

Sadakathullah Appa College **(Autonomous)**

(Reaccredited by NAAC at an 'A' Grade. An ISO 9001:2015 Certified Institution)

RAHMATH NAGAR, TIRUNELVELI- 11, TAMIL NADU

DEPARTMENT OF INFORMATION TECHNOLOGY



CBCS SYLLABUS

For

B.SC. Information Technology

(Applicable for students admitted in June 2019 and onwards)

**(As per the Resolutions of the Academic Council Meeting
held on 03.03.2018, 17.10.2018 and 02.03.2019)**

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B.Sc. Information Technology (2018 – 2021)
(Applicable for students admitted in June 2019 onwards)

DISTRIBUTION OF CREDITS, NO. OF PAPERS & MARKS

Part	Course	Semester	Hours	Credits	Papers	Marks
I	Tamil / Arabic	I to IV	12	8	2	200
II	English	I to IV	12	8	3	200
III	Discipline Specific Core (DSC) + Project+Practicals	I to VI	90	76	22	2100
	Discipline Specific Elective (DSE+Practical)	III to VI	28	22	8	700
	Allied Theory + Practical	I to IV	24	16	8	600
IV	Non-major Elective (NME)	III & IV	4	4	2	200
	Skill Enhancement Course (SEC)	V & VI	4	4	2	200
	Skill Based Common (SBC)	VI	2	2	1	100
	Ability Enhancement Compulsory Course (AECC) Environmental Studies (EVS)	I	2	2	1	100
	Value Education (VE)	II	2	2	1	100
V	Extension Activities	I to IV+	--	1+1*	1	100
	MOOC ^{\$}	I – V	-	2#		
TOTAL			180	145+1*+2#	51	4600

SEMESTER WISE DISTRIBUTION OF HOURS

Part	I	II	III				IV				Total	
			SEM	T/A	ENG	DSC	PRO/ FW	DSE	AL	NME		SEC
I	6	6	10	-	-	6	-	-	-	-	2	30
II	6	6	10	-	-	6	-	-	-	-	2	30
III			16	-	6	6	2	-	-	-	-	30
IV			16	-	6	6	2	-	-	-	-	30
V	-	-	20	-	8	-	-	2	-	-	-	30
VI	-	-	12	6	8	-	-	2	2	-	-	30
Total	12	12	84	6	28	24	4	4	2	2	4	180

+ Activities and evaluation are to be performed during Semesters I to IV and results to be declared at the end of the Semester IV along with those for other courses in the Mark Statement.

* Extra credit for Sadakath Outreach Programme (SOP)

^{\$} As per the guidelines of the UGC all the UG and the PG students shall enrol for one Massive Open Online Course offered through SWAYAM, NPTEL, etc.

#Two extra credits will be given on completion of the course.

B.Sc. (Information Technology) (2018-2021) CBCS Syllabus
(Applicable for students admitted in June 2019 onwards)

TITLE OF THE PAPERS, CREDITS & MARKS

I SEMESTER								
P	SUB	Title of the paper	S.CODE	H/W	C	MARKS		
						I	E	T
I	TA 1	,f;fhyj; jkpo;	18ULTA11	6	4	25	75	100
	AR 1	Applied Grammar and Translation – I	18ULAR11					
II	EN 1	Prose, Poetry and Grammar - I	18ULEN11	4	2	25	75	100/2
		English for Communication	18ULEC11	2	2	25	75	100/2
III	DSC1	Programming in C	18UCIT11	4	4	25	75	100
	DSC2	Computer and its Applications	18UCIT12	4	4	25	75	100
	DSCP-I	Programming in C Practicals	18UCIT1P1	2	1	40	60	100/2
	AI-1	Office Tools	18UAIT11	4	3	25	75	100
	AI-P1	Office Tools Practicals	18UAIT1P1	2	1	40	60	100/2
IV	EVS	Environmental Studies	18UENS11	2	2	25	75	100
				30	23			700
II SEMESTER								
I	TA 2	rkaj; jkpo;	18ULTA21	6	4	25	75	100
	AR 2	Applied Grammar and Translation – II	18ULAR21					
II	EN 2	Prose, Poetry and Grammar – II	18ULEN21	6	4	25	75	100
III	DSC3	Object Oriented Programming with C++	18UCIT21	4	4	25	75	100
	DSC4	Digital Principles and System Architecture	18UCIT22	4	4	25	75	100
	DSCP-II	Object Oriented Programming with C++ Practicals	18UCIT2P1	2	1	40	60	100/2
	AI-2	Web Designing Tools	18UAIT21	4	3	25	75	100
	AI-P2	Web Designing Tools Practicals	18UAIT2P1	2	1	40	60	100/2
IV	VE	Value Education – I	18USVE2A	2	2	25	75	100
		Value Education - II	18USVE2B					
				30	23			700
III SEMESTER								
III	DSC5	Programming in Java	18UCIT31	4	4	25	75	100
	DSC6	Data Structures	18UCIT32	4	4	25	75	100
	DSC7	Data Communications and Networking	18UCIT33	4	4	25	75	100
	DSCP-III	Programming in Java Practicals	18UCIT3P1	4	2	40	60	100
	DSE-1	VB.Net	18UEIT3A	4	4	25	75	100
		Micro Processor	18UEIT3B					
	DSEP-1	VB.Net Practicals	18UEIT3PA	2	1	40	60	100/2
		Micro Processor Practicals	18UEIT3PB					
	AII-1	Desktop Publishing	18UAIT31	4	3	25	75	100
	AII-P1	Desktop Publishing Practicals	18UAIT3P1	2	1	40	60	100/2
IV	NME-I	Photo Editing and Animation	18UNIT31	2	2	25	75	100
				30	25			800

IV SEMESTER								
P	SUB	Title of the paper	S.CODE	H/W	C	MARKS		
						I	E	T
III	DSC8	RDBMS with Oracle	18UCIT41	4	4	25	75	100
	DSC9	Operating System	18UCIT42	4	4	25	75	100
	DSC10	Internet of Things	18UCIT43	4	4	25	75	100
	DSCP-IV	RDBMS with Oracle Practicals	18UCIT4P1	4	2	40	60	100
	DSE-2	PYTHON Programming	18UEIT4A	4	4	25	75	100
		Active Server Page	18UEIT4B					
DSEP-2	PYTHON Programming Practicals	18UEIT4PA	2	1	40	60	100/2	
	Active Server PagePracticals	18UEIT4PB						
AII-2	Unix and Shell Programming	18UAIT41	4	3	25	75	100	
	Unix and Shell Programming Practicals	18UAIT4P1	2	1	40	60	100/2	
IV	NME-II	Document Creation Tools	18UNIT41	2	2	25	75	100
V	EX	Extension Activities (Choose from the list)	--	--	1		100	100
		SOP	18UEXSOP		1*			
TOTAL				30	26+1*			900
V SEMESTER								
P	SUB	Title of the paper	S.CODE	H/W	C	MARKS		
						I	E	T
III	DSC11	Computer Graphics and Multimedia	18UCIT51	6	4	25	75	100
	DSC12	DOT Net Programming	18UCIT52	6	4	25	75	100
	DSC13	Artificial Intelligence	18UCIT53	4	4	--	--	100
	DSCP-V	Computer Graphics and Multimedia Practicals	18UCIT5P1	4	2	40	60	100
	DSE-3	PHP Programming	18UEIT5A	4	4	25	75	100
		J2EE Programming	18UEIT5B					
DSEP-3	PHP Programming Practicals	18UEIT5PA	4	2	40	60	100	
	J2EE Programming Practicals	18UEIT5PB						
IV	SEC-I	Internet Security	18USIT51	2	2	25	75	100
TOTAL				30	22			700
VI SEMESTER								
III	DSC14	Mobile Application Development	18UCIT61	4	4	25	75	100
	DSC15	Software Engineering	18UCIT62	4	4	25	75	100
	DSC16	Project	18UCIT63	6	6	-	-	100
	DSCP-VI	Mobile Application Development Practicals	18UCIT6P1	4	2	40	60	100
	DSE-4	Data Mining	18UEIT6A	4	4	25	75	100
		Virtual Reality	18UEIT6B					
DSEP-4	Data Mining Practicals	18UEIT6PA	4	2	40	60	100	
	Virtual Reality Practicals	18UEIT6PB						
IV	SEC-II	Java Script	18USIT61	2	2	25	75	100
	SBC	Personality Development	18USPD62	2	2	25	75	100
TOTAL				30	26			800
I-V Sem	Massive Open Online Course ^{\$}				-	2 [#]		

B.Sc. (Information Technology) (2018-2021) CBCSSyllabus**PART I AND IISUBJECTS****(Applicable for students admitted in June 2019 and onwards)****TITLE OF THE PAPERS, CREDITS & MARKS**

GROUP I COURSES (ONE YEAR LANGUAGE COURSES) (B.Com., B.Com. (Finance), B.B.A., B.Sc. Computer Science, B.Sc. Information Technology and B.C.A.)							
SEM	Title of the paper	S.CODE	H/W	C	I	E	T
PART I – TAMIL							
I	,f;fhyj; jkpo;	18ULTA11	6	4	25	75	100
II	rkaj; jkpo;	18ULTA21	6	4	25	75	100
TOTAL			12	8			200
PART I – ARABIC							
I	Applied Grammar and Translation – I	18ULAR11	6	4	25	75	100
II	Applied Grammar and Translation – II	18ULAR21	6	4	25	75	100
TOTAL			12	8			200
PART II – ENGLISH							
I	Prose, Poetry and Grammar-I	18ULEN11	4	2	25	75	100/2
	English for Communication	18ULEC11	2	2	25	75	100/2
II	Prose, Poetry and Grammar-II	18ULEN21	6	4	25	75	100
TOTAL			12	8			200

PART III

Part III DSC, DSE, Project and SEC								
SEM	No.	TITLE OF THE PAPER	S.CODE	H/W	C	MARKS		
						I	E	T
I	DSC1	Programming in C	18UCIT11	4	4	25	75	100
	DSC2	Computer and its Applications	18UCIT12	4	4	25	75	100
	DSCP 1	Programming in C Practical	18UCIT1P1	2	1	20	30	50
II	DSC3	Object Oriented Programming with C++	18UCIT21	4	4	25	75	100
	DSC4	Digital Principles and System Architecture	18UCIT22	4	4	25	75	100
	DSCP 2	Object Oriented Programming with C++Practical	18UCIT2P1	2	1	20	30	50
III	DSC5	Programming in Java	18UCIT31	4	4	25	75	100
	DSC6	Data Structure	18UCIT32	4	4	25	75	100
	DSC7	Data Communications and Networking	18UCIT33	4	4	25	75	100
	DSCP 3	Programming in JavaPractical	18UCIT3P1	4	2	40	60	100
	DSE-I	VB.Net	18UEIT3A	4	4	25	75	100
		Micro Processor	18UEIT3B					
DSEP-I	VB.Net Practical	18UEIT3PA	2	1	20	30	50	
	Micro Processor Practical	18UEIT3PB						
IV	DSC8	RDBMS with Oracle	18UCIT41	4	4	25	75	100
	DSC9	Operating System	18UCIT42	4	4	25	75	100
	DSC10	Internet of things	18UCIT43	4	4	25	75	100
	DSCP 4	RDBMS with Oracle Practical	18UCIT4P1	4	2	40	60	100
	DSE-II	PYTHON programming	18UEIT4A	4	4	25	75	100
		Active Server page	18UEIT4B					
DSEP-II	PYTHONProgrammingPracticals	18UEIT4PA	2	1	20	30	50	
	Active Server PagePracticals	18UEIT4PB						
V	DSC11	Computer Graphics and Multimedia	18UCIT51	6	4	25	75	100
	DSC12	DOT Net Programming	18UCIT52	6	4	25	75	100
	DSC13	Artificial Intelligence	18UCIT53	4	4	25	75	100
	DSCP 5	Computer Graphics and Multimedia Practical	18UCIT5P1	4	2	40	60	100
	DSE- III	PHP Programming	18UEIT5A	4	4	25	75	100
		J2EE Programming	18UEIT5B					
DSEP-III	PHP ProgrammingPracticals	18UEIT5PA	4	2	40	60	100	
	J2EE Programming Practical	18UEIT5PB						
VI	DSC14	Mobile Application Development	18UCIT61	4	4	25	75	100
	DSC15	Software Engineering	18UCIT62	4	4	25	75	100
	DSC16	Project	18UCIT63	6	6	25	75	100
	DSCP 6	Mobile Application Development Practical	18UCIT6P1	4	2	40	60	100
	DSE - IV	Data Mining	18UEIT6A	4	4	25	75	100
		Virtual Reality	18UEIT6B					
DSEP-IV	Data Mining Practical	18UEIT6PA	4	2	40	60	100	
	Virtual Reality Practical	18UEIT6PB						
TOTAL				118	98			2800

**DEPARTMENT OF INFORMATION TECHNOLOGY
CBCS SYLLABUS**

PART III - ALLIED I & II - COMPUTER APPLICATIONS								
SEM	P	TITLE OF THE PAPER	S.CODE	H/W	C	MARKS		
						I	E	T
I	AI-1	Office Tools	18UAIT11	4	3	25	75	100
	AI-P1	Office Tools Practicals	18UAIT1P1	2	1	20	30	50
II	AI-2	Web Designing Tools	18UAIT21	4	3	25	75	100
	AI-P2	Web Designing Tools Practicals	18UAIT2P1	2	1	20	30	50
III	AII-3	Desktop Publishing	18UAIT31	4	3	25	75	100
	AII-P1	Desktop Publishing Practicals	18UAIT3P1	2	1	20	30	50
IV	AII-4	Unix and Shell Programming	18UAIT41	4	3	25	75	100
	AII-P2	Unix and Shell Programming Practicals	18UAIT4P1	2	1	20	30	50
TOTAL				24	16			600

PART IV -NON-MAJOR COURSE (FOR OTHER MAJOR STUDENTS)

SEM	P	TITLE OF THE PAPER	S.CODE	H/W	C	MARKS		
						I	E	T
III	NME-I	Photo Editing and Animation	18UNIT31	2	2	25	75	100
IV	NME-II	Document Tools	18UNIT41	2	2	25	75	100
TOTAL				4	4			200

Part IV - SEC/SBC

V	SEC-I	Internet Security	18USIT51	2	2	25	75	100
VI	SEC-II	Java Script	18USIT61	2	2	25	75	100
VI	SBC	Personality Development	18USPD62	2	2	25	75	100
TOTAL				6	6			300

**PART IV - EVS & VALUE EDUCATION
(FOR ALL MAJOR STUDENTS)**

I	EVS	Environmental Studies	18UENS11	2	2	25	75	100
II	VE	Value Education - I	18USVE2A	2	2	25	75	100
		Value Education - II	18USVE2B					
TOTAL				4	4			200

PART - V - Extension Activities

SEM	Extension Activities (Choose any one)	S.CODE	H/W	C	MARKS		
					I	E	T
I to IV	NCC	18UEXNCC		1			100
	NSS	18UEXNSS					
	Physical Education	18UEXPHE					
	Red Ribbon Club	18UEXRRC					
	Youth Red Cross	18UEXYRC					
	Youth Welfare	18UEXYWL					
	Yoga	18UEXYOG					
III-IV	Sadakath Outreach Programme (SOP)	18UEXSOP		1*			
Total			-	1+1*			100

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PART - 1 TAMIL			
TA - 1	Þ,è£ôî<		18ULTA11
Hrs/Week : 6	Hrs/Sem : 90	Hrs/Unit : 18	Credits : 4

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 àêj-ù & 600 002.

