SADAKATHULLAH APPA COLLEGE
(AUTONOMOUS)

(Reaccredited by NAAC with 'A' GRADE and ISO 9001: 2008 certified)

Rahmath Nagar, Tirunelveli – 627 011

DEPT. OF COMPUTER SCIENCE

B.SC. (Computer Science)

UNITIZED SYLLABUS (CBCS)

FOR

(2011 - 2014)

(Applicable for students admitted in June 2011 and onwards)

(Updated as per the resolutions passed in the Academic Council Meeting held on 14-03-2013)

B.Sc. - COMPUTER SCIENCE (2011 - 2014)

COURSE STRUCTURE (CBCS)

I SEMESTER				II SEMESTER			
P	**COURSE**	**H/W**	**C**	**P**	**COURSE**	**H/W**	**C**
I	Tamil / Arabic	6	3	**I**	Tamil / Arabic	6	3
II	English	6	3	**II**	English	6	3
III	Core - 1	4	4	**III**	Core - 2	4	4
	Core Practical – I *	2	--		Core Practical – I *	2	3
	Allied - 1	4	4		Allied - 2	4	4
	Allied Practical – I *	2	--		Allied Practical – I *	2	2
IV	Skill Based Elective - 1	3	2	**IV**	Skill Based Elective - 2	3	2
	Social Value Education	3	2		Environmental Studies	3	2
TOTAL		**30**	**18**	**TOTAL**		**30**	**23**
III SEMESTER				**IV SEMESTER**			
III	Core - 3	6	5	**III**	Core - 6	6	5
	Core - 4	5	5		Core - 7	5	5
	Core - 5	5	4		Core - 8	5	4
	Core Practical – II *	2	--		Core Practical – II *	2	3
	Allied - 3	4	4		Allied - 4	4	4
	Allied Practical – II *	2	--		Allied Practical – II *	2	2
IV	Skill Based Elective - 3	3	2	**IV**	Skill Based Elective - 4	3	2
	Non Major Elective -1	3	2		Non Major Elective - 2	3	2
TOTAL		**30**	**22**	**TOTAL**		**30**	**27**
V SEMESTER				**VI SEMESTER**			
III	Core - 9	5	5	**III**	Core - 12	5	5
	Core - 10	5	4		Core - 13	5	4
	Core - 11	5	4		Core Elective - 2	4	4
	Core Elective - 1	4	4		Project	5	5
	Core Practical – III *	3	--		Core Practical – III *	3	4
	Core Practical –IV *	3	--		Core Practical - IV *	3	4
	Core Elective Practical *	2	--		Core Elective Practical *	2	2
IV	Skill Based Elective - 5	3	2	**IV**	Skill Based Elective - 6	3	2
TOTAL		**30**	**19**	**TOTAL**		**30**	**30**

* Practical – End of even semester

B.Sc. - COMPUTER SCIENCE (2011 - 2014)						
DISTRIBUTION OF CREDITS, NO. OF PAPERS & MARKS						
PART	**COURSE**	**SEM.**	**HOURS**	**CREDITS**	**PAPERS**	**MARKS**
I	Tamil / Arabic	I to II	12	6	2	200
II	English	I to II	12	6	2	200
III	Core + Practical	I to VI	85	72	13 + 4	1700
	C.Elective + Pract.+ Project	V & VI	17	15	2 + 1 + 1	400
	Allied + Practical	I to IV	24	20	4 + 2	600
IV	Skilled Based Elective	I to VI	18	12	6	600
	Non Major Elective	III & IV	6	4	2	200
	Social Value Education	I	3	2	1	100
	Environmental Studies	II	3	2	1	100
V	Extension Activities	I to IV	--	1	--	100
TOTAL			**180**	**140**	**41**	**4200**

SEMESTER WISE DISTRIBUTION OF HOURS

PART	**I**	**II**	**III**				**IV**			**TOT.**
SEM	**T/A**	**ENG**	**CORE**	**CE**	**PRO**	**AL**	**SBE**	**NME**	**SVE/ES**	
I	6	6	4 + 2	-	-	4 + 2	3	-	3	**30**
II	6	6	4 + 2	-	-	4 + 2	3	-	3	**30**
III	-	-	16 + 2	-	-	4 + 2	3	3	-	**30**
IV	-	-	16 + 2	-	-	4 + 2	3	3	-	**30**
V	-	-	15 + 6	4 + 2	-	-	3	-	-	**30**
VI	-	-	10 + 6	4 + 2	5	-	3	-	-	**30**
TOT	**12**	**12**	**85**	**12**	**5**	**24**	**18**	**6**	**6**	**180**

B.Sc. - COMPUTER SCIENCE (2011 - 2014)

TITLE OF THE PAPERS, CREDITS & MARKS

P	SUB	TITLE OF THE PAPER	S.CODE	H/W	C	MARKS		
						I	E	T
I SEMESTER								
I	TA 1	இக்காலத் தமிழ் **OR**	11ULTA11	6	3	25	75	100
	AR 1	Applied Grammar and Translation	11ULAR11					
II	EN 1	Practical Course in Listening & Speaking	11ULEN11A	6	3	40	60	100
III	C 1	C Language	11UCCS11	4	4	25	75	100
	CP I	Core Practical I (**C & C++)**	--	2	--	EXAM II SEM		
	A 1	Office Automation	11UACS11	4	4	25	75	100
	A P	Allied Practical I (**OA & Flash**)	--	2	--	EXAM II SEM		
IV	SBE 1	Discrete Mathematics	11SECS11	3	2	25	75	100
	SVE	Social Value Education	11USVE11	3	2	25	75	100
TOTAL				**30**	**18**	**165**	**435**	**600**
II SEMESTER								
I	TA 2	சமயத் தமிழ்	11ULTA21	6	3	25	75	100
	AR 2	Functional Arabic and Translation	11ULAR21					
II	EN 2	Prose, Poetry and Composition	11ULEN21A	6	3	25	75	100
III	C 2	C++ Programming	11UCCS21	4	4	25	75	100
	CP I	Core Practical I (**C & C++)**	11UCCS2P	2	3	40	60	100
	A 2	Flash	11UACS21	4	4	25	75	100
	A P I	Allied Practical I (**OA & Flash**)	11UACS2P	2	2	40	60	100
IV	SBE 2	Computer Oriented Numerical Methods	11SECS21	3	2	25	75	100
	ES	Environmental Studies	11UENS21	3	2	25	75	100
TOTAL				**30**	**23**	**230**	**570**	**800**
III SEMESTER								
III	C3	Java Programming	11UCCS31	6	5	25	75	100
	C4	Digital Principles & Applications	11UCCS32	5	5	25	75	100
	C5	Computer Graphics & Multimedia	11UCCS33	5	4	25	75	100
	CP II	Core Practical - II (**JAVA)**	--	2	--	EXAM IV SEM		
	A 3	Microprocessor	11UACS31	4	4	25	75	100
	A P II	Allied Practical - II (**MP & US)**	--	2	--	EXAM IV SEM		
IV	SBE 3	Internet and Web Design	11SECS31	3	2	25	75	100
	NME 1	Choose any one from the list	--	3	2	25	75	100
TOTAL				**30**	**22**	**150**	**450**	**600**

