, 12, 14, 15, 17, 18]

Text Book:

1. HTML, CSS and JavaScript All in One, by Julie C Meloni, SAMS tech Publications.[Refer Units-1, 2 and 3]

2. PHP, MySQL and Apache All in One, by Julie C Meloni, SAMS tech Publications[Refer Units- 4 and 5]

Books for Reference:

1. Learning Web Design, by Jennifer Niederst Robbins, O'Reilly Publications.

2. Cascading Style Sheets, by Bric A Meyer, O'Reilly Publications.

3. Learning PHP, MySQL, Java Script, CSS & HTML5, by Robin Nixon, O'Reilly Publications.

4. Pro Apache Struts with Ajaz, by John Carnell with Rob Harrop Edited by Kunal Mittal, Apress Publications.

5. Pro PHP Application Performance, by Armando Padilla and Tim Hawkins, Apress Publications.

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Year: III Year Subject Code:U18MCA602 Semester:VIMajor – 7

Title: R PROGRAMMING

Credits: 5 **Max. Marks. 75**

Instruction Hours/Week: 6

Course Objectives:

- This R tool lab course facilitates to apply simple commands in R andexplore the data mining tasks with R.

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

#	Course Outcome(s)
CO1	Apply simple commands using R
CO2	Generate code using linear and logistic regression
CO3	Implement classification and clustering using R
CO4	Create code using association mining
CO5	Learn the main R data structure – vector and data frame, compute basic statistics

UNIT-1

Introduction – Getting Started – Vectors – Matrix and Arrays

(Refer the Chapter 1, 2, 3)

UNIT-2

List - Data Frames – Factors and Tables – Programming Structures(Refer the Chapter 4, 5, 6, 7)

UNIT-3

Doing Math and Simulations in R - Object Oriented Programming - Input / Output

(Refer the Chapter 8, 9, 10)

UNIT-4

String Manipulation – Graphics – Debugging

(Refer the Chapter 11, 12, 13)

UNIT-5

Performance Enhancement: Speed and Memory – Interfacing R to other languages – Parallel R

(Refer the Chapter 14, 15, 16)

Text Book:

1. An Introduction to R, by William N. Venables and David M. Smith, Network Theory Limited Publications.

2. The Art of R Programming – A Tour of Statistical Software Design, by Normal Matloff, No starch Publications.

Books for Reference:

1. R for Data Science, by Hadley Wickham and Garrett Grolemund, O'Reilly Media Publications.

2. Hands-On Programming with R: Write your own functions and Simulations,by Garrett Grolemund, O'Reilly Media Publications.

3. An Introduction to Statistical Learning with Application R, by Gareth James, Daniela Witten, Trevor Hastie, Robert Tibshriani, Springer Publications.

4. R in Action, by Robert.L.Kabacoff, Manning Publications.

5. Practical Data Science with R, by John Mount and Nina Zumel, Manning Publications.

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Syllabus for B.C.A. effective from the year 2020-2021

Year: III Year Subject Code: U18MCAP61 Semester: VI

Practical - 7 Title: WEB PROGRAMMING LAB

Credits: 3 Max. Marks. 75

Instruction Hours/Week:4

Course Objectives:

- To develop an ability to design and implement static and dynamic website.Web Basics: Design web pages through Coding using HTML and DHTML,Browser side scripting using JavaScript with a focus on, Event Handling and Validation, Server Side Scripting, PHP Syntax, variables, loops and Constructs and etc.

Learning Outcome(s):

At the end of the Course, Students should be able to:

- Design and implement dynamic websites with good aesthetic senseof designing and latest technical know-how's.
- Have a Good grounding of Web Application terminologies, internettools, Ecommerce and other web services.

1	Create a Web Page for Student Self Information
2	a. Create a HTML document about your University with following formatting-Bold, italics, underline, colors, headings, title, font and font width, background, paragraph, line break, horizontal line, blinking text as well as marquee text. b. Create a HTML document about your College with Ordered andUnordered lists, insert images, use internal and external linking.
3	Create a web page for your class time table using rowspan and colspan
4	Create a web page with email chat
5	Create a simple page using frames and tables
6	Create a web page for any mobile network communication, using CSS
7	Create an HTML document (having two frames) which will appear asfollows: About Department 1 Department 2 Department 3 This frame would show the contents according to the link clicked by the user on the left frame.