ப-ரீòì÷fèœ

1. www.tamilvu.org
2. www.azhiyasudargal.blogspot.in
3. www.neelamegam.blogspot.in
4. www.jeyamohan.in
5. www.sramakrishnan.com

SEMESTER - I			
AR-1	APPLIED GRAMMAR AND TRANSLATION-I		18ULAR11
Hrs/ Week: 6	Hrs/ Sem: 90	Hrs/ Unit: 18	Credits: 4

Objectives: To enable the students to learn Alphabets, Pronunciation, Basic Grammar, Reading, Writing of Arabic Language

UNIT I:- Lessons 1 to 4 (Text Book – 1)

من الدرس الأول إلى الدرس الرابع

UNIT II:- Lessons 5 to 8 (Text Book – 1)

من الدرس الخامس إلى الدرس الثامن

UNIT III:- Grammar Portions (Text Book – 2)

- 1) Words and the types of words (أجزاء الكلام)
- 2) Nominal Sentence (الجملة الاسمية)
- 3) Adjective and Noun-qualified (الصفة والموصوف)
- 4) Subject and Predicate
- 5) Masculine and Feminine (المذكر والمؤنث)
- 6) Interrogatives (أدوات الاستفهام)
- 7) Singular, Dual and Feminie (المفرد والتثنية والجمع)
- 8) Possessiveness (المضاف والمضاف إليه)
- 9) Detached Pronouns (الضمائر المنفصلة)
- 10) Prepositions (حروف الجر)
- 11) Demonstrative pronouns (أسماء الإشارة)
- 12) Relative pronouns (الأسماء الموصولة)

UNIT IV:- Lessons 9 to 12 (Text Book – 1)

من الدرس التاسع إلى الدرس الثاني عشر

UNIT V:- Lessons 13 to 16 (Text Book – 1)

من الدرس الثالث عشر إلى الدرس السادس عشر

TEXT BOOKS

1. DuroosulLughatilArabiyaPart – I Lessons 1 to 16 only by Dr.V. Abdur Rahim. Available at: Islamic foundation Trust, 78 Perambur High Road, Perambur, Chennai- 600 012.
2. Arabic for Beginners (selected topics only), Dr. Syed Ali (Former HOD of Arabic, The New College, Royappettach, (Chennai) (International Edition 2001) (UBS Publishers & Distributors Ltd) 5, Ansari Road New Delhi - 110 002.

I SEMESTER Part – II English			
EN I A	Prose, Poetry and Grammar - I		18ULEN11
Hrs/ Week: 4	Hrs/ Sem: 60	Hrs/ Unit: 12	Credits:2

Objectives:

- To answer comprehensive questions on passages of moderate level of difficulty.
- To write a critical appreciation of the prescribed poems.
- To write grammatically.

UNIT I PROSE

1. Education Provides a Solid Foundation - A.P. J. Abdul Kalam
2. Love Story - Maneka Gandhi

UNIT II PROSE

3. Speech on Indian Independence - Jawaharlal Nehru
4. Film-Making - Satyajit Ray

UNIT III POETRY

1. In the Bazaars of Hyderabad - Sarojini Naidu
2. Middle Age - Kamala Das

UNIT IV GRAMMAR

1. Parts of Speech: Verb
2. Tenses

UNIT V COMMUNICATION SKILLS

1. Unseen Passages
2. Letter Writing: Personal and Business Letters
3. Curriculum Vitae (CV)

TEXTBOOK:

Kulat L. Ambadas, Dr. Joshi, Sandeep. et. al. (ed). *Blooming Buds*. Hyderabad: Orient BlackSwan, 2017.

I SEMESTER			
EN I B	ENGLISH FOR COMMUNICATION		18ULEC11
Hrs/ Week: 2	Hrs/ Sem: 30	Hrs/ Unit: 6	Credits:2

Objectives:

- To teach students basic Grammatical categories.
- To teach students the four skills viz. Listening, Speaking, Reading and Writing and to impart language skills through tasks.
- To inculcate in students the skills necessary for social and academic circumstances.

UNIT I

Parts of Speech (Pages 5 to 17)

UNIT II

Listening and Speaking (Pages 22 to 34) and (56 to 59)

UNIT III

Reading (Pages 35 to 45)

UNIT IV

Writing - I

Punctuation and Kinds of Sentences (Pages 46 to 55)

UNIT V

Writing - II

Filling in Forms & Wrap-up (Pages 60 to 78)

TEXTBOOK:

Board of Editors. *Content and Language Integrated Learning to Enhance Communication Skills. Semester I Module 1.* Chennai: Tamil Nadu State Council for Higher Education, 2017.

PART III			
I SEMESTER			
DSC-1	PROGRAMMING IN C		18UCIT11
Hrs / Week : 4	Hrs / Sem : 60	Hrs / Unit : 12	Credits : 4

Objective:

- The course aims to train the student to the basic concepts of the C programming language.
- Students will be able to develop logics which will help them to create programs, applications in C. Also by learning the basic programming hypotheses they can easily switch over to any other language in future.

UNIT I

Overview of C Language History Of C- C Fundamental : Constants-Variable- Data Types - Character Set – C Tokens – Identifiers - Keywords - Data Types - Operators & Expressions - Managing Input & Output Operations.

UNIT II

Decision Making & Branching: Introduction – IF statement - IF-ELSE- Nesting of IF ELSE – ELSE IF LADDER – Switch- Conditional Operator – GOTO Statement

Decision Making & Looping: Introduction – WHILE Statement – DO – FOR – Jumps In Loops

UNIT III

Arrays: Introduction – One Dimensional Arrays- Declaration-Initialization-Two Dimensional Arrays -Initialization – Multi Dimensional Arrays.-**Functions** : Introduction – Need for User Defined Functions – A Multi Function Program – Elements of User Defined Functions – Definitions of Functions – Category of Functions.

UNIT IV

Structures & Unions : Introduction – Defining a structures – Declaring Structure variables – Accessing Structure Members – Structure Initialization – Unions - **Pointers** : Introduction – Understanding Pointers – Accessing address of the variable – Declaring Pointer Variable - Initialization of pointer Variables – Pointers & Arrays.

UNIT V

File Management in C: Introduction - Defining & Opening a File – Closing a File – Input / Output Operations & files– Random Access to File – Command Line arguments.

TEXT BOOK

“Programming IN ANSI C” by E Balagurusamy, 4th Edition, 2007, Mc Graw Hill Publications

REFERENCE BOOK

“Programming With C” by C Ravichandran, 1st Edition, 2006, New Age International (P) Limited Publishers

I SEMESTER			
DSC-2	COMPUTER AND ITS APPLICATIONS		18UCIT12
Hrs / Week : 4	Hrs / Sem : 60	Hrs / Unit : 12	Credits : 4

Objective

- To learn the basics and working principle of computer system
- To understand the various applications of computer system especially in the area of networking

UNIT I

Computers an Overview: Introduction to computers – Five Generations of modern computers- Classification of Digital computer Systems.- **Inside the computer:** Anatomy of digital computer – Computer Architecture.

UNIT II

Number system & Boolean Algebra: Number system – Boolean algebra and logic circuits.
Memory: Memory units – Auxiliary Storage Devices Primary.

UNIT III

Input / Output: Input devices - Output Devices – **Computer Software & Software Development:** Introduction to computer software - Operating systems - Programming languages.

UNIT IV

Data processing and Networking: Data processing – Computer networks – Distributed data processing. **Telecommunications:** Introduction to Telecommunications. **Security:** Introduction to computer security – Cryptography - Computer Viruses, Bombs and worms.

UNIT V

Internet and Intranet: Internet and world wide web – Introduction to Intranets. **Multimedia and virtual reality:** Introduction to Multimedia - Multimedia tools - Introduction to virtual reality.

TEXT BOOK :

“Introduction to Computers” by Alexis Leon and Mathews Leon, 1st Edition, 1999, VIKAS publishing house Pvt Ltd.

REFERENCE BOOK:

“Computer Fundamentals and Applications” by Ashok Arora, 1st Edition, 2015, VIKAS publishing house Pvt Ltd.

I SEMESTER		
DSCP-I	PROGRAMMING IN C PRACTICALS	18UCIT1P1
Hrs / Week: 2	Hrs / Sem : 30	Credits : 1

Objective:

- The **course** aims to provide exposure to problem-solving through **programming**.
 - Understanding the basic concepts of C programming
1. Program using If statement.
 2. Program using while & do – while statement.
 3. Program using switch statement.
 4. Program using for statement.
 5. Program using one dimensional array.
 6. Program using two dimensional arrays.
 7. Program using Functions.
 8. Programs using Recursions.
 9. Program using strings.
 10. Program using Structure.
 11. Program using file concepts.

I SEMESTER			
AI-1	OFFICE TOOLS		18UAIT11
Hrs / Week: 4	Hrs / Sem : 60	Hrs / Unit : 12	Credits : 3

Objective:

- The course introduces the knowledge on the basic concepts of computer applications in word processing program (Word), a spreadsheet (Excel), a presentation program (PowerPoint) and Database (Access).

UNIT I

Documentation Using Word :Introduction to Office Automation, Creating & Editing Document, Formatting Document, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark.

UNIT II

Advance concepts in Word :Advance Features of MS-Word [Mail Merge, Macros], Tables, File Management, Printing, Styles, linking and embedding object, Template.

UNIT III

Electronic Spread Sheet using Excel:Introduction to MS-Excel, Creating & Editing Worksheet, Formatting and Essential Operations, Formulas and Functions, Charts, **Advance features of MS-Excel:** Pivot table & Pivot Chart, Linking and Consolidation, Database Management using Excel- Sorting, Filtering, Table, Validation, Goal Seek, and Scenario, Macros

UNIT IV

Presentation using PowerPoint:Presentations, Creating, Manipulating & Enhancing Slides, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect.

UNIT V

Database concepts using ACCESS: Introduction to Databases-Defining a Database-Understanding RDBMS- Objects of a Relational Database- Macros- Functions of a DBMS-Starting Microsoft Access- Creating Tables- Understanding Database-Creating Database - Creating a table -Working a Tables- Saving the Table-Defining Primary Key-Closing the Table –Closing the Database Window and Quitting Access

TEXT BOOK :

Microsoft Office – Complete Reference – BPB Publication

REFERENCE BOOK :

Learn Microsoft Office – Russell A. Stultz – BPB Publication

I SEMESTER		
AI-P1	OFFICE TOOLS PRACTICALS	18UAIT1P1
Hrs / Week: 2	Hrs / Sem : 30	Credits : 1

Objective

- The primary objective of Office Tools is to enable you, the user, to create and edit documents.
- The students will be familiarized with the concepts of document creation, Spreadsheet Calculation, Presentation software and database concepts.

WORD 2007

1. Typing letters and editing and printing.
2. Using Spell Check and Thesaurus.
3. Designing a cover page with word art.
4. Using Header, Footer, Bookmark, Foot notes.
5. Mail merge a letter to an address file.
6. Typing 5 pages of Mathematical equations and symbols.

EXCEL 2007

1. Entering spread sheets with formula
2. Entering spreadsheet and doing statistical calculations
3. Printing Of Graphs and charts for the given data.
4. Creating and using macros.

POWER POINT 2007

1. Creation of presentation with different styles on a given topic of current interest.
2. Preparing Presentation for a topic in the study of all course.

ACCESS 2007

1. Create an employee database
2. Create student database and set a primary key
3. Create a salary list preparation
4. Create a report
5. Create mailing labels

I SEMESTER			
EVS	ENVIRONMENTAL STUDIES		18UENS11
Hrs / Week: 2	Hrs / Sem : 30	Hrs / Unit : 6	Credits : 2

UNIT - I: Nature of Environmental Studies

Goals, Objectives and guiding principles of environmental studies. Towards sustainable development - Environmental segments- Atmosphere, Hydrosphere, Lithosphere, Biosphere - definition. Pollution episodes -- Hiroshima - Nagasaki, - Bhopal gas Tragedy, Fukushima. Stone leprosy in Taj Mahal

UNIT - II: Natural Resources

Renewable and Non Renewable resources - classification.

- Forest resources: Use and over - exploitation, Aforestation and deforestation.
- Water resources: Use and over - utilization and conservation of surface and ground water - Rain harvesting.
- Marine Resources: Fisheries and Coral reefs.
- Mineral resources: Use and exploitation - environmental impacts of extracting and using mineral resources.
- Food resources: Effects of modern agriculture fertilizers - pesticide problem.
- Energy resources: Growing energy needs - use of alternate energy source - Solar cells & wind mills.
- Land resources: Land degradation

UNIT - III: Ecosystem

- Concept of Eco-systems - Tropic level, food chains, food web and Ecological pyramids, Living conditions on other planets (Brief account).

Types, structure & Functions of the following:

- a) Aquatic ecosystem
- b) Grassland ecosystem
- c) Forest ecosystem
- d) Desert ecosystem

UNIT - IV: Biodiversity & Its Conservation

Introduction - Definition: ecosystem diversity, species diversity and Genetic diversity. Hot spots of biodiversity - Western Ghats, Eastern Himalayas and Gulf of Mannar. Threats to biodiversity - Habitat Loss, Poaching of wildlife and Man - wildlife conflicts.

Conservation of biodiversity: *In-situ* and *Ex-situ*.

UNIT - V: Environmental Pollution

Sources, effects, prevention and control measures of the following.

- a) Air pollution: Composition of clean air, Global warming, Ozone layer depletion.
- b) Water Pollution: Fresh water and Marine water.
- c) Noise Pollution
- d) Soil pollution

Bio degradable and Non Bio degradable wastes; Environmental Acts

- Air (prevention & Control of Pollution) Act.
- Environmental Protection Act
- Water (Prevention & Control of pollution) Act
- Environmental movements - Green peace and Chipco movement.
- Role of Central & State pollution Control Boards.