B.Sc. - COMPUTER SCIENCE (2011 - 2014)

TITLE OF THE PAPERS, CREDITS & MARKS

IV SEMESTER								
P	**SUB**	**TITLE OF THE PAPER**	**S.CODE**	**H/W**	**C**	**MARKS**		
						I	**E**	**T**
III	C6	Data Structures in C	11UCCS41	6	5	25	75	100
	C7	Active Server Pages	11UCCS42	5	5	25	75	100
	C 8	Operating Systems	11UCCS43	5	4	25	75	100
	CP II	Core Practical - II **(JAVA)**	11UCCS4P	2	3	40	60	100
	A 4	Unix and Shell Programming	11UACS41	4	4	25	75	100
	A P II	Allied Practical - II (**MP & US**)	11UACS4P	2	2	40	60	100
IV	SBE 4	Operation Research	11SECS41	3	2	25	75	100
	NME 2	Choose any one from the list	--	3	2	25	75	100
			TOTAL	**30**	**27**	**230**	**570**	**800**
V SEMESTER								
III	C 9	J2EE	11UCCS51	5	5	25	75	100
	C 10	Software Engineering	11UCCS52	5	4	25	75	100
	C 11	System Programming	11UCCS53	5	4	25	75	100
	CE 1	A) RDBMS with SQL Server **OR**	11UECS5A	4	4	25	75	100
		B) RDBMS with Oracle	11UECS5B					
	CP III	Core Practical - III (**J2EE**)	--	3	--	EXAM VI SEM		
	CP IV	Core Practical - IV (**VB.NET)**	--	3	--	EXAM VI SEM		
	CE P	Core Elective Practical (**O&C#)**	--	2	--	EXAM VI SEM		
IV	SBE 5	Mobile Communications	11SECS51	3	2	25	75	100
			TOTAL	**30**	**19**	**125**	**375**	**500**
VI SEMESTER								
III	C 12	Data Communication and Computer Networks	11UCCS61	5	5	25	75	100
	C 13	VB.NET	11UCCS62	5	4	25	75	100
	CE 2	A) C # Programming **OR**	11UECS6A	4	4	25	75	100
		B) PC Trouble shooting	11UECS6B					
	P	Project	11UPCS61	5	5	--	100	100
	CP III	Core Practical – III (**J2EE**)	11UCCS6P1	3	4	40	60	100
	CP IV	Core Practical - IV (**VB.NET)**	11UCCS6P2	3	4	40	60	100
	CE P	Core Elective Practical (**O&C#**)	11UECS6P	2	2	40	60	100
IV	SBE 6	Quantitative Aptitude	11SECS61	3	2	25	75	100
			TOTAL	**30**	**30**	**220**	**580**	**800**

ONE YEAR LANGUAGE COURSES (B.Sc. - CS, IT, BCA., B.COM., B.COM . (CA), BBA & BBM)							
SEM	**TITLE OF THE PAPER**	**S.CODE**	**H/W**	**C**	**MARKS**		
					I	**E**	**T**
PART I - TAMIL							
I	இக்காலத் தமிழ்	11ULTA11	6	3	25	75	100
II	சமயத் தமிழ்	11ULTA21	6	3	25	75	100
		TOTAL	**12**	**6**	**50**	**150**	**200**
PART I – ARABIC							
I	Applied Grammar and Translation	11ULAR11	6	3	25	75	100
II	Functional Arabic and Translation	11ULAR21	6	3	25	75	100
		TOTAL	**12**	**6**	**50**	**150**	**200**
PART II – ENGLISH							
I	Practical Course in Listening and Speaking	11ULEN11A	6	3	40	60	100
II	Prose, Poetry and Composition	11ULEN21A	6	3	25	75	100
		TOTAL	**12**	**6**	**65**	**135**	**200**

TITLE OF THE PAPERS, **CREDITS & MARKS**
PART I & II (2011 - 2014 ONWARDS)

DEPT. OF COMPUTER SCIENCE **CBCS SYLLABUS - B.Sc.- COMPUTER SCIENCE (2011 - 2014 ONWARDS)**								
PART III - CORE, CORE ELECTIVE & PROJECT (FOR B.Sc.- COMPUTER SCIENCE MAJOR)								
SEM	**P**	**TITLE OF THE PAPER**	**S.CODE**	**H/W**	**C**	**MARKS**		
						I	**E**	**T**
I	C1	C Language	11UCCS11	4	4	25	75	100
	CP	Core Practical - I (C & C++)	--	2	--	EXAM II SEM		
II	C2	C++ Programming	11UCCS21	4	4	25	75	100
	CP	Core Practical - I (C & C++)	11UCCS2P	2	3	40	60	100
III	C3	Java Programming	11UCCS31	6	5	25	75	100
	C4	Digital Principles & Applications	11UCCS32	5	5	25	75	100
	C5	Computer Graphics &Multimedia	11UCCS33	5	4	25	75	100
	CP	Core Practical - II (JAVA)	--	2	--	EXAM IV SEM		
IV	C6	Data Structures in C	11UCCS41	6	5	25	75	100
	C7	Active Server Pages	11UCCS42	5	5	25	75	100
	C8	Operating Systems	11UCCS43	5	4	25	75	100
	CP	Core Practical - II (JAVA)	11UCCS4P	2	3	40	60	100
V	C9	J2EE	11UCCS51	5	5	25	75	100
	C10	Software Engineering	11UCCS52	5	4	25	75	100
	C11	System Programming	11UCCS53	5	4	25	75	100
	CE1	A) RDBMS with SQL server **OR**	11UECS5A	4	4	25	75	100
		B) RDBMS with Oracle	11UECS5B					
	CP	Core Practical - III (J2EE)	--	3	--	EXAM VI SEM		
		Core Practical - IV (VB.NET)	--	3	--	EXAM VI SEM		
	CEP	Core Elective Practical (O&C#)	--	2	--	EXAM VI SEM		
VI	C12	Data Communication and Computer Networks	11UCCS61	5	5	25	75	100
	C13	VB.NET	11UCCS62	5	4	25	75	100
	CE2	A) C # Programming **OR**	11UECS6A	4	4	25	75	100
		B) PC Trouble shooting	11UECS6B					
	P	Project	11UPCS61	5	5	--	100	100
	CP	Core Practical - III (J2EE)	11UCCS6P1	3	4	40	60	100
		Core Practical - IV (VB.NET)	11UCCS6P2	3	4	40	60	100
	CEP	Core Elective Practical (O&C#)	11UECS6P	2	2	40	60	100
			TOTAL	**102**	**87**	**575**	**1525**	**2100**