8	Create an HTML document containing Horizontal frames as follows: Department Names(could be along with logos) Contents according to the link clicked
9	Create a website of 6-7 pages with different effects as mentioned in above problems[6,7,8]
10	Create a event driven program for the following: a. Print a table of numbers from 5 to 15 and their squares andcubes using alert. b. Print the largest of three numbers c. Find the factorial of a number n
11	Enter a list of positive numbers terminated by zero. Find the sum and average of these numbers.
12	Read n numbers. Count the number of negative numbers, positive numbers and zeros in the list.
13	Creating and displaying the arrays of elements using JavaScript
14	Displaying a String with its character using JavaScript
15	Mouse over event
16	Create a new window without toolbar, status bar and address bar
17	Scroll bar using JavaScript
18	Write a Program to display count, from 5 to 15 using PHP loop as givenbelow: ➢ You can use for or while loop ➢ You can use variable to initialize count ➢ You can use html tag for line break
19	Write a factorial program using for loop in PHP
20	Write a program to create chess board in PHP using for loop
21	Write a program to calculate Electricity Bill in PHP using if else conditions. The conditions for calculating EB is as follows: ✓ For first 50 units-Rs.3.50 per unit ✓ For next 100 units-Rs.4.00 per unit ✓ For next 100 units-Rs-5.20 per unit ✓ For units above 250-Rs.6.50 per unit You can use conditional Statements.
22	Write a Simple Calculator Program [with addition operation,subtraction operation, multiplication operation and division operation], in PHP using switch case.
23	a. Write a PHP program to find the length of the string b. Write a PHP program to reverse the string c. Write a PHP program to count the words in the string
	d. Write a PHP program to convert a string into Uppercase
24	Write a PHP program to check whether a number is positive, negative or zero

Note:

For PHP reference programs, refer the following: https:// tutorialsclass.com>exercises

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Year: III Year Subject Code: U18MCA62 Semester: VI Practical - 8

Title: R PROGRAMMING LAB

Credits: 3 **Max. Marks. 75**

Instruction Hours/Week: 4

Course Objectives:

- Master the use of the R and RStudio interactive environment
- Expand R by installing R packages.
- Explore and understand how to use the R documentation.
- Read structured data into R from various sources.
- Understand the different data types and data structures in R.

Learning Outcome(s):

After successful completion of the course, students should be able to:

- Understand the basics in R programming in terms of constructs, control statements, string functions.
- Understand the use of R for Big Data Analytics.
- Learn to apply R Programming for text processing.
- Able to appreciate and apply the R Programming from a statistical perspective.

Software Lab Based on R Programming

1. Write a R program to create a list containing String, numbers, vectorsand a logical values.
2. Write a R Program to merge two given list into one list.
3. Write a program that prints hello world to the screen
4. Write a program that asks the user for a number n and prints the sum ofthe numbers 1 to n
5. Write a program that prints a multiplication table for number up to 12
6. Write a function that returns the largest element in a list
7. Write a function the computes the running total of a list

8. Write a function that tests whether a String is a Palindrome
9. Implement the following sorting algorithms: selection sort, Insertion sort,Bubble Sort
10. Implement Linear Search
11. Implement Binary Search
12. Implement Matrix Addition, Subtraction and Multiplication

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Syllabus for B.C.A. effective from the year 2020-2021

Year: III Year **Subject Code: U18MCAP60** **Semester: VI**

Project Title: **PROJECT AND VIVA-VOCE**

Credits: 3 **Max. Marks. 75**

Instruction Hours/Week: 4

Course Objectives:

- The objective of the project is to motivate them to work in emerging/latest technologies, help the students to develop ability, to apply theoretical and practical tools/ techniques to solve real life problems related to industry, academic institutions and research laboratories.

1. The project is of 4 hours per week one [Semester: VI] semester durationand a student is expected to do planning, analyzing, designing coding and implementing the project. The initiation of project should be with theproject proposal. The synopsis approval will be given by the project guides.