REFERENCE BOOKS:

1. Basic of Environmental Science. Vijayalakhmi, Murugesan and Sukumaran - Manonmaniam Sundaranar University publications.
2. Environmental Studies. John de Brito, Victor, Narayanan and Patric Raja - published by St. Xavier's College, Palayamkottai, 2008.
3. Environmental Science and Biotechnology. A.G. Murugesan and C. Raja Kumar - MJP Publishers.
4. Fundamental of Environmental pollution - Krishnan Kannan - Chand & Company Ltd., New Delhi, 1997.
5. Environmental Studies. S. Muthiah, Ramalakshmi publications, Tirunelveli.
6. Environmental Studies. V.M. Selvaraj, Bavani Publications, Tirunelveli.

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1. www.noolulagam.com
2. www.tamilauthors.com
3. www.tnpsc.gov.in
4. www.tnpscexams.in
5. www.tamilvu.org

SEMESTER - II			
AR-2	APPLIED GRAMMAR AND TRANSLATION-II	18ULAR21	
Hrs/ Week: 6	Hrs/ Sem: 90	Hrs/ Unit: 18	Credits: 4

Objectives: To make the students to develop the skill of basic Arabic Grammar and Translation skills from Arabic to English vice-versa.

Unit I:-Lessons 1 to 3 (Text Book – 1)

من الدرس الأول إلى الدرس الثالث

Unit II:-Lessons 4 to 6 (Text Book – 1)

من الدرس الرابع إلى الدرس السادس

Unit III :- Grammar Portions (Text Book – 2)

- 1) Inna and Its sisters (إن وأخواتها)
- 2) Elative (اسم التفضيل)
- 3) Perfect Tense (الفعل المضارع)
- 4) Imperfect Tense (الفعل الماضي)
- 5) Doer and Object (الفاعل والمفعول)
- 6) Kaana and Its sisters (كان وأخواتها)
- 7) Classification of Verb into Sound and weak verb (تقسيم الفعل إلى صحيح ومعتل)
- 8) Transitive and Intransitive verb (الفعل اللازم والمتعدي)
- 9) Verbal Noun (المصدر)

Unit IV:-Lessons 7 to 9 (Text Book – 1)

من الدرس السابع إلى الدرس التاسع

Unit V:-Lessons 10 to 12 (Text Book – 1)

من الدرس العاشر إلى الدرس الثاني عشر

TEXT BOOKS

1. DuroosulLughatil Arabiya Part – II Lessons 1 to 12 only by Dr.V.Abdur Rahim. Available at: Islamic foundation Trust, 78 Perambur High Road, Perambur, Chennai- 600 012.
2. Arabic Tutor Part-I,II&III, By: Moulana Ebrahim Muhammad Karachi-Darullshaat.

II SEMESTER			
EN2	PART II ENGLISH Prose, Poetry and Grammar - II		18ULEN21
Hrs/ Week: 6	Hrs/ Sem: 90	Hrs/ Unit: 18	Credits: 4

Objectives:

- To answer comprehensive questions on a passage of moderate level of difficulty.
- To write a critical appreciation of the prescribed poems and write sentences in English grammatically.

UNIT I PROSE

- | | |
|--------------|--------------------|
| 1. Appro JRD | - Sudha Murthy |
| 2. Packing | - Jerome K. Jerome |

UNIT II PROSE

- | | |
|----------------------------------|-------------------|
| 3. How I Became a Public Speaker | - G. B. Shaw |
| 4. Values in Life | - Rudyard Kipling |

UNIT III POETRY

- | | |
|------------------------|------------------|
| 1. Money-Madness | - D. H. Lawrence |
| 2. No Men are Foreign | - James Kirkup |
| 3. On Another's Sorrow | - William Blake |

UNIT IV GRAMMAR

1. Subject-Verb Agreement
2. Verbs: Forms of 'to be', 'have', 'do'; modal auxiliaries

UNIT V COMMUNICATION SKILLS

1. Story Building
2. e-Communication: Fax; e-mail
3. Notices, Agendas and Minutes

TEXTBOOK:

Kulat L Ambadas, Dr. Joshi, Sandeep. et. al. (ed). *Blooming Buds*. Hyderabad: Orient BlackSwan, 2017.

II SEMESTER			
DSC-3	OBJECT ORIENTED PROGRAMMING WITH C++		18UCIT21
Hrs / Week: 4	Hrs / Sem : 60	Hrs / Unit : 12	Credits : 4

Objective:

- To learn the fundamental programming concepts and methodologies which are essential to building C++ programs.
- Develop an in-depth understanding of functional, logic, and object-oriented programming paradigms

UNIT-I

Basic Concept of OOPS: Basic concept of oops-Introduction- c structures revisited - specifying a class- defining member functions - Nesting of member functions - Private member functions - Array within a class - Memory allocation for objects - Array of objects - Object as function arguments - returning objects

UNIT-II

Functions: Introduction-The Main function-Function prototyping-Static member functions- Friendly functions -Inline Function- Static data members - Function overloading.
Constructor: Introduction-Parameterized Constructor-Constructor with default arguments- Copy constructor-Dynamic Constructor-**Destructors.**

UNIT-III

Operator Overloading: Introduction-Defining Operator Overloading-Overloading unary operators-Overloading binary Operators-Rules for Overloading Operators. **Templates:** Introduction-Class Templates-Class Templates with Multiple parameters-Function Templates-Function template with Multiple parameters-Member function template.

UNIT-IV

Exception Handling: Introduction-Basic of Exception Handling-Exception Handling mechanism-Throwing Mechanism-Catching Mechanism. **Inheritance:** Introduction-Defining derived classes-Single Inheritance-Multilevel Inheritance-Multiple Inheritance-Hierarchical Inheritance-Hybrid Inheritance.

UNIT-V

Working with Files: Introduction-Classes for File stream Operations- Opening and Closing File-Detecting end-of-file-Updating a file: Random Access-Error handling during File Operations-Command line arguments-**New Features of ANSI C++.**

TEXT BOOKS:

“ObjectOriented Programming with C++” by E Balagurusamy, 5^h Edition, 2011, Mc Graw Hill Publications.

REFERENCE BOOKS:

“Object Oriented programming in C++” by Robert Lafore, 4th Edition, 2008, Pearson Publications.

II SEMESTER			
DSC-4	DIGITAL PRINCIPLES AND SYSTEM ARCHITECTURE		18UCIT22
Hrs / Week: 4	Hrs / Sem : 60	Hrs / Unit : 12	Credits : 4

Objectives

- To analyze logic processes and implement logical operations using combinational logic circuits
- To know about the operational, performance, and security of an information system

UNIT I

Boolean Algebra: Introduction – Basic Definitions – Axiomatic Definition of Boolean algebra – Basic Theorems and properties of Boolean Algebra – Boolean Functions - *Logic Gates:* Canonical and Standard Forms – other Logic Operations – Digital Logic Gates – integrated Circuits.

UNIT II

Gate –Level Minimization: Introduction – The Map Method –Four – Variable Map-Five – Variable Map – Product –of-Sums Simplification –Don't Care Conditions. *Combinational Logic:* Binary Adder – Subtractor – Decimal Adder – Binary Multiplier – Magnitude Comparator - Decoders – Encoders – Multiplexers-.

UNIT III

Synchronous Sequential Logic: Introduction – Sequential Circuits - Storage Elements: Latches – Storage Elements: Flip-Flops *Registers and Counters:* Registers – shift Registers – Ripple Counters – Synchronous Counters- Others Counters.

UNIT IV

Input Output Organization : Modes of Transfer- Priority Interrupt – Direct Memory Access – Input –Output Processor – Serial Communication

UNIT V

Memory Organization: Main Memory - Memory Hierarchy-Auxiliary Memory – Associative Memory – Cache Memory – Virtual Memory.

Text Books:

1. “Digital Design: With An Introduction to the Verilog HDL by M. Morris Mano, Michael D. Ciletti, 5th Edition, 2013, Pearson Publication.
2. “Computer System Architecture” by M Morris Mano, 3rd Edition, 1993, PrienticeHall of India Pvt Ltd.

II SEMESTER		
DSCP-II	OBJECT ORIENTED PROGRAMMINGWITHC++PRACTICALS	18UCIT2P1
Hrs / Week: 2	Hrs / Sem : 30	Credits : 1

Objective:

- To familiarize the students with language environment.
 - To implement various concepts related to language.
1. Program to demonstrate all manipulators in C++.
 2. Swap 2 Values
 3. Evaluate an expression using macros (Macrosinic& inline function C++)
 4. Compare any 2 elementary data types in C++ using function overloading.
 5. Find m power n values using default arguments.
 6. Program to perform simple banking operation.
 7. Write a program using operator overloading .
 8. Programs using multiple inheritance, hybrid inheritance, hierarchical inheritance, multilevel inheritance.
 9. Program using polymorphism and virtual functions.
 10. Create and copy a text file to another.

II SEMESTER			
AI-2	WEB DESIGNING TOOLS		18UAIT21
Hrs / Week: 4	Hrs / Sem : 60	Hrs / Unit : 12	Credits : 3

Objective:

- Describe the function of Hypertext Markup Language (HTML) in Web communications.
- Describe the function of Cascading Style Sheets (CSS) in Web communications and describe the relationship between CSS and HTML
- It aims to learn basic concepts related to web development using Ruby

UNIT I

Introduction to HTML-History of HTML, HTML Document, Anchor Tag, Hyper Links. Head and body sections-Header section-Title, Prologue, Links,Colorful Web Page,Comment Lines. Designing body section-Heading printing, Aligning the headings,Horizontal rule, Paragraph, Tab Settings.

UNIT II

Lists, Unordered Lists, Ordered Lists, Table Handling. Frames: Frameset definition-Nested Framesets-Forms-Action Attribute-Drop Down list-Check Boxes-Radio Buttons-Text Field-Text Area-Password-Hidden-Submit and Reset Buttons.

UNIT III

Introduction – Structure of CSS – Selector: Class Selector - Id selector – Font Properties - Background properties - Text Properties - Margin properties – Padding properties – Border properties – List.

UNIT IV

Introduction-The Structure and Execution of Ruby Programs: Lexical Structure - Syntactic Structure -File Structure - Program Encoding - Program Execution- Datatypes and Objects: Numbers – Text - Arrays - Objects- Expressions and Operators: Literals and Keyword Literals - Variable References - Constant References - Method Invocations - Assignments – Operators-Statements and Control Structures: Conditionals- Loops -Iterators.

UNIT V

Exceptions and Exception Handling- Methods-Classes and Modules :Defining a Simple Class - Method Visibility: Public, Protected, Private – Subclassing and Inheritance - Object Creation and Initialization- Modules.

TEXT BOOKS

1. “World Wide Web Design with HTML” by C.Xavier,2007, Tata McGraw-Hill Publishing.
2. “Cascading Style Sheet 2.0 Programmers Reference by Erica.Meyer, 1st Edition, 2001, McGraw-Hill Publications
3. “The Ruby Programming Language” by David Flanagan and Yukihiro Matsumoto, 1st Edition, 2008, O’REILLY Publications.

II SEMESTER		
AI-2P	WEB DESIGNING TOOLS PRACTICALS	18UAIT2P1
Hrs / Week: 2	Hrs / Sem : 30	Credits : 1

Objective:

- To design a dynamic webpage using HTML/CSS
 - To learn about object-oriented concepts in ruby
1. Design a simple web page using HTML.
 2. Design a web page in HTML using list.
 3. Design a web page in HTML using tables.
 4. Design a web page in HTML using forms
 5. Design a web page using CSS Background and Text Properties
 6. Design a web page using CSS List
 7. Write a program using operators in Ruby.
 8. Write a program using else Ifstatement in Ruby.
 9. Write a program using while statement in Ruby.
 10. Write a program using function in Ruby.

II SEMESTER			
VE1	VALUE EDUCATION – I		18USVE2A
Hrs/ Week: 2	Hrs/ Sem: 30	Hrs/ Unit: 6	Credit: 2

Objectives:

1. To inculcate moral values in the minds of students.
2. To teach ethical practices to be adopted by students in their life.
3. To make students honest and upright in their life.

UNIT I

Islam – Meaning – Importance – A complete Religion – The religion accepted by God – Five Pillars of Islam – Kalima – Prayers – Fasting – Zakat – Haj.

Iman – Monotheism – Angels – Books – Prophets – Dooms Day – Life after death – Heaven and Hell.

UNIT II

Quran – The Book of Allah – Wahi – Revelation to Prophet Muhammad(sal) – Compilation – Preservance – Structure – Content – Purpose – Source of Islamic Law– Sura Fathiha, Kafirun, Iqlas, Falakh and Nas.

UNIT III

Hadith – Siha Sitha – Buhari – Muslim – Tirmithi – Abu Dawood – Nasai – Ibn Maja – Collection of Hadith – Meaning of 40 Hadith.

UNIT IV

Life History of Prophet Muhammad (sal) – Aiamul Jahiliya – Prophet’s Childhood and Marriage – Prophethood – Life at Mecca – Life at Medinah – Farewell Address – Seal of Prophethood.

UNIT V

Good character – Etiquettes – Halal and Haram – Duties towards Allah – Duties towards fellow beings – Masnoon Duas.

REFERENCE BOOKS:

1. V.A. Moahmed Ashrof – Islamic Dimensions – Reflection and Review on Quranic Themes.
2. The Presidency of Islamic Researchers – Revised & Edited – The Holy Quran.
3. M. Manzoor Nomani – Islamic Faith & Practice.
4. Abdul Hasan Ali Nadvi – Muhammad Rasulullah.
5. K. Ali – A Study of Islamic History.
6. Abdul Rahuman Abdullah – Islamic Dress code for Women.
7. Dr. Munir Ahamed Mughal – Code For Believers.
8. Abdul Malik Mujahid – Gems and Jewels.

II SEMESTER			
VE2	VALUE EDUCATION - II		18USVE2B
Hrs/ Week: 2	Hrs/ Sem: 30	Hrs/ Unit: 6	Credit: 2

UNIT I

Individual Morality – Objective of Moral life – Living in accordance with the code of Morality – the goodness of Morality – Morality and *Thirukural* – The need for faith.

UNIT II

Adherence to higher code of Morality – Fear of God – Good Moral Values – Duty to Parents – Teacher, respecting elders – Moral Etiquettes – Right-minded Principle – High Principles for Proper conduct.

UNIT III

Inculcating good attitudes – Open mindedness – Morale – analysing the pros and cons of good and bad – Service to others – Mind Power, tolerance, respecting others, showing love to others, patience – tranquility – Modesty, kindness and forgiveness.

UNIT IV

Quotations and moral Stories expressing Good characters of Great personalities – Life History of Great people: Mahatma Gandhi, Abraham Lincoln, Dr. A.P.J. Abdul Kalam.