DEPT. OF COMPUTER SCIENCE CBCS SYLLABUS (2011 - 2014 ONWARDS)								
PART III - ALLIED COMPUTER APPLICATIONS (FOR B.Sc.- COMPUTER SCIENCE MAJOR)								
SEM	**No.**	**TITLE OF THE PAPER**	**S.CODE**	**H/W**	**C**	**MARKS**		
						I	**E**	**T**
I	1	Office Automation	11UACS11	4	4	25	75	100
		Allied Practical - I (OA & Flash)	--	2	--	EXAM II SEM		
II	2	Flash	11UACS21	4	4	25	75	100
		Allied Practical - I (OA & Flash)	11UACS2P	2	2	40	60	100
III	3	Microprocessor	11UACS31	4	4	25	75	100
		Allied Practical - II (MP & US)	--	2	--	EXAM IV SEM		
IV	4	Unix and Shell Programming	11UACS41	4	4	25	75	100
		Allied Practical - II (MP & US)	11UACS4P	2	2	40	60	100
			TOTAL	**24**	**20**	**180**	**420**	**600**
PART IV - SKILL BASED ELECTIVE (FOR B.Sc. - COMPUTER SCIENCE MAJOR)								
I	1	Discrete Mathematics	11SECS11	3	2	25	75	100
II	2	Computer Oriented Numerical Methods	11SECS21	3	2	25	75	100
III	3	Internet and Web Design	11SECS31	3	2	25	75	100
IV	4	Operation Research	11SECS41	3	2	25	75	100
V	5	Mobile Communications	11SECS51	3	2	25	75	100
VI	6	Quantitative Aptitude	11SECS61	3	2	25	75	100
			TOTAL	**18**	**12**	**150**	**450**	**600**
PART IV - NON MAJOR ELECTIVE (FOR OTHER MAJORS)								
III	1	Office Automation	11NECS31	3	2	25	75	100
IV	2	C Programming	11NECS41	3	2	25	75	100
			TOTAL	**6**	**4**	**50**	**150**	**200**
PART IV - SVE & ES (FOR ALL MAJORS)								
I	1	Social Value Education	11USVE11	3	2	25	75	100
II	2	Environmental Studies	11UENS21	3	2	25	75	100
			TOTAL	**6**	**4**	**50**	**150**	**200**
PART - V								
I to IV		Extension Activities		**-**	**1**	**100**	**-**	**100**

PART III – CORE , CORE ELECTIVE & PROJECT

I SEMESTER			
C 1	**C PROGRAMMING**		**11UCCS11**
Hrs / Week : 4	**Hrs / Sem : 60**	**Hrs / Unit : 12**	**Credits : 4**

UNIT I

Character Set- C tokens- Keywords and Identifiers- Constants , Variables, data types- Declaration of variables- declaration of storage classes- Assigning values to the variables – defining symbolic constants- Declaring a variable as constant- Arithmetic operators- Relational operators- Logical operators- Assignment operators- Increment and decrement operators- Conditional operators- bitwise operators- Special operators- Arithmetic expressions- evaluation of expressions- precedence of Arithmetic operators-Type conversions in expressions- Mathematical functions.

UNIT II

Decision Making- If Statement- The If-else statement- Nesting of If statement- The else-if ladder- the switch statement- the ?: operator- the goto statement-Decision making and looping- the while statement – the do statement- the for statement- jumps in loops.

UNIT III

Arrays- one dimensional , two dimensional and multi dimensional arrays- Dynamic arrays- Character arrays and strings- Declaring and initializing string variables- Reading string from terminals- string handling functions- User defined functions- Category of functions- Nesting of functions- Recursive functions

UNIT IV

Structure and Unions- Accessing structure members- Arrays of structures- Arrays within structures- Unions- bit fields- pointers- pointer expressions- pointers and arrays- pointers and character strings- Array of pointers- pointers and structures.- preprocessor directives.

UNIT V

File management – Defining and opening a file- closing a file - Input/output operations in files- Random access files- command line arguments.

File management – Defining and opening a file- closing a file - Input/output operations in files- Random access files- command line arguments.

TEXT BOOK:

Computing Fundamentals and C Programming- E Balagurusamy-Tata McGraw- Hill Publishing Company

II SEMESTER			
C 2	C++ PROGRAMMING		11UCCS21
Hrs / Week : 4	Hrs / Sem : 60	Hrs / Unit : 12	Credits : 4

UNIT I - Classes and objects

Introduction- c structures revisited - specifying a class- defining member functions - a c++ program with class - Making an outside function inline - Nesting of member functions - Private member functions - Array within a class - Memory allocation for objects - Static data members - Static member functions - Array of objects - Object as function arguments - Friendly functions - returning objects.

UNIT II - Constructors and Destructors

Introduction – constructors - parameterized constructors - multiple constructor in a class - constructor with default arguments - dynamic initialization of objects - copy constructor - dynamic constructors - constructing two - dimensional arrays - const objects - Destructors.

UNIT III - Operator overloading

Introduction - defining operator overloading - overloading unary operators - overloading binary operators - overloading binary operators using friends - manipulation of strings using operators - rules for overloading operators – Type Conversions.

UNIT IV - Inheritance: Extending classes

Introduction - defining derived classes- single inheritance - making a private member inheritable - multilevel inheritance- multiple inheritance - hierarchical inheritance - hybrid inheritance - virtual base classes - abstract classes - constructors in derived classes- member classes: Nesting of classes.

UNIT V – Working with Files

Introduction - classes for file stream operations - opening and closing a file - detecting End-of-file - more about open(): file modes - file pointers and their manipulations- sequential input and output operations- updating a file: Random Access - error-handling during file operations - command-line arguments.

TEXT BOOKS:

Object –Oriented Programming with C++ By E.Balagurusamy, The McGraw-Hill, 4th Edition. Chapters: 5(except 5.17, 5.18, 5.19), 6, 7, 8, 11.

REFERENCE BOOKS:

Object – Oriented programming in Turbo C++ By Robert Lafore

I & II SEMESTERS		
CP I	**CORE PRACTICAL - I (Exam end of II Sem)**	**11UCCS2P**
Hrs / Week : 2	**Hrs / Sem : 30**	**Credits : 3**

C PROGRAMMING PRACTICAL

1. Solving a Quadratic Equation
2. Matrix Multiplication
3. Arranging Numbers in ascending order
4. Binary search using recursion
5. Sine and Cosine series
6. Fibonacci Series using Function
7. Read Integers up to 12 and store even and odd numbers in separate files.
8. Arrange names in alphabetical order
9. Pascal Triangle
10. Armstrong Numbers
11. Palindrome Checking
12. Swapping using pointers
13. Convert Binary to decimal
14. Arithmetic operations with Complex numbers
15. Employee pay bill with structures.

(AND)

C + + PROGRAMMING PRACTICAL

1. Program using arrays within a class.
2. Program using static class members.
3. Program using arrays of objects.
4. Program using objects as function arguments and function returning object
5. Program implementing overloaded constructors.
6. Program implementing Two-dimensional arrays.
7. Program implementing Destructor.
8. Program to overload operators.
9. Program to overloading binary operators using friend function.
10. Program implementing multiple, multilevel inheritances.
11. Program implementing constructors in derived class.
12. Program to create a file.
13. Program to work with multiple files.
14. Program using sequential I/O operations
15. Program to update a file by Random access.