2. The project proposal should include the following:
   - ✓ Title
   - ✓ Objectives
   - ✓ Input and output
   - ✓ Details of modules and process logic
   - ✓ Limitations of the project
   - ✓ Tools/ platforms, languages to be used
   - ✓ Scope of future applications
3. For the project work, the internal guide evaluates the work for 25 marksbased on the performance of the candidates during the development ofthe project and the external examiner will evaluate the project work as follows:

- Project Report: 30 Marks
- Viva – Voce:45 Marks

4. The Project work should be either an individual one or a group of notmore than five members.

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Syllabus for B.C.A. effective from the year 2020-2021

Year: III Year Subject Code: U18ECA601 Semester: VI

Elective - 2 Title: GIRD & CLOUD COMPUTING (ELECTIVE - II)

Credits: 3 Max. Marks. 75

Instruction Hours/Week: 4

Course Objectives:

1. The student should be made to understand how Grid computing helps in solving large scale scientific problems. Gain knowledge as the concept of virtualization that is fundamental to cloud computing.Understand the security issues in the grid and cloud environment.

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

#	Course Outcome(s)
CO1	➢ Understand how the distributed computing environmentscan be built from lower lever services.
CO2	➢ Understand the importance of virtualization in the distributed computing and how this has enabled the development of Cloud Computing.
CO3	➢ Analyze the performance of Cloud Computing.
CO4	➢ In-depth knowledge of bid data and Hadoop and its ecosystems, also master in real time data processingusing various tools. ➢ Become expert in working on data and managing data resources.
CO5	➢ Learn the concepts of grid security and resource management. ➢ Understand the concepts of grid portals and also the advanced grid middleware.

UNIT: 1

Introduction: Evolution of Distributed computing: Scalable computing over the internet – Technologies for network based systems – clusters of co – operative computers gird computing infrastructures – cloud computing – service oriented architecture – introduction to Grid Architecture and standards – Elements of Grid – Overview of Grid Architecture

UNIT: 2

Grid Services: Introduction to Open Grid Services Architecture (OGSA) – Motivation – Functionality requirements – Practical & Detailed view of OGSA/OGSI – Data Intensive Grid Service Models – OGSA Services

UNIT: 3

Virtualization: Cloud deployment models: Public Private Hybrid, community – Categories of Cloud Computing: everything as a service infrastructure platform Software – Pros and Cons of Cloud Computing – implementation levels of Virtualization – Virtualization Structure – Virtualization of CPU Memory and I/O devices –Virtual Clusters and Resources Management – Virtualization for DataCenter Automation.

UNIT: 4

Programming Model: Open Source Grid Middleware Packages – Globus Toolkit(GT4) Architecture Configuration – usage of Globus – main components and programming Model – introduction to Hadoop framework – map redure, input splitting, map and reduce functions, specifying input and output parameters, configuring and running a job – Design of Hadoop file system, HDFS concepts, command line and java interfaced at flow of file read & file write

UNIT: 5

Security: Trust models for Grid security environment – Authentication and Authorization methods – grid security infrastructure – cloud infrastructure security – network host and application level – aspects of data security provider data and its security identity and access management architecture. IAM practices in the cloud, SaaS, PaaS availability in the cloud, key privacy issues inthe cloud

TEXT BOOKS:

1. Grid & Cloud Computing, by Bhushan Jadhav & Sonali Jadhav , Technical Publications

Books for Reference:

1. Grid and Cloud Computing, by D. Chitra & A. Kaliappan, Scitech Publication.

2. Fundamentals of Grid Computing, by Frederic Magoules, CRC Press Publication.

3. Grid Computing, by Joshy Joseph & Craig Fellenstein PHI Edition.

4. Cloud Computing Concept, Technology & Architecture by Thomas ErlPHI publication.

5. Essentials of Cloud Computing, by K ChandraSekaran, CRC Press.

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Syllabus for B.C.A. effective from the year 2020-2021

Year: III Year **Subject Code: U18ECA602** **Semester: VI**

Elective - 2 **Title: MOBILE COMPUTING (ELECTIVE - II)**

Credits:3 **Max. Marks. 75**

Instruction Hours/Week: 4

Course Objectives:

1. To learn the basic concepts, aware of the GSM, SMS, GPRS Architecture.
2. To have an exposure about wireless protocols –WLN, Bluetooth,WAP, ZigBee Issues
3. To know the network, Transport Functionalities of mobile communication
4. To understand the concepts of Adhoc and wireless sensor networks
5. To impart knowledge about mobile Application Development

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

#	Course Outcome(s)
CO1	Gain the knowledge about various types of wireless data networks and wireless voice networks
CO2	Understand the architectures, the challenges and the solutions of wireless communication those are in use
CO3	Realize the role of wireless protocols in shaping the future internet
CO4	Know about different types of wireless communication networks and their functionalities
CO5	Able to develop simple mobile application using android

UNIT-1

Wireless Communication Fundamentals, Architecture:

Frequencies Spectrum – Multiplexing – Spread spectrum – GSM vs CDMA – 2G mobile Wireless services comparison of 2G and 3G – GSM Architecture –Entities – Call Routing – PLMN – address and identifiers – Network Aspects – mobility Management – Frequency Allocation – Authentication and Security – SMS architecture operations – Data Service – Application.