UNIT V

Truth, the importance of uprightness, integrity, friendship – Health awareness on Alcohol and drug abuse – inculcating reading habit – reading good books – Hygiene – Dowry – Corruption.

TEXTBOOK:

Publication of Sadakathullah Appa College.

III SEMESTER			
DSC-5	PROGRAMMING IN JAVA		18UCIT31
Hrs / Week: 4	Hrs / Sem : 60	Hrs / Unit : 12	Credits : 4

Objective:

- To understand object oriented programming concepts, and apply them in solving Problems.
- To design and program stand-alone Java applications.
- Identify and describe common abstract user interface components to design GUI in Java using Applet & AWT along with response to events

UNIT I

Overview of Java Language: Basic concept of Object oriented programming-Introduction to java- Simple java program- java program structure-Java Development Kit-Java Virtual Machine-Command line arguments. **Constant, variables, Data types:** Constants-Symbolic constant-Data types-Variables-Declaration of variables-Scope of variables. **Operators & Expression:** Operators-Precedence of Operators-Expression-Evaluation of Expression

UNIT II

Decision Making & Branching: Introduction-Decision making with IF Statement- Simple IF Statement-IF...ELSE Statement-Nesting of IF...ELSE Statement-ELSE If LADDER-Switch Statement-?: Operator. **Decision Making & Loops:** While Statement-Do Statements-For Statements-Jumps in Loops. **Classes, Objects and Methods:** Introduction-Defining a class-Creating Objects - Method Declaration-Accessing Class Members.

UNIT III

Constructor: Introduction-Default Constructor-Parameterized Constructor. **Inheritance:** Introduction-Extending a Class-overriding methods. **Array, String & Vectors:** Introduction-One dimensional arrays-creating an array-Two dimensional array-String-vectors-Wrapper classes-Enumerated types. **Interface:** Introduction-Defining Interface-Extending Interface-Implementing Interface-Accessing Interface variables.

UNIT IV

Packages: Introduction-Java API Packages-Creating Packages-Accessing a Packages-Using a Packages-Adding a Class to a packages. **Multithreaded Programming:** Introduction-Creating Threads-Extending the Thread class-Life cycle of a thread-Using Thread Methods-Thread Exception-Thread Priority. **Managing Errors & Exception:** Introduction-Types of Errors-Exception-Multiple catch statements-Using Finally Statements-Throwing Our Own Exceptions-Using Exception for Debugging.

UNIT V

Applet Programming: Introduction-Applet Life cycle-Creating an executable Applet-Designing web page-Applet tag-Adding Applet to HTML Files-Running the Applet. **Graphics Programming:** Introduction- The Graphics class-Lines, Rectangles, Circles, Ellipse, arcs, polygons-Line graphs- Drawing Bar charts-Introducing to AWT Package and Swing. **Managing I/O Files:** Introduction-Concept of Stream-Types of Stream classes-Other useful I/O classes-Creation of files- Reading/ Writing Characters and bytes-Random Access Files.

TEXT BOOK

“Programming with Java a primer” by E Balaguruswamy,4th Edition,2010, Mc.Graw Hill Publications

REFERENCE BOOKS

“Programming with Java” by C Muthu, 2nd Edition, 2008, Mc Graw Hill Buplications.

III SEMESTER			
DSC-6	DATA STRUCTURES		18UCIT32
Hrs / Week: 4	Hrs / Sem : 60	Hrs / Unit : 12	Credits : 4

Objective

- To impart the basic concepts of data structures and algorithms
- To understand concepts about searching and sorting techniques
- To Understand basic concepts about stacks,queues,lists,trees and graphs

UNIT I

Introduction : Basic Concepts - Pseudo code - The Abstract Data Type - Model for an Abstract Data Type - ADT Implementations - Algorithm Efficiency - Recursion - Designing Recursive Algorithms

UNIT II

Linear Lists: Stacks - Basic Stack Operations - Stack Linked List - Stack Applications - Queues - Queue Operations - Queue Linked List Design - Queue Applications General Linear Lists - Basic Operations – Implementation – Application - Complex Implementations.

UNIT III

Non-Linear Lists: Introduction to Trees - Basic Tree Concepts - Binary Trees – General Trees - Binary Search Trees - Basic Concepts - BST Operations – BST Applications - AVL Search Trees - AVL Tree Basic Concepts - AVL Tree Implementations - Applications.

UNIT IV

Heaps: Basic Concepts - Heap Implementation - Heap Applications - Multiway Trees - M-way Search Trees - B-trees -Simplified B-tree - B-tree Variations - Lexical Search Tree - Graphs- Basic Concepts – Operations – Networks.

UNIT V

Sorting and Searching: Sorting - Sort Concepts: Selection Sorts - Insertion Sorts - Exchange Sorts - External Sorts – Searching - List Searches - Search Implementations - **Hashed List Searches - Collision Resolution**

TEXT BOOK

“Data Structures A Pseudocode Approach with C” by Richard F. Gilberg and Behrouz A. Forouzan, 2nd Edition, 2005, Thomson Learning, Inc.

REFERENCE BOOKS

1. "Data Structures Using C And C++" by Y. Langsam, M. Augenstein And A. M. Tenenbaum, 2nd Edition, 2006, Prentice - Hall Of India Pvt. Ltd.
2. “Data Structures Through C” by YashavanthKanetkar, 2nd Edition, 2003, BPB Publications..

III SEMESTER			
DSC-7	DATA COMMUNICATIONS AND NETWORKING		18UCIT33
Hrs / Week: 4	Hrs / Sem : 60	Hrs / Unit : 12	Credits : 4

Objective

- To gain Knowledge of Basics in Networking
- The Major Concepts in networks such as OSI reference model, TCP/IP, Routing Addressing and internetwork Technologies.

UNIT I

Overview *Introduction:* Data communication – Networks – Protocols and Standards – *Network Models:* Layered Tasks – OSI Model - Layers in the OSI model – TCP/IP protocols suit – Addressing – **Physical Layer and Media:** Analog and Digital – Periodic Analog Signal – Digital Signals – Performance

UNIT II

Transmission Media: Guided Media – Un Guided Media – *Using Telephone and Cable network for Data Transmission:* Telephone Network - Digital Subscriber Line – Cable TV Networks – Cable TV Data Transfer - **Data Link Layer: Error Deduction and Correction: Introduction – Block Coding – Cyclic Codes-Checksum.**

UNIT III

Data Link Control: Framing – Flow and Error Control – Protocols – Noiseless Channels – Noisy Channels – *Multiple Access:* Random Access - Controlled Access – Bluetooth – *Connecting LANs, Backbone Networks and Virtual LANs:* Connecting devices – Backbone Networks – Virtual LANs.

UNIT IV

Network Layer: *Logical Addressing:* IPv4 Addresses – IPv6 Addresses – *Address Mapping, Error Reporting and Multicasting:* Address Mapping - ICMP – IGMP – *Delivery Forwarding and Routing:* Delivery – Forwarding – **Transport Layer:** Process to Process Delivery – User Datagram Protocol (UDP) – TCP – *Conjunction Control and Quality of Service:* Data Traffic – Conjunction – Conjunction Control – Quality of Service.

UNIT V

Application Layer: *Domain Name System:* Name Space – Domain Name Space – Remote Logging – Electronic Mail – File Transfer – **Security:** *Cryptography:* Introduction – Symmetric key Cryptography - Asymmetric key Cryptography – *Network Security:* Security Services – Message Confidentiality – Digital Signature – Entity Authentication – *Security in the Internet:* IP Security – Firewalls.

TEXTBOOK:

“Data Communications and Networking” by Behrouz A. Forouzan, 4th Edition, 2007, Mc Graw Hill Publications.

REFERENCE BOOK :

“Computer Networks” by Andrew S. Tanenbaum, David J. Wetherall, 5th Edition, 2011, Prentice Hall of India Pvt Ltd.

III SEMESTER		
DSCP III	PROGRAMMING IN JAVA PRACTICALS	18UCIT3P1
Hrs / Week: 4	Hrs / Sem : 60	Credits : 2

Objective

- To build software development skills using java programming
- Able to **understand** the use of Packages,Interfece,thread,Exception and Interface in java.
- To **introduce** the design of Graphical User Interface using applets

1. Program to find the sum of digits of a given number
2. Program to create String object and working with String function
3. Program to read N numbers in array and Find the largest and Smallest Numbers
4. Program using class and objects
5. Program to find area of rectangle, circle and squarer using method overloading
6. program using Multi_Level inheritance
7. Program to show how a class implements two interfaces.
8. Program to catch more than one exceptions.
9. Program to create user_defined exception.
10. Program using threads.
11. Program using Packages.
12. Program to copy a text file into another text file
13. Create an applet to draw different shapes.
14. Create an applet to move an object.
15. Create an applet to calculate simple interest

III SEMESTER			
DSE-1 A	VB.NET		18UEIT3A
Hrs / Week: 4	Hrs / Sem : 60	Hrs / Unit : 12	Credits : 4

Objective:

- This course introduces computer programming using the Visual BASIC.NET programming language with object-oriented programming principles.
- Emphasis is on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger.
- Learn to create web application and to implement the server side scripts and able to design, code, test and debug at a beginning level.

UNIT I

Introduction to VB.Net environment: The Visual Basic Integrated Development Environment , Console application and Windows application, Data types, Declaring Variables, Arrays - Declaration and Manipulation , Decision Making Statements, Looping Statements, MsgBox and InputBox Function, Handling Mouse & Keyboard Events, Forms - Adding Controls to Forms.

UNIT II

Working with Multiple Forms, Setting the Startup Form, VB.NET controls - Common controls (Text Boxes, Rich Text Boxes, Labels, Buttons, Checkboxes, Radio Buttons, Check Boxes, List Boxes, Checked List Boxes, Combo Boxes, Picture Boxes, Timers) Properties – Methods, Handling Menus.

UNIT III

Object Oriented Programming in VB.NET - Class and Objects, Properties, Methods and Events, Constructor and Destructor, Method Overloading, Inheritance, Access modifiers: Public, Private, Protected, Friend, Overriding and shadowing, Interfaces, Polymorphism- Structured and Unstructured Exception Handling

UNIT IV

Web Application in VB.NET - Introduction to Web form, Page Directives, Validation Controls, Page Redirection Concept of Web Services, Create a small Web Services

UNIT V

ADO.Net - Connections, Data Adapters, Datasets, Data Reader, Multiple Table Connection, Data Binding with controls like Text Boxes, List Boxes, Data grid etc. compu

TEXT BOOK

“Visual Basic.NET Programming Black Book” by Steven Holzner, 2001, Paralyph press

REFERENCE BOOK

“Mastering Microsoft Visual Basic 2010” by EvangelosPetroutsos, 2010, Wiley Publishing

III SEMESTER			
DSE-1B	MICROPROCESSOR		18UEIT3B
Hrs / Week: 4	Hrs / Sem : 60	Hrs / Unit : 12	Credits : 4

Objectives:

The objective of this course is to become familiar with the architecture and the instruction set of an Intel microprocessor

To familiarize the students with the programming and interfacing of microprocessors and microcontrollers.

UNIT I

Microprocessor, Microcomputers and Assembly Language: Microprocessors- Microprocessor Instruction set and Computer Languages - **Introduction to 8085 and Assembly Language Programming:** 8085 Programming Model- Instruction Classification- Instruction, data format and storage - Overview of the 8085 instruction set.

UNIT II

8085 Microprocessor Architecture: Micro process orArchitecture and its operations - The 8085 Micro processing unit[MPU] – Example of an 8085 based Microcomputers- Memory Interfacing – memory mapped I/O. - **Introduction to 8085 Instructions:** Data transfer operations-Arithmetic operations- Logic operations- Branch operations.

UNIT III

Programming Techniques with additional Instructions: Programming Techniques – Looping, Counting and Indexing-Additional Data transfer 16-Bit Arithmetic Instructions- Arithmetic operations related to Memory-Logic operations-Rotate, Compare - **Counters and Time Delays:** Counters and Time Delays-Hexadecimal counter-Modulo Ten Counter-Generating Pulse waveforms.

UNIT IV

Stack and Subroutines: Stack –Subroutine-Restart, Conditional call and Return instructions-Advanced Subroutine Concepts- Microprocessor Controlled Traffic signal system - **Interrupts:** 8085 Interrupts-Vectored Interrupts- Restart as Software Instructions

UNIT V

16-bit Microprocessors – Intel 8086/8088 – 32-bit Microprocessors Intel 80186/80286 – High-end-Performance Processors - Intel 80386/80486 – Intel Pentium – RISC.

TEXT BOOK

“Microprocessor Architecture Programming and Applications with the 8085” by Ramesh S. Gaonkar 5th Edition.

REFERENCE BOOK

“Advanced Microprocessors and Interfacing” by Badri Ram, 1st Edition, 2001, McGraw Publication.

III SEMESTER		
DSEP-1A	VB.NET PRACTICALS	18UEIT3PA
Hrs / Week: 2	Hrs / Sem : 30	Credits : 1

Objective:

- To enable the students, learn to develop the programs skills using VB.NET
 - To implement object-oriented programming concepts in VB.NET
 - To create a web application and handling database controls
1. Create a form having three radio buttons for age in year, age in days and age in months. Enter date of birth in a textbox and display appropriate result in another textbox.
 2. Create an application form
 3. Write a program to count number of times the click event occur
 4. Write a program using image lists
 5. Write a program using rich textbox control
 6. Write a program using Menus and Build In Dialogs
 7. Write a program using Exception Handling
 8. Write a program using function
 9. Write a program deploying Polymorphism using VB.NET
 10. Write a program developing Inheritance using VB.NET
 11. Create a Simple web application
 12. Create a web application using Validation Controls
 13. Write a program using Page Redirection Concept
 14. Create Student Information System.
 15. Create a program using Data Grid control

III SEMESTER		
DSEP-1B	MICROPROCESSOR PRACTICALS	18UEIT3PB
Hrs/Week: 2	Hrs/Sem: 30	Credit: 1

Objectives:

To provide strong foundation for designing real world applications using microprocessors and microcontrollers.