III SEMESTER			
C 3	**JAVA PROGRAMMING**		**11UCCS31**
Hrs / Week : 6	**Hrs / Sem : 90**	**Hrs / Unit : 18**	**Credits : 5**

UNIT I

Overview of Java Language: Introduction – Simple Java Program – More Of Java – An Application With Two Classes – Java Program Structure – Java Tokens – Java Statements Installing And Configuring Java – Implementing A Java Program – Java Virtual Machine – Command Line Arguments – Programming Style. Constants, variables and data types : Constants - Variables - Data Types – Declaration of Variables – Giving Values To Variables - Scope Of Variables – Symbolic Constants Type Casting Getting Values Of Variables – Standard Default Values. Operators and Expressions : Operators - Expressions – Evaluation Of Expressions – Precedence Of Operators – Associativity – Type Conversions In Expressions – Mathematical Functions.

UNIT II

Decision making and branching: Decision Making With If Statement – Simple If Statement – If…Else Statement – Nesting Of If… Else Statements – Else…If Ladder – Switch Statement – The ?: Operator. Decision making and looping: While Statement – Do Statement – For Statement – Jumps In Loops – Labeled Loops. Classes, Objects and methods: Defining A Class – Fields Declaration – Methods Declaration – Creating Objects – Accessing Class Members – Constructors – Methods Of Overloading – Static Members – Nesting Of Methods.

UNIT III

INHERITANCE: Extending a Class – Overriding Methods – Final – Variables, Methods And Classes – Finalizer Methods – Abstract Methods And Classes – Methods With Varargs – Visibility Control. ARRAYS, STRINGS AND VECTORS: One-Dimensional Arrays – Creating An Array – Two-Dimensional Arrays – Strings – Vectors – Wrapper Classes – Enumerated Types. INTERFACES AND PACKAGES: Defining Interfaces – Extending Interfaces – Implementing Interfaces – Accessing Interface Variables. Java API Packages – Using System Packages – Naming Conventions – Creating Packages - Accessing A Package – Using A Package – Adding Classes To A Package – Hiding Classes – Static Import.

UNIT IV

Multithreaded programming: Creating Threads – Extending Thread Class – Stopping And Blocking A Thread – Life Cycle Of A Thread – Using Thread Methods – Thread Exceptions – Thread Priority – Synchronization – Implementing Runnable Interface – Inter-Thread Communication. Managing Errors and Exceptions: Types Of Errors – Exceptions – Syntax Of Exception Handling Code – Multiple Catch Statements – Finally Statement – Throwing Our Own Exceptions – Using Exceptions For Debugging. Applet Programming: How Applets Differ From Applications? – Preparing Applets – Building Applet Code – Applet Life Cycle – Creating An Executable Applet – Designing A Web Page – Applet Tag – Adding Applet To HTML File – Running Applet - More About Applet Tag - Passing Parameters To

Applets – Aligning The Display – Displaying Numerical Values - Getting Input From User – Event Handling.

UNIT V

Graphics Programming: The Graphics Class – Drawing Lines, Rectangles, Circles, Ellipses, Arcs, Polygons – Line Graphs – Using Control Loops in Applets – Drawing Bar Charts – Introducing to AWT Package And Swings. MANAGING INPUT/OUTPUT FILES IN JAVA: Concept Of Streams – Stream Classes – Other Useful I/O Classes – Creation Of Files – Reading / Writing Characters – Reading / Writing Bytes – Handling Primitive Data Types – Concatenating And Buffering Files – Random Access Files – Interactive Input And Output.

TEXT BOOK:

1. Programming with Java A Primer – E.Balagurusamy, McGraw Hill- Fourth Edition

REFERENCE BOOKS:

1. Java2 – Complete Reference, Tata McGraw Hill Publications
2. Thomaswu – An Introduction to Object Oriented Programming with Java, Tata McGraw Publications, 2001

III SEMESTER			
C 4	**DIGITAL PRINCIPLES & APPLICATIONS**		**11UCCS32**
Hrs / Week : 5	**Hrs / Sem : 75**	**Hrs / Unit : 15**	**Credits : 5**

UNIT I

Number system: Binary Addition and Subtraction – Binary Multiplication and Division Converting Decimal numbers to Binary- Negative numbers – Use of Complements to Negtive numbers – Binary number complements – BCD – Octal and Hexadeciaml number systems. .

UNIT II

Boolean algebra and Gate networks: Fundamental concepts of Boolean algebra – Logical multiplication – AND gates and OR gates – complementation and inverters – logic expressions evaluation – Basic laws of Boolean Algebra – De Morgan's theorem – Duality of boolean algebra - Boolean Algebra – Sum of Products(SOP) and Product of SUMs(POS) – Map Simplification using Karnaugh Maps – Don't care conditions – Design using NAND gates - Design using NOR gates – NAND-TO-AND and NOR-TO-OR gates.

UNIT III

Logic Design : Flip–Flop – Gated flip flops – Master- Slave flip flops – SR flip-flop – D flip-flop – JK flip flop - shift registers – Binary counters – BCD counters

UNIT IV

Arithmetic Design : Construction of the ALU - Integer representation – Half Adder – Full Adder – Parallel Binary Adder – BCD Adder – Shift Operation

UNIT V

Counters : Binary counter – Ripple counter - BCD counters – Synchronous and Asynchronous counters – shift counter – Ring counter – Up down counter

TEXT BOOKS:

1. Digital computer Fundamentals – Thomas C.Bartee, sixth Edition , McGraw – Hill Publications

UNIT I - Chapters 2.4 to ,2.12
UNIT II - Chapters 3.1 to 3.23
UNIT III - Chapters 4.1 to 4.9
UNIT IV - Chapters 5.1 to 5.5 , 5.10, 5.11,5.14
UNIT V - Chapters 4.8, 4.9

REFERENCE BOOKS:

1. Digital principles and Applications – Malvino and leach, TMH publications, fifth Editions.
2. Digital Electronics – V.K.puri, TMH Publication, 1997.

III SEMESTER			
C 5	**COMPUTER GRAPHICS & MULTIMEDIA**		**11UCCS33**
Hrs / Week : 5	**Hrs / Sem : 75**	**Hrs / Unit : 15**	**Credits : 4**

UNIT I

Introduction to graphics : Application of computer graphics –Raster and vector Graphics – Display devices – Graphical Input devices .

UNIT II

Graphics Programming : Graphics in c++ – Coordinate system – Plotting pixels – Line drawing – Circle drawing – Other shapes – Setting drawing colors – Setting background colors – Line styles – Fill styles – Displaying texts – Animations.

UNIT III

Raster Graphics Algorithms : Line drawing – Polynomial – DDA – Bresenham's algorithm – Circle drawing – polynomial – trigonometric – Bresenham's algorithm – Midpoint algorithm.

UNIT IV

Geometrical transformations – 2D and 3D graphics – matrix representation – Homogeneous coordinates – window to view port transformations – Line clipping – Polygon clipping.