UNIT-2

Mobile Wireless Short Range Networks:

Introduction - WLAN Equipment – WLAN Topologies – WLAN Technologies – IEEE 802.11 Architecture – WLAN MAC –security of WLAN, Power Management – Standards – WAP 2.0 Bluetooth enabled Devices network – layers in Bluetooth Protocol – security in Bluetooth – lrDA - Zigbee

UNIT-3

Mobile IP Network Layer & Transport Layer:

IP and Mobile IP network Layer – Packet delivery and Handover Management -location Management - Registration – Tunneling and Encapsulation – Route optimization – dynamic host configuration protocol – VOIP –IPSEC – Mobile transport Layer – conventional TCP/IP Transport Layer Protocol – Indirect, Snooping, Mobile

UNIT-4

Mobile Ad-Hoc, Sensor Networks:

Introduction to Mobile Ad hoc Network – MANET – Routing and Routing Algorithm – Security – Wireless Sensor Networks – Applications – Distributed Network and Characteristics – Communication Coverage- sensing Coverage – localization – Routing – Function Computation – Scheduling

UNIT-5

Mobile Application Development: Mobile application Development – Application Development overflow – Techniques for composing Applications – understanding the Android Software'sStack – Android Application Architecture - Developing for Android – the Android Application Life Cycle – The Activity Life Cycle – Crating Your – First Android Activity - Creating Application and Activities – Creating User interfaces – intents – Broadcast Receivers – Adapters – Data Storage, Retrieval and sharing – Geo Services – Creating mobile applications like game, clock, calendar, Convertor, phone book, Text Editor.

TEXT BOOKS:

1. Mobile Communications, by Jochen Schillar, Pearson Education.

Books for Reference:

1. Android Application Development For Dummies, by Donn Felker, Wiley Publications.

2. Professional Android 2 Application Development, by Reto Meier, Wrox's Programmer to Programmer Series.

3. Hello, Android: Introducing Google's Mobile Development Platform, by Ed Burnette, Pragmatic Programmers.

4. Android A Programmer's Guide, by Jerome(J.F) DiMarzio, Tata MC GrawHill Publications.

5. Fundamentals of Mobile Computing, by Prasant Kumar Pattnaik, RajibMall, PHI Publications.

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Syllabus for B.C.A. effective from the year 2020-2021

Year: III Year Subject Code: U18ECA603 Semester: VI Elective - 2

Title: INTRODUCTION TO DATA MINING (ELECTIVE - II)

Credits: 3 **Max. Marks. 75**

Instruction Hours/Week: 4

Pre-Requisites:

1. The knowledge of this course is to understand the concepts of Data Mining.
2. Explain the methodologies used for analysis of data
3. Describe the various techniques which enhance the data modeling.
4. Discuss and compare various approaches with other techniques indata mining and data warehousing. Familiar with mathematical foundations of Data mining tools

Course Objectives:

1. Be familiar with mathematical foundations of data mining tools
2. Understand and implement the classical models and algorithms inData Mining.
3. Characterize the kinds of patterns that can be discovered by association rule mining, classification and clustering.
4. Master data mining techniques in various application like social, scientific and environmental context.
5. Develop the skill in selecting the appropriate data mining algorithmfor solving practical problems.

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

#	Course Outcome(s)
CO1	➢ Understand the functionality of various data mining components. ➢ Appreciate the strengths and limitations of various data mining models.
CO2	➢ Explain the analyzing techniques of various data.
CO3	➢ Describe the different methodologies used in data mining and data warehousing.
CO4	➢ Compare the different approaches data mining with various technologies.
CO5	➢ Understand the Online Analytical Processing and information privacy

UNIT-1

Introduction- Data Understanding and Data Preparation
(Refer the Chapter-1, 2)

UNIT-2

Association Rules Mining- Classification
(Refer the Chapter- 3, 4)

UNIT-3

Cluster Analysis – Web Data Mining
(Refer the Chapter- 5, 6)

UNIT-4

Search Engine and Query Mining- Data Warehousing
(Refer the Chapter- 7, 8)