To provide practical hands on experience with Assembly Language Programming

- 1 Addition of two 8 digit nos.
- 2 Subtraction of two 8 digit nos.
- 3 Multiplication of two 8 digit nos.
- 4 Division of two 8 digit nos.
- 5 Sorting in Ascending order
- 6 Sorting in Descending order
- 7 Finding Maximum in the given set of numbers.
- 8 Finding Minimum in the given set of numbers.
- 9 Data Transfer
- 10 Disassemble the byte
- 11 Assemble the byte
- 12 Sum of N number
- 13 Number of occurrences of a given number
- 14 Search for a given number

III SEMESTER			
AII-1	DESKTOP PUBLISHING		18UAIT31
Hrs / Week: 4	Hrs / Sem : 60	Hrs / Unit : 12	Credits : 3

Objective:

- To learn the various design features available in the Publishing software's like Adobe PageMaker, CorelDraw, Adobe Photoshop.
- Develop an understanding of basic desktop publishing terminology

UNIT I

Introduction To DTP – Hardware Requirements Of DTP-Designing Common Media Publications. Getting Started With Pagemaker -The Page Maker Layout Window – BasicPagemaker Function: Open, New, Close, Print, Save And Save Us – Working With Text –Story Editor – Editing Text – Formatting A Text: Character Formatting, Paragraph Formatting - Style Sheets

UNIT II

Master Pages-Working With Column-Working With Graphics And Objects-Wrapping Text Around A Graphic-Group And Ungroup –Managing And Printing A Publication- Book Creation – TOC Creation. The Coreldraw Layout Window- Corel Draw Function: Open, New, Close, Print, Save And Save Us-Views-Drawing And Selecting: Changing Shape, Combine, Weld, Group

UNIT III

Working With Text: Artistic Text, Artistic Tool And Paragraph Text –Formatting Text-Text Editor-Working With Images: Bitmap And Vector Image – Page Layout And Page Background, Page Frame

UNIT IV

The Photoshop Layout Window- Photo Shop Function: Open, New, Close, Print, Save And Save Us-Working With Images And Colors-The Selection Tools-Editing Selection –Painting Tools –Drawing Tools –Editing Tools

UNIT V

Toning Tools-Eraser Tools-Layers – Creating A New Layer –Merging Layers –Linking Layers- Layer Effects-Transforming Layers-Type Tool And Type Settings- Filters

TEXT BOOK:

“Comdex Desktop Publishing Course Kit” by Vikas Gupta, 2006, Vikas Publications

REFERENCE BOOK:

1. “Mastering Page Maker6 For Windows 95” by Rebecca Bridges Altman & Rick Altman
2. “Corel Draw 8: The Official Guide” by Foster Coburn & Peter McCormick
3. “Photoshop 4 Studio Skills” by Steven Moniz.

III SEMESTER		
AII-1P	DESKTOP PUBLISHING PRACTICALS	18UAIT3P1
Hrs/Week: 2	Hrs/Sem: 30	Credit: 1

Objective:

- To create documents with different colors, logos, images using advanced designing features
- To familiar with the manipulation of images and graphic design

PAGE MAKER

1. Preparing simple document with formatting and type equations
2. Creating and Using new colors and styles (user defined)
3. Prepare document with column layout and Apply word wrap options.
4. Creating BOOK with TOC.
5. Creating index.

COREL DRAW

6. Document with print merging.
7. Designing a visiting card.
8. Draw water drop effect.
9. Design a Scenery (Natural, Sunset)
10. Design a Fish Tank with fishes using Artistic Tool.

PHOTO SHOP

11. Picture focus light effects
12. Retro Comic Book Effect
13. Realistic Water Reflection
14. Blend two picture together.
15. Designing lighting text effect

III SEMESTER			
NME-I	PHOTO EDITING AND ANIMATION		18UNIT31
Hrs/Week: 2	Hrs/Sem: 30	Hrs/Unit: 6	Credit: 2

Objective:

- To be familiar with create ,edit and manipulate the graphics with creativity
- To create interactive with animation
- To get the sound knowledge of layers, various effects and filters in photoshop
- To work effectively in their studio works

UNIT I

The Photoshop Layout Window- Open,New,Close,Print,Save And Save As-Working With Images And Colors-The Selection Tools- Editing Selection –Painting Tools-Drawing Tool-Editing Tool

UNIT II

Toning Tools-Eraser Tools- Layers- Creating A New Layer –Merging Layers –Linking Layers-Layer Effects-Transforming Layers –Type Tool And Setting-Filters

UNIT III

Introducing Flash – Panels –Tools-Timelines –Frames-Concept Of Frames-Scenes In Flash – Layers In Flash –Testing A Flash Movie-Publishing A Flash Movie

UNIT IV

Working With Color- Color Swatches Panel-Color Mixer Panel-Symbols-Creating Symbols And Instances- Creating A Button- Editing Symbols-Modifying The Instance Of A Symbol-Library

UNIT V

Animation-Working With Timeline Effects-Frame By Frame Animation-Tweening: Motion And Shape Tweening –Creating Masking Effect-Action Scripts –Programming Concept In Action Script-Movie Clips

TEXTBOOKS:

1. Comdex Desktop Publishing Course Kit By Vikas Gupta -2006 Edition
2. Flash 8 In Simple Steps, Saline Gupta And Aditygupta, Dreamtech Press

IV SEMESTER			
DSC-8	RDBMS WITH ORACLE		18UCIT41
Hrs/Week: 4	Hrs/Sem: 60	Hrs/Unit: 12	Credit: 4

Objectives

- An introduction to the design and creation of relational databases.
- Creating, Storing, retrieving, updating and displaying data using Structured Query Language (SQL) PL/SQL Concepts , Stored Procedures, Functions, Packages and Triggers .

UNIT I

Introduction : Purpose of Data base Systems – view of data – data models – data base models – data base languages – transaction management – storage management – data base administrator – data base users. Entity – relationship model; Basic concepts – design issues – mapping cardinalities – keys – ER Diagrams – Weak entity sets.

UNIT II

Relational Model: Structure of relational databases – relational Algebra – the tuple relational calculus – the domain relational calculus – extended relational Algebra operations – Modification of the database – views

UNIT III

Oracle Tables: DDL - Working with tables: Data Manipulation and Retrieval – Working with Tables: Function and Grouping - Multiple tables: join and set operators

UNIT IV

Subqueries: Nested Queries - Advanced Features: Objects, Transactions, and Data Control - PL/SQL: A Programming Language - Cursors and Exceptions

UNIT V

PL/SQL Composite Data Types: Records, Tables, and Varrays - PL/SQL Named Blocks: Procedure, Function, Package, and Trigger - Connecting to Oracle Database: JDBC, SQLJ.

TEXT BOOKS

1. “Database Management systems” by Alexis Leon and Mathews Leon, 1st Edition, 2008, Leon Vikas Publisher.
2. “Database system using oracle A simplified guide to SQL and PL/SQL” by Nilesh shah, 2nd Edition, 2004, Prentice Hall India Publisher.

REFERENCE BOOKS

1. “Database System Concepts” by Abraham Silberschatz, Henry F.Korth, S.Sudarshan, 6th Edition, 2009, Mc Graw Hill Publications
2. "Learn Oracle 8i" by Jose A. Ramalho, 2007, BPB Publications.

IV SEMESTER			
DSC-9	OPERATING SYSTEM		18UCIT42
Hrs/Week: 4	Hrs/Sem: 60	Hrs/Unit: 12	Credit: 4

Objectives:

To learn the fundamentals of Operating Systems.

To learn the mechanisms involved in memory management, Scheduling process in OS.

To know the concepts deadlock, semaphore and file management

UNIT I

Introduction :Operating-System Structure - Operating-System Operations - Process Management - Memory Management - Storage Management - Protection and Security -

System Structures : Operating-System Services - System Calls - Types of System Calls -

Process Management: Process Concept- Process Scheduling- Operations on Processes - Interprocess Communication.

UNIT II

Threads: Multicore Programming – Multithreading models - **Process Synchronization** - The Critical section problem- Peterson's Solution – Mutex Locks - Semaphores – Monitors -

CPU Scheduling: Scheduling Criteria – Scheduling Algorithms – Multi – Processor Scheduling – Real – Time CPU Scheduling

UNIT III

Deadlocks: Methods for Handling Deadlocks -Deadlock Prevention - Deadlock Avoidance - Deadlock Detection - Recovery from Deadlock - **Main Memory** - Swapping- Contiguous Memory allocation- Segmentation - Paging- Structure of the Page Table

UNIT IV

Virtual Memory: Demand Paging - Page Replacement- Allocation of Frames- Thrashing -

Mass Storage Structure: Disk Structure – Disk Scheduling – Disk Management – RAID Structure – **File System Interface** :File Concept- Access Methods- File Sharing – Protection.

UNIT V

File Implementing File Systems: Allocation Methods – Free Space Management -

Security: The Security Problem - User Authentication – Computer Security Classifications –

Distributed Systems: Advantages Distributed Systems – Types of Network based Operating Systems.

TEXT BOOK:

“Operating System Concepts” by Silberschatz, Galvin , Gagne, 9th Edition, 2012, John Wiley & Sons Inc Publication

REFERENCE BOOKS :

1. "Modern Operating Systems" by Andrew S. Tanenbaum, 3rd Edition, 2009, Pearson Prentice Hall Publication.
2. "Operating Systems Internals and Design Principles" by William Stallings, 7th Edition, 2012, Pearson Prentice Hall Publication.

IV SEMESTER			
DSC-10	INTERNET OF THINGS		18UCIT43
Hrs/Week: 4	Hrs/Sem: 60	Hrs/Unit: 12	Credit: 4

Objective:

- Understand the concepts of IOT and employ IOT to different applications and also Analysis and evaluate protocols used in IOT and the data received through sensors in IOT.
- Employ the application of IOT in Industrial Automation and identify Real World Design constrains and to Recognize Projects based on some Hardware (Raspberry pi, Arduino) Software using IOT.

UNIT I

Internet of Things - Physical Design- Logical Design- IoT Enabling Technologies - IoT Levels & Deployment Templates - Domain Specific IoTs - IoT and M2M - IoT System Management with NETCONF-YANG- IoT Platforms Design Methodology

UNIT II

M2M high-level ETSI architecture - IETF architecture for IoT - OGC architecture - IoT reference model - Domain model - information model - functional model - communication model - IoT reference architecture.

UNIT III

Protocol Standardization for IoT – Efforts – M2M and WSN Protocols – SCADA and RFID Protocols – Unified Data Standards – Protocols – IEEE 802.15.4 – BACNet Protocol – Modbus– Zigbee Architecture – Network layer – 6LowPAN - CoAP - Security.

UNIT IV

Building IOT with RASPERRY PI- IoT Systems - Logical Design using Python – IoT Physical Devices & Endpoints - IoT Device -Building blocks -Raspberry Pi -Board - Linux on Raspberry Pi - Raspberry Pi Interfaces -Programming Raspberry Pi with Python - Other IoT Platforms - Arduino.

UNIT V

Real world design constraints - Applications - Asset management, Industrial automation, smart grid, Commercial building automation, Smart cities - participatory sensing - Data Analytics for IoT – Software & Management Tools for IoT Cloud Storage Models & Communication APIs - Cloud for IoT - Amazon Web Services for IoT

TEXT BOOK

1. "Internet of Things: A Hands-On Approach" by ArshdeepBahga, Vijay Madiseti, 2014, ArshdeepBhaga& Vijay Madiseti Publisher
2. "From Machine-to-Machine Internet of Things Introduction to a New Age of Intelligence" by Jan Holler, VlasiosTsiatsis, Catherine Mulligan, Stamatis Karnouskos, Stefan Avesand, David Boyle,1st Edition,2014, Academic Press is an imprint of Elsevier.

IV SEMESTER		
DSCP -IV	RDBMS WITH ORACLE PRACTICALS	18UCIT4P1
Hrs/Week: 4	Hrs/Sem: 60	Credit: 2

Objectives

- Enhance the knowledge and understanding of Database analysis and design.
- Enhance the knowledge of the processes of Database Development and Administration using SQL and PL/SQL.

1. Creating, modifying and dropping tables.
2. Creating tables with referential and check constraints.
3. Inserting, modifying, deleting rows.
4. Dropping, disabling / enabling constraints.
5. Retrieving rows with operators in where clause.
6. Retrieving rows with Character functions.
7. Retrieving rows with Number and Date functions.
8. Retrieving row with Group functions and HAVING.
9. Joining Tables (Inner and Outer)
10. Creating, modifying and deleting sequence.
11. Creating, modifying and deleting view.
12. Creating, renaming and removing synonyms.
13. Simple PL/SQL Programs.
14. PL/SQL programs with control structures.
15. PL/SQL programs with procedures.
16. PL/SQL programs with functions.
17. PL/SQL programs with package.
18. PL/SQL programs with cursors.
19. PL/SQL programs with Exception Handling.
20. Working with Triggers.

IV SEMESTER			
DSE-2A	PYTHON PROGRAMMING		18UEIT4A
Hrs/Week: 4	Hrs/Sem: 60	Hrs/Unit: 12	Credit: 4

Objective:

- Describe the core syntax and semantics of Python programming language.
- Illustrate the process of structuring the data using lists, dictionaries, tuples and sets.
- Indicate the use of regular expressions and built-in functions to navigate the file system.

UNIT I

Need for Logical Analysis and Thinking – Algorithm – Pseudocode – Flowchart – Tower of Hanoi Problem - About Python – Features of Python – Python Setup – Fundamentals of Python – Values and Datatype – Variables – Keywords - Identifiers – Comments – Quotations – Indentation in Python – Multiline Statements.

UNIT II

Input /Output and Import Functions – Expressions – Statements – Operators – Mathematical Functions – Random Number Functions – Trigonometric Functions – Advantages of Python – Disadvantages of Python - Conditional for decision making – Iterations/ Loops – Nested Loops - Control Statements – Looping Techniques.

UNIT III

Defining a Function – Function Call – Types of Functions – Python Function Arguments – Composition – Python Recursion – Python Anonymous/Lambda Function – Function with more than one return value – Initializing the String variable – Accessing String variable – Slicing Strings – String Concatenation – Repeating a String – Escape Sequences – Format method – String Functions and Methods - String Module

UNIT IV

List – Tuples – Mappings – Dictionary - Mutable and Immutable Objects – Data Type Conversion or Coercion – List Comprehension - Opening a File – Writing to a File – Reading data from a file – Closing a file – Appending Data to a File – Renaming and Deleting a File – OS Directories in Python – File Methods – Command Line Arguments

UNIT V

Creating Modules – Importing Modules – Built –in Modules - Locating Modules – Namespaces and Scope – Dir() Function – The Reload() Function – Packages in Python - Built – In Exceptions – Handling Exceptions - Exception with Arguments- Raising an Exception – User Defined Exception – Assertions in Python.

TEXT BOOK

“Problem Solving and Python Programming” by Dr. A. Kannan, Dr. L. Sai Ramesh, 2017, United Global Publishers Pvt. Ltd.