UNIT V

Multimedia : Overview – Multimedia operating systems – system requirements and configurations for multimedia – compression technology for multimedia – Multimedia tools – Developing and delivering a multimedia project – Applications of multimedia.

TEXT BOOKS :

1 Computer Graphics and Multimedia – Donald Hearn & paurlin Baker – computer Graphics,
Prentice Hall of India pvt Ltd.

2 Multimedia by Tay Vaughan

REFERENCE BOOKS:

1 Interactive computer Graphics –Neumann and Sproull McGrew Hill publications.

IV SEMESTER			
C 6	**DATA STRUCTURES IN C**		**11UCCS41**
Hrs / Week : 6	**Hrs / Sem : 90**	**Hrs / Unit : 18**	**Credits : 5**

UNIT I

Arrays and Structures : Arrays – Dynamically Allocated Arrays – Structures and Unions – Polynomials – Sparse Matrices : The abstract data type, sparse matrix representation, transpose a sparse matrix – Representation of Multidimensional Arrays – Strings.

UNIT II

Stacks And Queues : Stacks – Abstract data type stack – add, delete elements from stack - Queues – Abstract data type queue – add, delete elements from queue - Circular Queues - Evaluation of expressions - Evaluating postfix expressions – infix to postfix - Multiple stacks and Queues.

UNIT III

Linked Lists : Singly linked lists and Chains – Representing chains in C – create a two-node list – insert an element in a list – delete an element from a list – display the elements in a list – add and delete an element using linked stack and queue –polynomial representation using linked list – adding polynomials – doubly linked list - add and delete an element using doubly linked list.

UNIT IV

Trees : Terminology – Representation of trees – binary trees : abstract data type – properties of binary trees – Binary tree representations – binary tree traversals – inorder, preorder and postorder traversal – additional binary tree operations : copying and testing equality.

UNIT V

Graphs : Abstract data type – Definitions – Graph Representations – Adjacency Matrix, Adjacency Lists, Adjacency Multilists – Elementary Graph operations – Depth First Search, Breadth First Search, Connected Components, Spanning trees – Minimum cost spanning trees – Kruskal's Algorithm, Prim's Algorithm – Shortest path and transitive closure – single source all destinations, All pairs shortest paths, transitive closure.

TEXT BOOK :

"Fundamentals of Data Structures in C " – Horowitz, Sahni and Anderson-Freed , Second edition, University Press (India) private limited.

REFERENCE BOOK :

Ellis Horowitz and Sartaj Sahni, " Fundamentals of Data Structures " Galgotia Publications.

IV SEMESTER			
C 7	**ACTIVE SERVER PAGES**		**11UCCS42**
Hrs / Week : 5	**Hrs / Sem : 75**	**Hrs / Unit : 15**	**Credits : 5**

UNIT I

Introduction : What is ASP?-ASP Model-The Process of Serving an Active Server 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 MsgBox Function.

UNIT III

Working with HTML forms : 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 :

Ivan Bayross, 'Practical ASP', BBP Publications

IV SEMESTER			
C 8	**OPERATING SYSTEMS**		**11UCCS43**
Hrs / Week : 5	**Hrs / Sem : 75**	**Hrs / Unit : 15**	**Credits : 4**

UNIT I

Introduction: Evolution of Operating Systems- Types of Operating Systems- Different Views of the Operating System- The Journey of a Command Execution- Design and Implementation of Operating Systems.

UNIT II

Processes: The Process Concept- Systems Programmer's View of processes- The Operating System's view of processes- Operating System Services for process management- Scheduling- Scheduling Algorithms- Performance Evaluation.

UNIT III

Interprocess Synchronization : The need for Interprocess Synchronization- Mutual Exclusion- Semaphores- Classical problems in concurrent programming. **Interprocess Communication And Synchronization :** Critical region and conditional critical region- Monitors- Messages- - Deadlocks.

UNIT IV

Memory Management - Contiguous Allocation

Single-Process Monitor- Partitioned Memory Allocation- Static Partitioned Memory Allocation-Dynamic Partitioned Memory Allocation -Segmentation.

UNIT V

Memory Management Non contiguous Allocation : Paging- Virtual Memory.

File Security, Protection : Security Threats and Goals- Penetration Attempts- Security policies and mechanisms- Authentication- Protection and Access Control- Formal Models of Protection- Cryptography—Warms and Viruses.

TEXT BOOK:

Operating Systems – Milan Milenkovic – Tata Mcgraw-Hill Edition – SecondEdition.

REFERENCE BOOKS :

1 Operating System Concepts- Silberschatz and PeterB. Galvin Addison Wesley Publishers –Sixth Edition.
2 Systems Programming And Operating Systems - Dhamdhere- Tata Mcgraw- Hill Edition.

III & IV SEMESTERS		
CP II	**CORE PRACTICAL - II (Exam end of IV Sem)**	**11UCCS4P**
Hrs / Week : 2	**Hrs / Sem : 30**	**Credits : 3**

JAVA PROGRAMMING PRACTICAL

1 Program using if…else statement
2 Program using nested if…else statement
3 Program using else…if ladder
4 Program using switch statement
5 Program using while loop
6 Program using do…while loop
7 Program using for loop
8 Program using nested loops
9 Program using classes and objects
10 Program using Multiple Constructors
11 Program using simple and multilevel inheritances
12 Program using methods overriding
13 Program using abstract class and methods
14 Program using one-dimensional arrays
15 Program using Two-dimensional arrays
16 Program using String arrays
17 Program using Vector class
18 Program using Wrapper classes
19 Program implementing interfaces
20 Program using package
21 Program to create threads using Thread class
22 Program using Thread methods
23 Program using priority in threads
24 Program using nested try…catch
25 Program throwing your own exception
26 Program using interactive input to an Applet
27 Program using event handling
28 Program to draw various shapes
29 Program to draw charts
30 Program copying characters from one file to another.

V SEMESTER			
C 9	**J2EE**		**11UCCS51**
Hrs / Week : 5	**Hrs / Sem : 75**	**Hrs / Unit : 15**	**Credits : 5**

UNIT I

The java2 Enterprise Architecture – Why would Anyone need the Enterprise Edition?- The java2 Enterprise Edition (J2EE) Architecture – java 2 Enterprise Implementation Architectures- Essential Concepts – The world wide web context – Program Units and Files in J2EE.

UNIT II

Java Database Connectivity (JDBC)- What is JDBC? – The java.sql Package Structured Query Language (SQL) – Using JDBC – The Practice Databases – The Process of Building a JDBC Application

UNIT III

The Essentials of Java Server Pages (JSP)- Introduction to java server pages technology – Using Java Server Pages – Java Server Page Objects – Implicit JSP Objects- The out and request Objects

UNIT IV

The Architecture of Java Server Pages (JSP) – The Elements of the JSP- Language Set – JSP action elements – JSP Directives – Java Servlet Essentials – Java Servlet – The Generic Server Lifecycle – Servlet Packages, Classes, Interfaces and Methods

UNIT V

Java Servlet Construction Time – The General Servlet Development Process- A Servlet that Generates HTML- Handling Forms with Servlets – Enterprise Java Bean (EJB) Essentials – What is an Enterprise Java Bean?- Session Beans – Entity Beans Servers, Containers, and Beans- Services Required by Enterprise Java Beans – The Session bean – The Lifecycle of a Session Bean – The process of Building a Stateless Session Bean.