UNIT-5

OLAP (Online Analytical Processing)-Information Privacy and Data Mining
Refer the Chapter- 9, 10)

Note: For all the five units, exclude the Case Studies

Text Book:

1. Introduction to Data Mining with Case Studies, by G.K.Gupta, Eastern Economy Edition.

Books for Reference:

1. Data Mining Concepts and Techniques, by Jiawei Han and Micheline Kamber, Morgan Kaufmann Publishers.

2. Introduction to Data Mining, by Pang Ning Tan,Vipin Kumar, Michael Steinbanch, Pearson Educations.

3. Introduction to Data Mining Techniques, by Arun K.Pujari, University Press.

4. Data Warehousing Fundamentals, by Paulraj Ponnaiah, Willey Student Edition.

5. The Data Warehouse Life Cycle Toolkit, by Ralph Kimball, Willey Student Edition

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Syllabus for B.C.A. effective from the year 2020-2021

Year: III Year **Subject Code: U18SCA601** Semester: VI

Skilled Based – 4 Title: **BIG-DATA ANALYTICS (SBS - IV)**

Credits: 2 Max. Marks. 75

Instruction Hours/Week: 2

Course Objectives:

1. To provide an overview of an exciting growing field of Big Data Analytics.
2. To introduce the tools required to manage and analyze big data like Hadoop, NoSql MapReduce.
3. To teach the fundamental techniques and principles I achieving big data analytics with scalability and streaming capability.
4. To enable students to have skills that will help them to solve complex realworld problems in for decision support.

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

#	Course Outcome(s)
CO1	➢ Understand the key issues in big data management and its associated applications in intelligent business and scientific computing.
CO2	➢ Acquire fundamental enabling techniques and scalable algorithms like Hadoop, Map Reduce etc inBig Data Analytics.
CO3	➢ Interpret business models and scientific computing paradigms and apply software tools.
CO4	➢ Achieve adequate perspectives of Big Data Analyticsin various Applications like recommender system, Social Media Applications and etc.
CO5	➢ Understand the Machine Learning for Big Data in Health Care Applications and Deep Reinforcement Learning.

UNIT-1

Big Data, Clouds and Internet of things: Enabling technologies for Big Data computing- Data Science and Related Disciplines – Emerging Technologies in the Next Decade – Interactive SMACT Technologies – Social Media, Mobile Networks and cloud Computing – Social networks and web Service sites – mobile cellular core Networks – Mobile Devices and internet Edge Networks – Mobile cloud computing infrastructure – Big data Acquisition and Analytics Evolution data analytics over the clouds – Machine intelligence and Big Data Applications - Data Mining and Machine Learning – cognitive computing

Smart clouds, Virtualization and Mashup Services – cloud computing models and services – cloud taxonomy based on services provided – layered Development cloud service platforms – cloud Models for big Data storage and processing – cloud resources for supporting Big Data Analytics – creation of Virtual Machines and Docker Containers – Virtualization of Machine Resources

– Hypervisors and virtual Machines – Docker Engine and application containers

– deployment opportunity of VMs/containers – cloud architectures and resources Management – cloud Platform Architectures – VM Management and Disaster Recovery – open stack for constructing Private clouds – container Scheduling and orchestration – VM Ware Packages for building Hybrid clouds – case Studies of IaaS, PaaS and SaaS clouds – AWS Cloud Service offerings – Platform Pass Clouds – Google App Engine – application SaaS cloud – the sales force clouds – mobile clouds and inter – cloud Mashup services – Multi – cloud Mashup services – skyline discovery of Mashup services –Dynamic Composition of Mashup services [Refer the Chapter- 1,2]

UNIT-2

IOT SENSING, MOBILE AND COGNITIVE SYSTEM

Sensing technologies for internet of Things – enabling technologies and evolution of loT – introducing RFID and Sensor Technologies – loT Architectural and Wireless Support – loT interactions with GPS, clouds and Smart Machines –local versus Global Positioning Technologies – Standalone versus cloud- centricloT Applications – IoT

interaction Frameworks with Environments – Radio Frequency identification (RFID) – RFID Technology and Tagging Devices – RFID System Architecture – IoT Support of Supply Chain Management – Sensor, Wireless Sensor Networks and Body Area Networks – Global Positioning Systems – cognitive Computing technologies and prototype system -Cognitive Science and Neuro informatics – Brain – Inspired computing chips andsystems – Google's brain Team Projects – IoT contexts for cognitive Services – Augmented and Virtual Reality Applications