REFERENCE BOOK

“Core Python Programming” by Wesley J. Chun, 3rd Edition, 2012, Prentice Hall Publisher

IV SEMESTER			
DSE-2B	ACTIVE SERVER PAGES		18UEIT4B
Hrs/Week: 4	Hrs/Sem: 60	Hrs/Unit: 12	Credit: 4

Objective:

- Learn about Scripting Languages and its Components used to create web application
- Learn how to create dynamic webpage and implements database concepts in ASP

UNIT I

Introduction: What is ASP? – ASP Model – The Process of Serving an Active Sever Page – Using Scripting Languages – Understanding Objects – Application Object – Request Object – Response Object – Server Object – Session Object.

UNIT II

Components: The Advertisement Rotator Component – The Browser Capabilities Component – The Text Stream Component – The Input Box Function – The Msg box Function.

UNIT III

Working with Html: Retrieving Form Data – Using Text Boxes and Text Areas – Using Radio Buttons and Check boxes – Using Select Lists – Validating Form Data.

UNIT IV

Cookies: Working with Cookies – Application of Cookies – Drawbacks of using Cookies – Using Cookies in ASP Applications – Working with Files and the File System – Working with Drives and Folders.

UNIT V

Connections and Data Sources: Connecting to Microsoft SQL Server – connecting to a Microsoft Access Database – Connection Object – Executing a SQL Statement with the Connection Object – Working with Record Sets – Recordset Cursor and Locking Types.

TEXT BOOK

“Practical ASP” by Ivan Bayross, 1st Edition, 2003, BBP Publications

IV SEMESTER		
DSEP-2A	PYTHON PROGRAMMING PRACTICALS	18UCIT4PA
Hrs/Week: 2	Hrs/Sem: 30	Credit: 1

Objective:

- To get knowledge to design an application
 - To understand the object oriented program design and development concept in PYTHON
1. Program to demonstrate numbers and operators.
 2. Program using Mathematical Functions.
 3. Program using Trigonometric Functions.
 4. Program using Conditional statements.
 5. Program using Looping Statements.
 6. Program using Continue, Pass and BreakStatement.
 7. Program to design a Arithmetic Calculator
 8. Program to search an element in an array using Binary Search Technique.
 9. Program using Recursive Function
 10. Program to demonstrate String Manipulation.
 11. Program using lists.
 12. Program using tuples.
 13. Program using dictionary.
 14. Program using Modules.
 15. Program using Packages.
 16. Program to demonstrate Exception handling.

IV SEMESTER		
DSEP -2B	ACTIVE SERVER PAGE PRACTICALS	18UEIT4PB
Hrs/Week: 2	Hrs/Sem: 30	Credit : 1

Objective:

- Learn how to Use Cookies in ASP Applications
 - Learn about Query String and handling events.
 - Working with Browser Capability Component.
 - Working with Files and the File System
 - Illustrate the process of database in ASP
1. Demonstration of Cookies.
 2. Write an ASP program to store username and password into session.
 3. Demonstration of Query String.
 4. Write an ASP program to count the number of visitors for the particular webpage.
 5. Demonstration of events.
 6. Write an ASP program, finding Browser's Information using Browser Capability Component.
 7. Write an ASP program to copy the contents of file into another file.
 8. Write an ASP program to move and delete the specified file.
 9. Write an ASP program to write and read the contents of a file.
 10. Demonstration of Drives.
 11. Demonstration of Folder.
 12. Write an ASP program to create a table and insert a record into the table.
 13. Write an ASP program to select the data from the table.
 14. Write an ASP program to update a record into the table.
 15. Write an ASP program to delete record from the table and alter table's data.
 16. Write an ASP program to drop a table from the database.

IV SEMESTER			
AII –2	UNIX AND SHELL PROGRAMMING		18UAIT41
Hrs/Week: 4	Hrs/Sem: 60	Hrs/Unit: 12	Credit: 3

Objective:

- Know the architecture and features of UNIX Operating System and Learn the file system in Unix operating system
- Recognize using UNIX various commands and discover to use vi editor
- Write Regular expressions for pattern matching and apply them to various filters and Learn to use sed editor and awk command
- Understand the Unix shell , permission concepts and process management in Unix operating system
- employ shell scripts to solve the problem and recognize duties of the system administrator

UNIT I

The Unix architecture and command usage:The Unix architecture- Features of unix – Command structures – **General purpose Utilities:** cal – date – echo – bc – who – tty – sty - changing password command - **The File System-Handling ordinary files:** cat – cp – rm – mv – more – wc – od – cmp - dif

UNIT II

Basic file attributes: ls Command - file ownership - file permission - chmod –directory permission - changing file ownership - **Vi editor:** Input mode - ex mode-editing text – searching for pattern - substitution - **The shell:** pattern matching-escaping and quoting – redirection – pipes - tee command - command substitution – shell variables

UNIT III

The process: process basic-ps-process states and Zombies- running job in background – nice – kill - at and batch – cron – time - **Customizing the Environment** - environment variables - **More File Attributes:** file system and Inodes – ln and mask command-modification and access times - find

UNIT IV

Simple Filters: Pr – head – tail – cut – paste – sort – uniq – tr - **Filters using Regular Expression:** grep - basic regular expression – egrep – sed - line addressing-using multiple instruction-text editing – **Awk** : simple awk filtering-splitting a line into fields - printf

UNIT V

Essential Shell programming: shell scripts – read - command line arguments – exit - logical and condition operator - if control – test – case - expr computation and string handling – while – for - manipulating the positional parameters

TEXT BOOK:

“Unix Concepts And Applications” by Sumitabha Das, 4th Edition, 2006, Tata Mc Graw Hill Publications

IV SEMESTER		
AII-2P	UNIX AND SHELL PROGRAMMING PRACTICALS	18UAIT4P1
Hrs/Week: 2	Hrs/Sem: 30	Credit: 1

Objective:

- Understand the concepts of control statements in shell programming
- Execute unix command in shell programming
- Check and modify file access permission
- Understand the unix file system and accessing them
- Recognize regular expression in grep command

1. Program for finding factorial
2. Program for generating Multiplication Table.
3. Finding Simple Interest.
4. Leap year checking.
5. Counting No, words, lines, characters.
6. Fibonacci Series.
7. Over time pay calculation.
8. Checking file access permission.
9. Counting number of lines before and after updating the file.
10. File Comparison.
11. Listing contents of directory and removing directory.
12. Implementing copy, move command.
13. Implementing sort command
14. Implementing grep command
15. Students mark List

IV SEMESTER			
NME-II	DOCUMENT CREATION TOOLS		18UNIT41
Hrs/Week: 2	Hrs/Sem: 30	Hrs/Unit: 6	Credit: 2

Objective:

- Understand the basic editing operations
- Analyze the editing tools
- To design the 3D images effectively.
- To display the pictures in their own creativity
- To work effectively in their DTP works

UNIT I

Introduction to Page Maker - layout window – Document setup – Basic PageMaker function: Open, new, close, print, save and save us – Working with text text tool, TEXT Block – Editing text – Formatting a Text Character formatting, paragraph formatting and style creation and Color creation

UNIT II

Working With Graphics:Graphics Tool, Masking, Rotation, Flipping, Cropping, positioning and scaling, Fill option. Arrange the object, Grouping, locking, Frame concept polygon setting and Text wrap properties Master pages: Header and Footer and Template files – Story editor: Find & Replace. Spell Checker – Book Creation – TOC Creation - Index Creation both page reference and cross reference – Table editor: Create Tables using Adobe Table, Import tables into Page maker

UNIT III

Introduction to CorelDraw – features and advantages – Layout window – Basic Corel Draw functions: open, new, close, print , save and save as. Basic Tools: Rectangle, Ellipse, Text, Freehand drawing, Outline, fill and shape – Creating and manipulating text: Artistic Text, Artistic Tool and paragraph text - Text based Roll – ups: Enveloping., Extruding, Text and fit text to path.

UNIT IV

Fill, Outline, Group, ungroup weld, combine, breaking apart, Separate, Intersection. Trim, Align and ordering – Effects: transforming object, Shaping object - Graphic based Roll – ups: Pen, Blend, Contour, symbol, Preset, Layer and Power clip option - Template creation Creating New: Arrow, Pattern, symbol and style

UNIT V

Working with Bitmap Commands:- Introduction - Working with Bitmaps- Editing Bitmaps Applying effects on Bitmaps Printing - Corel Draw- Web resources Introduction -Internet Tool bar -Setting your webpage -Exporting files- Creating buttons with rollover effects

TEXT BOOKS

1. “Mastering Page Maker6 for Windows 95” by Rebecca Bridges Altman & Rick Altman
2. “Corel Draw 8: The Official Guide” byFoster Coburn & Peter McCormick
3. “Photoshop 4 Studio Skills” bySteven Moniz.

V SEMESTER			
DSC-11	COMPUTER GRAPHICS AND MULTIMEDIA		18UCIT51
Hrs/Week: 6	Hrs/Sem: 90	Hrs/Unit: 18	Credit: 4

Objectives

- Students can able to enrich the knowledge in 2D,3D Viewing and interactive Computer Graphics
- They can able to do their own Graphics art.

UNIT I

Graphics Primitives: Introduction To Computer Graphics - Video Display Devices- Raster Scan Systems - Random Scan Systems - Interactive Input Devices - Hard Copy Devices - Graphics Software - **Output Primitives:** Line Drawing Algorithms - Initializing Lines - Line Function - Circle Generating Algorithms..Filled Area Primitives: Boundary Fill And Flood Fill Algorithms.

UNIT II

Two-Dimensional Geometric Transformation: Basic Transformation – Matrix - Representations And Homogeneous Coordinates - Composite Transformations - **Two - Dimensional Viewing:** The Viewing Pipeline - Window- To View Port CoOrdinate Transformation - Two Dimensional Viewing Functions - Clipping Operations - Point Clipping - Line Clipping - Polygen And Curve Clipping.

UNIT III

Three - dimensional Concepts: Three dimensional display methods - parallel Projection - Perspective Projection - Depth Cueing - Visible line and surface identification - Three dimensional transformations.

UNIT IV

How flash works - Introducing the Flash Workspace – Panels - Tools – Timelines – Frames – Concept of frames – Scenes in Flash – Layers in Flash - Testing a flash movie - Publishing a flash movie - Working with Color – Color Swatches Panel – Color Mixer Panel – Symbols – Creating Symbols and Instances – Creating a button – Editing symbols – Modifying the instance of a symbol – Library – Using the library – Using the Common Library.

UNIT V

Animation – Working with Time line effects - Using the Explode Timeline Effect – Frame by Frame Animation Technique – Tweening: Motion and shape tweening – creating masking effect – Action scripts – Programming concept in Action Script – VB.NET

TEXT BOOK

“Computer Graphics C Version” by D.Hearn and M.P.Baker, 2nd Editon, Pearson Education Publication.

“Flash 8 in Simple Steps” by Salini Gupta and Adity Gupta, 2006, Dream Tech press Publication

REFERENCE BOOK

W.M. Newman and R.F.Sproull - Principles of Interactive Computer Graphics - McGraw Hill International Edition - 1979.

V SEMESTER			
DSC-12	DOT NET PROGRAMMING		18UCIT52
Hrs/Week: 6	Hrs/Sem: 90	Hrs/Unit: 18	Credit: 4

Objective:

- Understand the Microsoft .NET Framework and ASP.NET page structure
- Design web application with variety of controls
- Access the data using inbuilt data access tools
- Use Microsoft ADO.NET to access data in web Application
- Configure and deploy Web Application
- Configure and deploy Web Application

UNIT I

The C# Language: C# Language Basics – Variables and Data Types – Variable Operations – Object Based Manipulation – Conditional Logic – Loops – Methods – **Types, Objects**, and Namespaces : Basic about Classes – Building a Basic Class – Various Types and Reference Types – Understanding **Namespaces and Assemblies – Advanced Class Programming.**

UNIT II

Creating websites – Exploring the Anatomy of a Web Form – Writing Code – Debugging – Understanding the Anatomy of an ASP.Net Application - Introducing Server Controls – Using the Page Class – Configuring ASP.Net Application – An Interactive Web Page – Handling Exceptions – Using Page Tracing – Using Cookies – Managing Session State.

UNIT III

Understanding Validation – Using the Validation Controls – The Calendar – The AdRotator – Creating Views – Showing a View – Using Wizard Events – Validating with the Wizard – Styles – The CSS Properties Window – Style Inheritance – Themes – URL Mapping and Routing – The SiteMapPath Control The Menu Control.

UNIT IV

Understanding Databases – Configuring Database – Using Direct Data Access – Introducing Data Binding – Working with Data Source Controls – The Grid View – File System Information – Reading and Writing with Streams – The XML Classes – XML Validation.

UNIT V

Authentication and Authorization – Windows Authentication – The Membership Data Store – The Security Controls – Understanding AJAX – Working with ASP.Net AJAX control Toolkit – ASP.Net Applications and the Web Server – IIS – Managing Websites with IIS.

TEXT BOOK

“Begining ASP .NET 4.5 in C# by Mathew MacDonald, 2012, Apress Publications

REFERENCE BOOK

1. “The complete reference ASP .NET” by Mathew Macdonald, 2002, Tata McGraw Hill Publications.
2. “Microsoft ASP. NET Step by step” by G. Andrew Duthie, 2002, Prentice Hall India Publications.

V SEMESTER			
DSC-13	ARTIFICIAL INTELLIGENCE		18UCIT53
Hrs/Week: 4	Hrs/Sem: 60	Hrs/Unit: 12	Credit: 4

Objectives:

Students will explore Intelligence through problem-solving paradigms, logic and theorem proving, language and image understanding, search and control methods and learning.

Graduates will have a broad understanding of the fundamental theories, concepts, and applications of computer science.

UNIT I

Introduction: What Is AI?-**Intelligent Agents:** Agents And Environments - Good Behavior: The Concept Of Rationality-Structure Of Agent - **Problem Solving:** Problem Solving Agents-Searching for Solutions – Uninformed Search Strategies - Informed (Heuristic) Search Strategies- Heuristic Function.