TEXT BOOK:

1. Enterprise Java Beans by Richard Monson – Haifel (O'Really)
2. Java Server Page by Hans Bergsten, O'Really
3. Java Servlet programming 2nd Edition – panny coward, James Duncan Davidson O'Really

V SEMESTER			
C10	**SOFTWARE ENGINEERING**		**11UCCS52**
Hrs / Week : 5	**Hrs / Sem : 75**	**Hrs / Unit : 15**	**Credits : 4**

UNIT I

Introduction - What is Software - What is Software Engineering – Software Process – software Process model – software engineering methods. Emergent system properties - systems engineering – system requirements – system design – system modelling – sub-system development – system integration –system evolution – system decommissioning – system procurement. Software processes: Software Process models: the waterfall model – Evolutionary development – Spiral development – CASE

UNIT II

Project Management - Management activities – Project Planning – Milestones and Deliverables - Project Scheduling – Bar charts and activity networks. Software requirement : Functional and non-functional requirements – Domain requirements - User requirements – System requirements – Structured language specification - Software Requirements Document(SRS) .

UNIT III

System Models – Context models – Behavioural models – Data-flow models – State machine models – Data models – Object models. Architectural Design - System Organisation - Repository model – Client-server model – Layered model – Modular decomposition Object oriented decomposition – Function oriented pipelining - Control Styles – Centralised control – Event driven system – Reference Architecture.

UNIT IV

Object oriented design: Object and object classes – An object oriented design process – design evolution. Real time software - System design – Real-time operating systems – Monitoring and control systems – Data Acquisition systems. User Interface design: User Interface design issues – User Interface design process - User Interface prototyping - interface evaluation .

UNIT V

Verification and Validation – Software inspections. Clean – room software development. Software testing: System testing – Integration testing – Release testing - Performance testing –Component testing – Interface Testing. Software cost estimation: Algorithmic cost modeling – The COCOMO model. Quality management: Process and product quality – Software measurement and metric.

TEXT BOOK :

1. Software Engineering , IAN SOMMERVILLE , 8th Edition ,Pearson Education Asia.
   UNIT I - Chapters 1.1,2.1,2.2,4.1,4.2,4.3,4.5
   UNIT II - Chapters 5,6.1,6.2,6.3,6.5
   UNIT III – Chapters 8.1,8.2,8.3,8.4,11
   UNIT IV – Chapters 14,15,16.1,16.2,16.4,16.5
   UNIT V - 22 , 23.1, 23.2 , 26.1 , 26.2, 26.3 , 27.1,27.3,27.4,27.5

REFERENCE BOOKS:

Software Engineering Theory and Practices, SHARI LAWRENCE PFLEEGER, 6thEdition, Pearson Education Asia.

V SEMESTER			
C 11	**SYSTEM PROGRAMMING**		**11UCCS53**
Hrs / Week : 5	**Hrs / Sem : 75**	**Hrs / Unit : 15**	**Credits : 4**

RDBMS with SQL Server

Introduction – System software and Machine Architecture: The simplified Instructional Computer (SIC): SIC Machine Architecture – SIC/XE Machine Architecture – SIC Programming Examples – Traditional CISC machines: VAX Architecture – Pentium Pro Architecture – RISC machines: UltraSPARC Architecture – PowerPC Architecture - Cray T3E Architecture.

UNIT II

Basic assembler functions: A Simple SIC Assembler – Assembler algorithm and data structures – Machine Dependent Assembler features: Instruction Formats and – Addressing modes - Program Relocation - Machine Independent Assembler features: Literals – Symbol-Defining statements – Expressions – Program Blocks – control Sections and Program Linking– Assembler Design Options: One-Pass Assembles – Multi-Pass Assemblers.

UNIT III

Basic loader functions: Design of an Absolute Loader – A simple Bootstrap Loader – Machine Dependent Loader features: Relocation – Program Linking – Algorithm and data Structures – Machine Independent Loader features: Automatic Library search – Loader options – Loader Design Options: Linkage editors – Dynamic Linking – Bootstrap Loaders.

UNIT IV

Basic Macro Processor Functions: Macro Definition and Expansion – Algorithm and Data Structures - Machine Independent Macro Processor features: Concatenation of Macro Parameters – Generation of unique Labels – conditional Macro Expansion – Keyword Macro Parameters – Macro Processor Design options: Recursive Macro Expansion – General-purpose Macro Processors – Macro processing within Language Translators.

UNIT V

Other System Software: Database Management Systems – Basic Concepts of a DBMS – Levels of Data Description – Use of a DBMS.
Text Editors – Overview of the Editing Process – User interface – Editor structure.
Interactive Debugging Systems – Debugging Functions and Capabilities – Relationship with other parts of the system – User – interface Criteria.

TEXT BOOK:

1 Leland L. Beck,"System Software – An introduction to System Programming", Third edition, Pearson Education Asia, 2000.
Chapters: 1, 2(Except 2.5), 3(Except 3.5), 4(Except 4.4), and 5(5.4 and 5.5).

REFERENCE BOOKS:

1. John J. Donovan "Systems Programming", Tata McGraw Hill Edition
2. D. M. Dhamdhere "Systems Programming and Operating Systems ", Tata McGraw Hill, Second Revised Edition.

V SEMESTER			
CE 1A	**RDBMS with SQL Server**		**11UECS5A**
Hrs / Week : 4	**Hrs / Sem : 60**	**Hrs / Unit : 12**	**Credits : 4**

UNIT I

The Evolution of Database systems – Architecture of a DBMS – the Future of Database Systems

UNIT II

Database Models – The Relational Data Model – Basics of the Relational model – E-R-Diagrams to Relational designs Functional Dependencies – Definition of Functional Dependency – Keys of Relations – Relations – Super Keys – Discovering keys for Relations – Rules about Functional Dependencies. 9

UNIT III

Design of Relational Database – anomalies – Decomposing Relations – Boyce-Codd Normal Form – Decomposition into BCNF – projecting Functional Dependencies – Third Normal Form – Multi valued Dependencies – Definition of Multi valued Dependencies – Fourth Normal Form – Decomposition into Fourth Normal Form – Relationship Among Normal Forms.

UNIT IV

Operations in the Relational Model – Set Operations of Relations – Projection – Selection – Cartesian Product – Natural joins – Intersection – Union – Differences – Product – Joins. Constraints on Relational – Referential Integrity Constraints – Other Extension to the Relations Model

UNIT V

Database Language SQL – Simple Queries in SQL – Queries involving more than one Relation – Sub Queries – Duplicates – aggregation – Database modification – Defining a Relation Scheme in SQL – View Definition – Constraints in SQL – Keys in SQL – Referential Integrity and Foreign Keys. Systems Aspects of SQL – SQL in Programming Environment – Security and User Authorization in SQL2.