SUPERVISED MACHINE LEARNING ALGORITHMS

Taxonomy of Machine Learning Algorithms – Machine learning Based on learning styles- machine learning Based on similarity testing – supervised machine learning styles – supervised machine learning algorithms – unsupervised machine learning algorithms – regression Methods for machine learning – basic concept of regression analysis – linear regression for predictionand forecast – logistic regression for classification – supervised classification methods – rule – based classification – the nearest neighbor classifier – supportvector machines – Bayesian network and ensemble methods – Bayesian classifiers – Bayesian belief networks – random forests and ensemble methods [Refer the Chapter- 3, 4]

UNIT-3

UNSUPERVISED MACHINE LEARNING ALGORITHS

Introduction and Association Analysis – introduction to Unsupervised Machine Learning – Association Analysis and A Priori Principle -
Association Analysis Rule Generation – clustering Methods without labels – cluster Analysis for prediction and forecasting – k means clustering for classification – agglomerative hierarchical – clustering – Density based clustering – Dimensionality Reduction and other Algorithms – Dimensionality Reduction Methods – Principal component Analysis (PCA) – Semi – SupervisedMachine Learning Methods – how to choose machine Learning algorithms – performance Metrics an Model fitting – Methods to Reduce model over – fitting –methods to avoid model under fitting – effect of using different loss Functions [Refer the Chapter: 5]

UNIT-4

DEEP LEARNING WITH ARTIFICAL NEURAL NETWORKS

Introduction Deep Learning Mimics Human Senses – Biological Neurons Versus Artificial Neurons – Deep Learning Versus shallow learning – Artificial neural networks (ANN) – single layer artificial neural network- forward propagation andback propagation in ANN – stacked auto encoder and deep belief network – auto encoder – stacked auto encoder – restricted Boltzmann machine – deep belief networks -convolution on CNN – deep convolution neural networks – other deep learning networks .

[Refer the Chapter- 6]

UNIT-5 MACHINE LEARNING FOR BIG BATA IN HEALTHCARE APPLICATIONS

Healthcare problems and machine learning tools – healthcare and chronic disease Detection problem – software libraries for Machine learning applications

– loT based healthcare systems and Applications – loT Sensing for Body Signals

– healthcare monitoring systems – physical exercise promotion and smart clothing – healthcare Robotics and mobile health cloud – big Data Analytics for healthcare applications – healthcare big Data prepossession – predictive Analytics for disease Detection - performance analysis of five disease Detection methods – mobile big Data for disease control – emotion – control healthcare application s – mental healthcare system – emotion interaction through loT and clouds – Emotion – control via Robotics Technologies –A 5G Cloud – Centric Healthcare system

Deep Reinforcement learning and social Media Analytics Deep learning system and social Media Industry – Deep Learning Systems and software support – reinforcement learning Principles – social media industry and global impact – text and image recognition using ANN and CNN – numeral recognition using Tensor flow for ANN – numeral recognition using convolutional netural networks – medical text analytics by convolution neural networks – deep mind with deep reinforcement learning – Google DeepMind AI programs – Google AlphaGo Game competition – flappybird game using reinforcement learning – big data requirements in social – media applications – social networks and graphanalytics – predictive analytics software tools – community detection

in social networks. [Refer the Chapter-7,8]

Text Book:

1. Big – Data Analytics for Cloud, loT and Cognitive Computing, by Kai Hwang and Min Chen, Wiley Publications.

Books for Reference:

1. Data Science and Big Data Analytics: Discovering, Analyzing, Visualizingand Presenting Data, by EMC Education Services.

2. Big Data , The Essential Guide to Work, life and Learning in the age of Insight, by Viktor Mayer-Schonberger and Kenneth Cukier, John Murray Publishers.

3. too BIG to IGNORE, The Business Case for Big Data, by Phil Simon, Wiley Publications.

4. Predictive Analytics: The Power to predict who will Click Buy, Lie or Die,by Eric Siegel, Wiley Publications.

5. Big Data Analytics, by Venkat Ankam, Packt Publications.

C. Abdul Hakeem College (Autonomous), Melvisharam

Syllabus for B.C.A. effective from the year 2020-2021

Year: III Year **Subject Code: U18CEA601** Semester:VI

Max. Marks. 100 Title: **EXTENSION ACTIVITIES**

Credits: 1 Instruction Hours/Week:0