UNIT II

Knowledge Reasoning And Planning: Local Agents: Knowledge-Based Agents – Logic - Propositional Logic-**First Order Logic:** Syntax And Semantics of First Order Logic-Using First Order Logic

UNIT III

Natural Language Processing: Language Models - Text Classification - Information Retrieval - Information Extraction - **Natural Language Communication:** Phrase Structure Grammars-Syntactic Analysis (Parsing)- Machine Translation-Speech Recognition

UNIT IV

Perception: Image Formation-Early Image-Processing Operations-Object Recognition By Appearance-Reconstructing The 3d World-Object Recognition From Structural Information-Using Vision

UNIT V

Robotics: Introduction- Robot Hardware- Robotic Perception- Planning To Move- Planning Uncertain Movements- Moving- Robotic Software Architectures- Application Domains

TEXT BOOK

“Artificial Intelligence-A Modern Approach” by Stuart J. Russell and Peter Norvig,, 3rd Edition, 2010, Pearson Publication

V SEMESTER		
DSCP-V	COMPUTER GRAPHICS AND MULTIMEDIA PRACTICALS	18UCIT5P1
Hrs/Week: 4	Hrs/Sem: 60	Credit: 2

Objectives

- Students can able to enrich the knowledge in 2D,3D Viewing and interactive Computer Graphics
 - They can able to create their own Graphics art.
1. Program to draw line using DDA Algorithm
 2. Program to draw line using Bresenham's Algorithm
 3. Program to draw circle using Bresenham's Algorithm
 4. program to draw an object and fill it using various styles
 5. program using any filling algorithm
 6. program to use transformations
 7. program to animate an object
 8. program to draw text in various styles
 9. Make an object move across the screen.
 10. Draw a path an object should follow.
 11. Using Shape Tweening you can change one object into another.
 12. Create your own button and add a URL to it so it becomes a link.
 13. Create a draggable movie clip in Flash
 14. Animate an object
 15. Play sound Play a video file

V SEMESTER			
DSE-3A	PHP PROGRAMMING		18UEIT5A
Hrs/Week: 4	Hrs/Sem: 60	Hrs/Unit: 12	Credit: 4

Objective:

- To develop basic skills in analyzing the usability of a web site.
- To develop hands on experience using open source technologies such as HTML, CSS, PHP, MySQL and XML.
- To implement static, dynamic and interactive web pages and web applications.

UNIT I

Introduction: PHP History – Unique Feature – Writing and running the script – Mixing PHP with HTML – Variables and operators: Assigning values to variable – Destroying and inspecting variable content – PHP Data Types - Manipulating variable with operators

UNIT II

Controlling program flow: writing simple conditional statements – if – if else – if else if - Switch case Repeating action with loops: while – do while – for loops – String functions – Numeric function

UNIT III

Working with Array: Storing data in Array – Assigning Array values – Nesting Arrays – for each loop – Array functions - Functions: Creating and invoking function – using arguments and return values

UNIT IV

Working with files and directory - reading files - writing files - Working with database and SQL: Database, records, primary and foreign key - SQL statements – Creating database – Adding Tables – Adding Records – Retrieving Data -modifying data-

UNIT V

Working with XML:Basics-Anatomy of an XML Document-Well formed and valid XML-XML Parsing method- Using PHP's Simple XML Extension:Working with elements and attributes Cookies: Basics – Attributes – Headers – setting, reading and removing cookies - Session: Basics – Creating and removing sessions - Handling Scripting Errors-Using Exception

TEXT BOOK

“PHP A Beginner’s Guide” by Vikram Vaswani, 2009, Tata Mc Graw Hill Publications

REFERENCE BOOK

“Beginning PHP 5.3” by Matt Doyle, 2010, Wiley Publications.

V SEMESTER			
DSE-3B	J2EE PROGRAMMING		18UEIT5B
Hrs/Week: 4	Hrs/Sem: 60	Hrs/Unit: 12	Credit: 4

Objective:

- Familiar the ADVANCED concepts in JAVA
- Server side programming concepts to analyze.
- To analyse Deployment Issues, Performance Tuning and Security
- Identify advance concepts of java programming with database connectivity.

UNIT I

The java2 Enterprise Architecture – J2EE Multitier Architecture – j2EE Implementation Architecture – Client Tier Implementation – web tier implementation–EJB Tier implementation–j2ee Application – Structured Query Language.

UNIT II

Introduction –JDBC driver types –Loading JDBC Driver –Connect to the DBMS –Database Connection –Statement Object –Prepared Statement –Callable Statement –Result Set – Retrieving Result –Results –Reading The Result Set –Scrollable Result Set –Updatable Result Set.

UNIT III

JSP Basics –Advantages of JSP –The Architecture of Java Server Pages(JSP) –JSP Tags – Variables and Object –methods –Control Statement –loops –JSP Objects: Request Object – Out Object –Session Object –Cookies.

UNIT IV

Introduction –Java servlet –Advantage of Servlets –Servlet Life Cycle –A simple Java Servlet Generating plain Text –A Servlet that Generates HTML –Handling Forms with Servlet.

UNIT V

Introduction to RMI –RMI interface –Passing Objects –The RMI Process –Server side – Client Side –Creating RMI Application –Steps involved in running the RMI Application.

TEXT BOOK

“J2EE-Complete Reference” by Jim Keogh, 2002, Tata McGraw Hill publication.

REFERENCE BOOK

“TheJ2EE Tutorial” by Stephanie Bodoff Dale Green, 1st Edition, 2002, Addison-Wesley

V SEMESTER		
DSEP-3A	PHP PROGRAMMING PRACTICALS	18UEIT5PA
Hrs/Week: 4	Hrs/Sem: 60	Credit: 2

Objective:

- Understand the control structure and Looping statements
 - Learn about built in functions and creating user defined function
 - Working with files, arrays and database concepts
 - To implement static, dynamic and interactive web pages using session and cookie and validation concepts.
1. Write a PHP program to Create simple webpage using PHP
 2. Write a program in PHP to change background color based on day of the week using if else if statements and using arrays
 3. Write a simple program in PHP for i) generating Prime number ii) generate Fibonacci series
 4. Write a PHP program to remove duplicates from a sorted list
 5. Write a PHP Script to print the following pattern on the Screen:
 - a. *****
 - b. *****
 - c. *****
 - d. *****
 - e. *****
 6. Write a simple program in PHP for Searching of data by different criteria
 7. Write A PHP Program To Perform The Following Operations. (A) Union Of Two Arrays. (B) Traverse The Array Elements In Random Order. (C) Calculate Sum Of Array Elements. (D) Check The Array Element Is Negative Or Not Using Filter.
 8. Write a function in PHP to generate captcha code
 9. Write a Program to store and read image from Database.
 10. Write a program in PHP to read and write file using form control.
 11. Write a program in PHP to add, update and delete using student database.
 12. Write a program in PHP to Validate Input
 13. Write a program in PHP for setting and retrieving a cookie
 14. Write a Program to create simple Login and Logout using sessions.
 15. Write a program in PHP for exception handling for i) divide by zero ii) checking date format.

V SEMESTER		
DSEP-3B	J2EE PROGRAMMING PRACTICAL	18UEIT5PB
Hrs/Week: 4	Hrs/Sem: 60	Credit: 2

Objective:

- Familiar the ADVANCED concepts in J2EE
- learn to access database through Java programs, using Java Data Base Connectivity (JDBC)
- Be familiar with a advanced features of Monitoring and mapping in java server
- To analyse Deployment Issues, Performance Tuning and Security
- Able to implement their own server side access capacity

1. Write a java code creates a connection to the access database on a hard disk using DSN named Bsc and display it message “Connected Success “if the connection is created.
2. Created a table with the following information Name, Subject, Qualification, and Percentage in an Access database using the class Java.Sql.Package.
3. Write a java code to insert the following data into the table “Success “which is created in Access.
4. Simply fetch the table information using JDBC.
5. Program to update a particular Record Using JDBC.
6. Write a program to display record using prepared statement .
7. Create a Servlet an simply display the message “Best Wishes to complete B.Sc(CS) Course Sucessfully” using Hyperlink.
8. Create a simple servlet using the get Parameter () method and display the output in another form.
9. Write a servlet code to change the explorer background color.
10. Write a HTML code to capture the user input Name,. E-mail Id, about the student and display the information in the next form.
11. Write a simple JSP code and display the output to next form.
12. Write a JSP Program for Quiz.
13. Write a program using Request and Out Object in JSP.
14. Write a RMI Program to add a two numbers.
15. Write a Program for creation of simple client server application using RMI.

V SEMESTER			
SEC-I	INTERNET SECURITY		18USIT51
Hrs/Week: 2	Hrs/Sem: 30	Hrs/Unit: 6	Credit: 2

Objective:

- Understanding Security attacks, services and mechanism
- To understand the fundamentals of Threats and how to prevent from various threats
- To acquire knowledge on Firewall and Gateway
- Explore various secure communication standards including IPsec, and SSL/TLS and email.
- Learn about IP Security

UNIT I

Computer Security Concepts – The OSI Security Architecture – Security Attacks - Security Services – A Model for Network Security – Mechanism – Symmetric Encryption Principles.

UNIT II

Public – Key Cryptography Principles – Kerberos - Web Security Consideration – SSL and Transport Layer Security

UNIT III

TLS– HTTPS – Wireless LAN Overview – Wireless Application Protocol Overview – WAP End to End Security

UNIT IV

S/MIME – Domain Keys Identified Mail - IP Security Overview – IP Security Policy – Internet Key Exchange – Cryptographic Suites

UNIT V

Intruders – Types of Malicious Software – Viruses – Worms – Distributed Denial Service Attacks – Firewall Characteristics – Types of Firewalls – Firewall Location and Configuration.

TEXTBOOK

“Network Security Essentials Application and Standards” by William Stallings, 4th Edition, 2011, Pearson Education.

REFERENCE BOOK

“Firewalls and Internet Security” Repelling the Wily Hacker by William R. Cheswick, Steven M. Bellovin and Avi D. Rubin, 2nd Edition, 2003, AT & T and Lumeta Corporation

VI SEMESTER			
DSC - 14	MOBILE APPLICATION DEVELOPMENT		18UCIT61
Hrs/Week: 4	Hrs/Sem: 60	Hrs/Unit: 12	Credit: 4

Objectives:

The student will learn the basics of Android platform and get to understand the application lifecycle

Familiarize with **Android's** APIs for data storage, retrieval, user preferences, files and content providers.

UNIT I

An Overview of the Android Platform: Introducing Android - The Open Handset Alliance - Android Platform Differences - **Setting Up Your Android Development Environment:** Exploring the Android SDK - **Writing Your First Android Application:** Building Your First Android Application

UNIT II

Android Application Basics: Understanding the Anatomy of an Android Application - Defining Your Application Using the Android Manifest File - Managing Application Resources.

UNIT III

Android User Interface Design Essentials: Exploring User Interface Building Blocks - Designing with Layouts - Displaying Dialogs.

UNIT IV

Android Application Design Essentials: Working with Files and Directories - Leveraging Content Providers - Designing Compatible Applications

UNIT V

Publishing and Distributing Android Applications: Learning the Android Software Development Process - Designing and Developing Bulletproof Android - **Planning the Android Application Experience – Applications - Testing Android Applications** - Publishing Your Android Application.

TEXT BOOK

“Introduction to Android Application Development” by Joseph Annuzzi, Jr. Lauren Darcey, Shane Conder , 4th Edition, 2014, Addison Wesley Publications.

REFERENCE BOOKS

1. “Professional Android 4 Application Development” by Reto Meier, 2012, John Wiley and Sons Publications
2. “Android Apps for Absolute Beginners” by Wallace Jackson, 2nd Edition, 2012, A press Publications

VI SEMESTER			
DSC - 15	SOFTWARE ENGINEERING		18UCIT62
Hrs/Week: 4	Hrs/Sem: 60	Hrs/Unit: 12	Credit: 4

Objectives:

Understand basic SW engineering methods and practices, and their appropriate application.
 Understand of different software architectural styles and Process frame work.
 Understand of implementation issues such as modularity and coding standards.

UNIT I

The Evolving Role of Software - Software Characteristics - Software Applications - Software Myths - Software Process Models: The Linear Sequential Model - The Prototyping Model - The RAD Model - Evolutionary Software Process Models - The Incremental Model - Spiral Model.

UNIT II

Computer-Based Systems - The System Engineering Hierarchy - System Modeling - System Simulation - Business Process Engineering: An Overview - Product Engineering: An Overview - Requirements Engineering - Requirements Elicitation - Requirements Analysis and Negotiation - Requirements Specification - System Modeling - Requirements Validation - Requirements Management - System Modeling

UNIT III

The Elements of the Analysis Model - Data Modeling - Data Objects- Attributes and Relationships - Data Flow Diagrams - The Data Dictionary - Other Classical Analysis Methods - The Design Process – Modularity - Functional Independence - Cohesion – Coupling – Design Documentation - Software Architecture - User Interface Design - Component-Level Design.

UNIT IV

Software Testing Fundamentals - Testing Case Design - White-Box Testing – Black Box Testing - Testing for Specialized Environments - Testing Strategies - Unit Testing - Integration Testing - Validation Testing - System Testing – Case Study.

UNIT V

Quality Concepts - Cost of Quality - Software Quality Group (SQA) - SQA Activities – Role and Responsibilities of SQA Group - Formal Technical Reviews - Quality Standards - Software Reliability.

TEXT BOOK

“Software Engineering A Practitioner’s Approach” by Roger S Pressman, 5th Edition, 2009, McGraw Hill Publications.

REFERENCE BOOKS

1. “Software Engineering” by Ian Sommerville, 9th Edition, 2011, Pearson Education Publications
2. “Software Engineering An Engineering Approach” by James Peter and Pedrycz W, 2007, John Wiley& Sons Publications.

VI SEMESTER		
DSC – 16	PROJECT	18UCIT63
Hrs/Week: 6	Hrs/Sem: 90	Credit: 6

OBJECTIVES :

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

1. Identify the potential areas of research in his/her field;
2. Collect data from various sources including the internet, analyze them, make new connections and link them to life;
3. Read and write originally and usefully.

GUIDELINES :

1. The project may be done individually or in groups **not exceeding three per group.**
2. The minimum length of the project should be 30 pages in A4 size.
3. The project may not be experimental oriented .
4. Project should be cheap within the expense of students limit.
5. It can be of survey method.
6. Marks for the project report will be 100 divided as **60% for the presentation of project and 40% for viva-voce.**
7. **Evaluation scheme:**
8. The project will be evaluated by both Internal and External Examiners. Each Examiner will evaluate for 100 marks. The allocation of marks for project is as follows:

Project	Internal	External
Word of title	5	5
Objectives / Formulation including Hypothesis	5	5
Review of literature	10	10
Relevance of project to social needs	5	5
Methodology / Technique / Procedure adopted	20	20
Summary / Findings / Summation	5	5
Works cited / Annexure / Footnotes	10	10

VI SEMESTER		
DSCP -VI	MOBILE APPLICATION DEVELOPMENT PRACTICALS	18UCIT6P1
Hrs/Week: 4	Hrs/Sem: 60	Credit: 2

Objective:

- Learn to develop an mobile application in an android environment
- Learn a basic tools create a dynamic application

1. Basic Android Application to display a message
2. Android application to display toast message on button click
3. Android applications using basic user interface controls
4. Android applications to use android specific user interface controls
5. Android application for login operation
6. Android application to make use of database
7. Android applications to make use of different layouts
8. Android application to implement various Event listeners
9. Android application to display dialog box and alert messages
10. Android application to create animation

VI SEMESTER			
DSE-4A	DATA MINING		18UEIT6A
Hrs/Week: 4	Hrs/Sem: 60	Hrs/Unit: 12	Credit: 4

Objectives:

- To identify the efficiency of pattern mining methods.
- To learn the density based approach to cluster analysis.