TEXT BOOK:

A First course in Database Systems – Jeffrey D. Ullman and Jennifer Widom Addison Wesley Longman Pte. Ltd., Delhi – 2001.

REFERENCE BOOKS:

1. Fundamentals of Database Systems – Thrid Edition – Ramez Elmasri – Shamkant B. Navathe – Addison Wesley Longman Pte. Ltc – Delhi 2001.
2. Database Management Systems – Alexis leon and Mathews Leon – Vikas Publishing House Pvt. Ltd – New Delhi – 2002.

V SEMESTER			
CE 1B	**RDBMS with ORACLE**		**11UECS5B**
Hrs / Week : 4	**Hrs / Sem : 60**	**Hrs / Unit : 12**	**Credits : 4**

UNIT I

Introduction: Database-System Applications – Purpose of Database Systems – View of Data - Database Languages - Relational Databases – Data base design - Relational Model: Structure of Relational Databases – Fundamental Relational - Algebra Operations: The Select, Project, Union, Set-Difference, Cartesian-Product, Rename Operations – Formal Definition of the Relational Algebra.

UNIT II

Additional Relational-Algebra Operations - Extended Relational-Algebra Operations – Null Values - Modification of the Database - SQL: Background – Data Definition: Basic Domain Types – Basic Schema Definition in SQL - Basic Structure of SQL Queries - Set Operations: Union, Intersect, Except operation.

UNIT III

Aggregate Functions – Null Values – Nested Sub queries – Complex Queries – Views – Modification of the Database: Deletion, Insertion, Updates, Update of a view, Transactions - Advanced SQL: SQL Data Types and Schemas – Integrity Constraints: Not null, Unique, Check, Referential Integrity, Assertions – Authorization.

UNIT IV

SQL * PLUS : Menus – Commands – Editing the command line – The Describe, Column, Save, Get, Start, Edit commands. BASIC SQL : Oracle and SQL – SQL Language Basics – Select command – Oracle 8 Data types – Expressions and Operators – Functions, Insert, Update, Delete command, Transactions.

UNIT V

Creating and Maintaining Tables : Deleting a Table – Index Organized – Modifying Tables : The Alter Table command, Deleting a Table, Index-organized Tables - Indexes : Create, Change, Recreate, Eliminate an Index – Sequence : Create, Delete – Change Sequences – Views : Create, Select, Delete, Views – PL/SQL blocks control structure, programs, stored procedures and functions : Create, Execute, Delete a stored procedure – Functions : Create, Execute a function.

TEXT BOOK:

1. Database System Concepts 5th Edition - Abraham Silberschatz, Henry F.Korth, S.Sudarshan - McGraw-Hill Publication.Chapter 1.1 to 1.6, 2.1 to 2.6,3.1 to 3.10,4.1 to 4.3.
2. Learn Oracle 8i - Jose. A. Ramalho – B.P.B Publications. Chapter 6, 7, 9 to 12, 15 and 17.

REFERENCE BOOK:

Database system using oracle – Nilesh Shah – Prentice-Hall of India Private Limited.

VI SEMESTER			
C12	DATA COMMUNICATIONS AND NETWORKING		11UCCS61
Hrs / Week : 5	Hrs / Sem : 75	Hrs / Unit : 15	Credits : 5

UNIT I

Introduction - Data Communication – Networks – Protocols and Standards – Standards Organizations .Basic Concepts : Line Configuration – Topology – Transmission Mode – Categories of Networks – Internetworks.

The OSI Model : The model – Functions of the layers (Physical,Data Link, Network,Transport , Session,Presentation and Application Layers)

UNIT II

Transmission Media Guided media (Twisted – Pair Cable, Coaxial Cable,Optical Fiber) – Unguided media (Radio frequency Allocation,propagation of Radio Waves,Terrestrial Microwave,Satellite Communicaation, Cellular Telephony)

UNIT III

DataLink Control: Line Discipline – Flow Control – Error Control. Network Layer Function : Circuit Switching – Packet Switching – Message Switching – Network Layer(Connection – Oriented and Connectionless services)

UNIT IV

LAN : Project 802, Ethernet – IEEE 802.3. CSMA/CD – Implementation -Token Bus – Token Ring – FDDI MAN :IEEE 802.6(DQDB).

UNIT V

Transport Layer: Duties of the transport Layer .Session Layer : Session and Transport Interaction – Synchronization Points – Session Protocol Data Unit - Presentation Layer: Translation – Encryption /Decryption – Authentication Data Compression Application Layer :Message Handling system – File Transfer, Access and Management ,Virtual Terminal,Directory Services,Common management Information Protocol.

TEXT BOOK:

"Introduction to Data communication and networking " – Behrouz Forouzan - Tata Mcgraw Hill 3rd Edition ,2006.

UNIT I - Chapters 1,2,3
UNIT II - Chapters 7.1,7.2
UNIT III – Chapters 10.1,10.2,10.3,14.1,14.2,14.3
UNIT IV – Chapters 12.1,12.2,12.3,12.4,12.5,12.6,13.1
UNIT V - Chapters 22.1 ,23

REFERENCE BOOKS:

"Computer Networks" – Andrew S. Tanenbaum,4th Edition,PHI.

VI SEMESTER			
C 13	**VB.NET**		**11UCCS62**
Hrs / Week : 5	**Hrs / Sem : 75**	**Hrs / Unit : 15**	**Credits : 4**

UNIT I

Essential Visual Basic .NET Operators-Conditional statements-loops-Procedure-Scope-Exception Handling

UNIT II

VB.NET controls - Text Box, Buttons, Labels, Checks Boxes, radio Buttons, List Boxes, Combo Boxes Picture Boxes

Scrollbars, Timer, Menus, Built-in Dialogs, Image List, Toolbars, Status Bar and Progress bars, Exception - type of errors, structured and unstructured exception

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

UNIT IV

Web Application in VB.NET - Introduction to Web form, Page directive, all validation controls, Page redirection Concept of web services, Create a small web services

UNIT V

ADO.Net - Database : Connections, Data adapters, and datasets, Data Reader, Multiple Table Connection, Data binding with controls like Text Boxes, List Boxes, Data grid etc. Navigating data source, Data Grid View.

TEXT BOOK:

Visual Basic.NET Programming Black Book – Steven Holzner.

Reference Books :-

Developing Windows-Based Applications With Microsoft Visual Basic.Net and Visual C# .Net By Mattjew Stoecker

VI SEMESTER			
CE 2 A	**C # PROGRAMMING**		**11UECS6A**
Hrs / Week : 4	**Hrs / Sem : 60**	**Hrs / Unit : 12**	**Credits : 4**

UNIT I

Overview of C# : Introduction – simple C# program - Namespaces – comments – command line arguments – mathematical functions – Program structure – Literals – variables – data types – value types –reference types - scope of variables - boxing and unboxing - Operators and Expressions – conditional operators – bitwise operators – special operators – precedence of operators – type conversions

UNIT II

Decision making and branching – simple if – if..else – else if ladder – switch statement – conditional operator - decision making and looping – for, while, do, foreach statements – Jumps in loops . Handling arrays – one dimensional arrays – creating an array – two dimensional arrays – variable size arrays – System.Array Class – ArrayList Class – Manipulating Strings.