UNIT I

Introduction: What is Data Mining - Data Mining Applications – Data Mining Techniques - **Data Understanding and Data Preparation** - Introduction-Data Collection and Pre-Processing - Types of Data - Displaying Data Graphically

UNIT II

Association Rules Mining: Basics – The task and a Naïve Algorithm – The Apriori Algorithm – Improving the efficiency of the Apriori Algorithm – Apriori - TID – Direct hashing and pruning – Dynamic itemset counting – Mining frequent patterns without candidate generation – Performance evaluation of algorithms – Software for association rule mining.

UNIT III

Classification: Decision tree – Building a decision tree – The tree induction algorithm – Split algorithm based on information theory – Split algorithm based on the Gini index – Over fitting and Pruning – Decision tree rules – Naïve Bayes Method – Estimating predictive accuracy of classification methods – Improving accuracy of classification methods – Other evaluation criteria for classification methods – Classification software.

UNIT IV

Cluster analysis: Introduction- Desired features of cluster analysis –Types of cluster analysis methods – Partitional methods – Hierarchical methods – Density-based methods – Dealing with large databases – Quality and validity of cluster analysis methods – Cluster analysis software - **Web Data Mining:** Web terminology and characteristics – Locality and hierarchy in the Web – Web content mining – Web usage mining – Web structure mining –Web Data Mining – Web terminology and characteristics – Locality and hierarchy in the Web – Web content mining – Web usage mining – Web structure mining – Web mining software

UNIT V

Search Engines and Query Mining: Introduction-Search Engine Functionality-Search Engine Architecture - Ranking of Web pages - Search Query Mining - Data Warehousing introduction-Data warehouse design - Data warehouse Metadata – **OLAP:** Introduction-Multi dimensional View and Data Cube-OLAP Software

TEXT BOOK

“Introduction to Data Mining with Case Studies” by G.K. Gupta, 2nd Edition, 2008, Prentice Hall Publications.

REFERENCE BOOK

“Data Mining Techniques” by Arun K Pujari, 1st Edition, 2001, Universities Press(India) Private Limited.

VI SEMESTER			
DSE-4B	VIRTUAL REALITY		18UEIT6B
Hrs/Week: 4	Hrs/Sem: 60	Hrs/Unit: 12	Credit: 4

Objectives:

- To enable the creativity in 3D virtual environment
- To develop a range of interpreting scenarios that can be run in different modes.

UNIT I

Introduction: what is Virtual Reality – Modern VR Experience – History Repeats - **Birds-eye view** - Hardware - Software – Human Physiology and perception - **The Geometry of Virtual Worlds:** Geometric models – Chaining Position and Orientation - Axis-angle representations – Viewing Transformation – Chaining the Transformation

UNIT II

Light and Optics: Basic Behavior of Light – Lenses – Optical Aberrations – The Human Eye – Cameras – **The Phylosophy of Human Vision:** From the Cornea to Photoreceptors – From Photoreceptors to the Visual Cortex – Eye Movements – Implications of VR

UNIT III

Visual Perception: Perception of Depth – Perception of Motion - Perception of Color – Combining Sources of Information – **Visual Rendering:** Ray Tracing and Shading Models – Rasterization – Correcting Optical Distortion – Improving Latency and Frame Rate – Immersive Photos and Videos – **Motion in Real and Virtual World :** Velocities and Accelerations – The Vestibular System – Physics in the Virtual world – Mismatched Motion and Vection

UNIT IV

Tracking: Tracking 2D Orientation – Tracking 3D Orientation – Tracking Positions and Orientation – Tracking Attached Bodies – 3D Scanning Environments – **Interaction:** Motor Programs and Remapping – Locomotion – Manipulation – Social Interaction – Additional Interaction Mechanisms

UNIT V

Audio: The Physics of Sound – The Physiology of Human Hearing – Auditory Perception – Auditory Rendering – **Evaluating VR Systems and Experiences:** Perceptual Training – Recommendations for Developers – Comfort and VR Sickness – Experiments on Human Subjects – **Frontiers:** Touch and Proprioception – Smell and Taste – Robotic Interfaces – Brain – Machine Interface.

TEXT BOOK

“Virtual Reality” by Steven M. LaValle, 1st Edition, 2017, Cambridge University Press.

REFERENCE BOOK

1. “Foundations of Sensation and Perception” by George Mather , 2nd Edition, 2009, Psychology Press Publication.
2. “Fundamentals of Computer Graphics” by Peter Shirley, MichaelAshikhmin, and Steve Marschner, 3rd edition, 2009, A K Peters/CRC Press.

VI SEMESTER		
DSEP-4A	DATA MINING PRACTICALS	18UEIT6PA
Hrs/Week: 4	Hrs/Sem: 60	Credits:2

Objectives:

Practical exposure on implementation of well known data mining tasks.
 Exposure to real life data sets for analysis and prediction.
 Learning performance evaluation of data mining algorithms in a supervised and an unsupervised setting.
 Handling a small data mining project for a given practical domain.

1. Create an Employee Table with the help of Data Mining Tool WEKA.
2. Finding Association Rules for Banking data.
3. To Construct Decision Tree for Weather data and classify it.
4. To Construct Decision Tree for Location data and classify it.
5. Write a procedure for Clustering Weather data
6. Demonstration of preprocessing on dataset student.arff
7. Demonstration of preprocessing on dataset labor.arff
8. Demonstration of Association rule process on dataset contact lenses.arff using apriori algorithm
9. Demonstration of Association rule process on dataset test.arff using apriori algorithm
10. Demonstration of classification rule process on dataset student.arff using j48 algorithm
11. Demonstration of classification rule process on dataset employee.arff using j48 algorithm
12. Demonstration of classification rule process on dataset employee.arff using id3 algorithm
13. Demonstration of classification rule process on dataset employee.arff using naïve bayes algorithm
14. Demonstration of clustering rule process on dataset iris.arff using simple k-means
15. Demonstration of clustering rule process on dataset student.arff using simple k-means

VI SEMESTER		
DSEP-4B	VIRTUAL REALITY PRACTICALS	18UEIT6PB
Hrs/Week: 4	Hrs/Sem: 60	Credits:2

Objectives:

The objective of this course is to advance the students in their knowledge of Virtual Reality by helping them to build a VR application using unity

1. Create Roll a ball in UNITY
2. Create Space Shooter in UNITY
3. Create a Survival Shooter Game setup, Player and Camera in UNITY
4. Create a Survival Shooter Game Boundaries, Hazards and Enemies in UNITY
5. Create Scoring, Finishing and building the game in UNITY
6. Create an Arch Villain and make their appearance in UNITY
7. Create survival shooter game in UNITY
8. Create Tanks in UNITY
9. Create tower defence template in UNITY
10. Create Targeting and firing in UNITY
11. Setting up stage in UNITY
12. Adding sounds in movies.

VI SEMESTER			
SEC-II	JAVA SCRIPT		18USIT61
Hrs/Week: 2	Hrs/Sem: 30	Hrs/Unit: 6	Credit: 2

Objective:

Students can familiarize the scripting concept to create web application

To gain knowledge about client and server side scripts

UNIT I

The JavaScript Revolution: Advantages of JavaScript - Anatomy of a Typical Modern JavaScript App – *Functions:* Function Definition - Functional Programming - Asynchronous Operations.

UNIT II

Objects: Prototypes - Object Creation - Bundling and Deployment - Prototypal Inheritance with Stamps - *Modules:* Interfaces - The Module Pattern - Node-Style Modules - Defining the App - Bundling and Deployment.

UNIT III

Separation of Concerns: Client-Side Concerns - Server-Side Concerns - *Access Control:* Authentication – Authorization.

UNIT IV

Logging : Debugging - Server Operations - Security - Auditing - Logging Checklist - Logging Requests - Logging Errors - Sample Log Output - Logging Service Alerts - Logging Goals - Profiling and Instrumentation - Logging Client-Side Events - Deciphering Data.

UNIT V

Building RESTful APIs : Usable - *Self-Describing:* Hypermedia - Responsive APIs - Optimizing for Speed - *Feature Toggle:* Organizing Features - Lifespan of a Feature – Implementation.

TEXT BOOKS

1. "Programming JavaScript Applications" by Eric Elliott, First Edition, 2014, O'Reilly
2. "JavaScript: The Definitive Guide" by David Flanagan, Sixth Edition, 2011, O'Reilly

VI SEMESTER			
SBC	PERSONALITY DEVELOPMENT		18USPD62
Hrs / Week: 2	Hrs / Sem: 30	Hrs / Unit: 6	Credits:2

UNIT - I

PERSONALITY - Definition – Determinants – Personality Traits –Theories of Personality – Importance of Personality Development.**SELF AWARENESS** – Meaning – Benefits of Self – Awareness – Developing Self – Awareness.
SWOT – Meaning – Importance- Application – Components.

UNIT – II

SELF MONITORING – Meaning –Advantages and Disadvantages self monitor - Self – monitoring and job performance. **PERCEPTION**- Definition-Factor influencing perception- Perception process. **ATTITUDE** – Meaning-Formation of attitude – Types of attitude - Measurement of Attitudes.
ASSERTIVENESS - Meaning – Assertiveness in Communication – Assertiveness Techniques.

UNIT – III

TEAM BUILDING – Meaning – Types of teams – Importance of Team building- Creating Effective Team.**LEADERSHIP** – Definition – Leadership style – Qualities of an Effective leader.**NEGOTIATION SKILLS** – Meaning – Principles of Negotiation – Types of Negotiation – The Negotiation Process.**CONFLICT MANAGEMENT** – Definition- Types of Conflict- Levels of Conflict.

UNIT -IV

COMMUNICATION – Definition – Importance of communication – Process of communication –Barriers in communication – Overcoming Communication Barriers. **EMOTIONAL INTELLIGENCE**: Meaning – Components of Emotional Intelligence- Significance of managing Emotional intelligence.
STRESS MANAGEMENT – Meaning – Sources of Stress – Symptoms of Stress – Consequences of Stress – Managing Stress.

UNIT – V

SOCIAL GRACES – Meaning – Social Grace at Work – Acquiring Social Graces.**TABLE MANNERS** – Meaning – Table Etiquettes in Multicultural Environment- Do's and Don'ts of Table Etiquettes. **DRESS CODE** – Meaning- Dress Code for selected Occasions – Dress Code for an Interview.**GROUP DISCUSSION** – Meaning – Personality traits required for Group Discussion- Process of Group Discussion. **INTERVIEW** – Definition-Types of skills – Employer Expectations –Planning for the Interview – Interview Questions- Critical Interview Questions.

References:

3. Dr.S. Narayana Rajan, Dr. B. Rajasekaran, G. Venkadasalaphi, V. Vijuresh Nayaham and Herald M.Dhas, **Personality Development**, Publication Division, Manonmaniam Sundaranar University, Tirunelveli
4. Stephan P.Robbins, **Organisational Behaviour**, Tenth Edition, Prentice Hall of India Private Limited, New Delhi,2008
5. Jit S. Chandan, **Oragnisational Behaviour**, Third Edition, Vikas Publishing House Private Limited, 2008
6. Dr.K.K. Ramachandran and Dr.K.K. Karthick, **From Campus to Corporate**, Macmillan Publishers India Limited, New Delhi, 2010.

SCHEME OF EXAMINATIONS UNDER CBCS (2018 - 2021)

The medium of instruction in all UG and PG courses is English, and students must write the CIA Tests and Semester Examinations in English.

**DISTRIBUTION OF MARKS FOR CIA AND SEMESTER EXAMINATIONS
UNDERGRADUATE, CERTIFICATE & DIPLOMA COURSES**

SUBJECT	TOTAL MARKS	CIA TEST	SEMESTER EXAMINATION	PASSING MINIMUM		
				CIA TEST	SEM. EXAM.	OVER ALL
Theory	100	25	75	Nil	30	40
Practical (4 hrs)	100	40	60	Nil	24	40
Practical (2 hrs)	50	20	30	Nil	12	20
Project	100	Nil	Report - 60 marks Viva Voce - 40 marks	Nil	Nil	40

DIVISION OF MARKS FOR CIA TEST

SUBJECT	MARKS	ASSIGNMENT FOR UG / ASSIGNMENT OR SEMINAR FOR PG	RECORD NOTE	TOTAL MARKS
Theory	20	5	--	25
Practical (4 hrs)	30	--	10	40
Practical (2 hrs)	15	--	5	20

- The duration of each CIA Test is ONE hour and the Semester Examination is THREE hours.
- Three CIA tests of 20 marks each will be conducted and the average marks of the best two tests out of the three tests will be taken.
- The I test will be based on the first 1.5 units of the syllabus, the II test will be based on the next 1.5 units of the syllabus and the III test will be based on the next 1.5 units of the syllabus.
- Two assignments for Undergraduate, Certificate, Diploma and Advanced Diploma Courses and two assignments OR two seminars for Postgraduate Courses has to be submitted.
- The duration and the pattern of question paper for practical examination may be decided by the respective Boards of Studies. However, out of 60 marks in the semester practical examination, 10 marks may be allotted for record and 50 marks for practical.
- Two internal practical tests of 30/15 marks each will be conducted for science students in the respective semester and the average will be taken. The record marks allotted for the above practical are 10 and 5 respectively.

QUESTION PAPER PATTERN FOR CIA TEST (THEORY)

Duration: 1 Hr Maximum Marks: 20

Section	Question Type	No. of Questions & Marks	Marks
A	No Choice Answer should not exceed 75 words	2 Questions 2 marks each	2 x 2 = 4
B	Internal choice (Either or type) Answer should not exceed 200 words	2 Questions 4 marks each	2 x 4 = 8
C	Open Choice (Answer ANY ONE out of Two) Answer should not exceed 400 words	1 Question 8 marks	1 x 8 = 8
TOTAL			20 MARKS

QUESTION PAPER PATTERN FOR SEMESTER EXAMINATION (THEORY)

Duration: 3 Hrs

Maximum Marks: 75

Section	Question Type	No. of Questions & Marks	Marks
A	No Choice Answer should not exceed 75 words	10 Questions - 2 marks each (2 Questions from each unit)	10 x 2 = 20
B	Internal choice (Either or type) Answer should not exceed 200 words	5 Questions with internal choice. Each carries 5 marks (Two questions from each unit)	5 x 5 = 25
C	Open Choice (Answer ANY THREE out of FIVE) Answer should not exceed 400 words	3 Questions out of 5 - 10 marks each (1 Question from each unit)	3 x 10 = 30
TOTAL			75 MARKS