UNIT III

Methods in C# - declaring methods – Main method – invoking methods – nesting of methods – method parameters – pass by value – pass by reference – output parameters – variable argument lists – Structures and enumerations.

UNIT IV

Classes and Objects – member access modifiers – constructors – overloading constructors – destructors – This reference – Constant and Read only members – properties - Indexers – Inheritance and polymorphism – Containment inheritance – visibility Control – overloading methods - overriding methods – hiding methods - abstract classes – sealed classes – polymorphism.

UNIT V

Interfaces – multiple inheritance - Operator overloading – Delegate Declaration and Instantiation - Events – Managing Errors and Exceptions – Throwing our own exceptions – nested try blocks – Checked and Unchecked Operators.

TEXT BOOK :

Programming in C# - E. Balagurusamy– Third Edition - Tata McGraw Hill Education Ltd.

REFERENCE BOOK:

C# Complete Reference – Herbert Schildt – Tata McGraw Hill Education Ltd.

VI SEMESTER			
CE2B	**PC TROUBLE SHOOTING**		**11UECS6B**
Hrs / Week : 4	**Hrs / Sem : 60**	**Hrs / Unit : 12**	**Credits : 4**

UNIT I

The basic microcomputers system - Introduction - the microprocessor subsystem- i/o subsystem-system configuration-inside the IBM PC system-the bus subsystem-memory subsystem.

UNIT II

Memory peripherals-magnetic record fundamentals –digital magnetic recording-the floppy disk subsystem-FDD-FDD adjustments and alignments-cleaning and preventive maintenance-winchester disk system

UNIT III

Peripheral devices-introduction-keyboards-video displays-the CRT deflection-video amplifier-color video-IBM PC display adapters-printers-interface standards-modem and acoustic couplers.

UNIT IV

Setup servicing and customer relations – pc xt configuration- switch settings- cables and connections-operations-power on self test-preventive maintenance-diagnostic and trouble shooting –introduction – starting the advance diagnostics- the home menu-diagnostics-test submenu-error code

UNIT V

Introduction to ps/2s system processor-micro channel-test equipments-logic probes-pulsars-meters-logic analysers—oscilloscopes-PROM burners-power line monitor

TEXT BOOK :

Microcomputer servicing - Staurt Asser

VI SEMESTER		
P	**PROJECT**	**11UPCS61**
Hrs / Week : 5	**Hrs / Sem : 75**	**Credits : 5**

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, analyse 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 five 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 **80% for the presentation of project and 20% for viva-voce.**

V & VI SEMESTERS		
CP III	**CORE PRACTICAL - III (Exam end of VI Sem)**	**11UCCS6P1**
Hrs / Week : 3	**Hrs / Sem : 45**	**Credits : 4**

J2EE PRACTICAL

1. Write a java code creates a connection to the access database on a harddisk using DSN named Bsc and display it message “Connected Success” if the connection is created.

2. Create a simple table (ACCESS) using the package Java. Sql. Package.

3. Create a table in the following information Name, Subject, Qualification, Percentage in an Access database using the class Java.Sql.Package.

4. Simply fetch the table information using JDBC.

5. Write a java code to insert the following data into the table “Success” which is created in Access.

Code	Names	Subject
1	One	100
2	Two	99
3	Three	99

6. Create a Servlet an simply display the message “Best Wishes to complete B.Sc(IT) Course Sucessfully” using Hyperlink.
7. Create a simple servlet using the getParameter() method and display the output(From you input.html) in another form.
8. Write a servlet code to change the explorere background color.
9. Create the web script using the servlet code with your own idea

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 program using Request and Out Objects in JSP.
13. Pass the information to next form using the Methods GET, POST in servlets.

Program to update a particular Record Using JDBC.

V & VI SEMESTERS		
CP IV	**CORE PRACTICAL - IV (Exam end of VI Sem)**	**11UCCS6P2**
Hrs / Week : 3	**Hrs / Sem : 45**	**Credits : 4**

VISUAL BASIC.NET PROGRAMMING PRACTICAL

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. Also find date of death (assume average age of 72).

2. Create an application that ask you "how many nos you would like to enter = ". Enter all the nos by Input box / text box (dynamic generate) when you click on 'result' button following things should be display. List box 1:original nos. List box 2: nos in ascending. List box 3: nos in descending. Label: the sum of all entered nos Label: the average of all entered nos.

3. Create a multi line textbox that can accept any type of character.
On pressing a button 'COUNT' display total alphabets, numbers, and Special symbols In text.

4. Write a program Picture animation using image lists

5. Write a program using menus and build in dialogs

6. Write a program using exception handling

7. Write a program that makes use of functions in VB.NET

8. Write a program deploying polymorphism using VB.NET

9. Write a program developing inheritance using vb.net

10. Create a web application having.
Login form: create login from with login, cancel, change password form.
Change password: use name, password, confirm password.
Check password change facility working or not successfully.

11. Create a web application using validation control
12. Write a program using page redirection concept
13. Create student information system.
Table: Student (grno, stud_name, dob, age, lastschool, fname, address, city, phone)
Make a form to add , delete and update a record. Also give facility for navigation of record.
14. Create a program using data grid control
15. Create a program using data form wizard

V & VI SEMESTERS		
CEP	CORE ELECTIVE PRACTICAL (Exam end of VI Sem)	11UECS6P
Hrs / Week : 2	Hrs / Sem : 30	Credits : 2

ELECTIVE : 1A - RDBMS with SQL server PRACTICAL (MySQL)

A) An Enterprise wishes to maintain the details about his suppliers and other corresponding details. For that he uses the following details.

Suppliers (sid: Integer, sname: string, address: string)
Parts (pid: Integer, pname: string, color: string)
Catalog (sid: integer, pid: integer, cost: real)
The catalog relation lists the prices charged for parts by suppliers.

Write the following queries in SQL:

1. Find the pnames of parts for which there is some supplier.
2. Find the snames of suppliers who supply every part.
3. Find the snames of supplier who supply every red part.
4. Find the pnames of parts supplied by London Supplier abd by no one else.
5. Find the sid's of suppliers who charge more for some part than the average cost of that part.
6. For each part, find the sname of the supplier who charges the most for that part.
7. Find the sid's of suppliers who supply only red parts.
8. Find the sid's of suppliers who supply a red and a green part.
9. Find the sid's of suppliers who supply a red or green part.
10. Find the total amount has to pay for that suppler by part located from London.

An organisation wishes to maintain the status about the working hours made by his employees. For that he uses the following tables.

Emp (eid: integer, ename: string, age: integer, salary: real)
Works (eid: integer, did: integer, pct_time: integer)
Dept (did: integer, budget: real, managerid: integer)

B) An employee can work in more than one department; the pct_time field of the works relation shows the percentage of time that a given employee works in a given department.Resolve the following queries.

1. Print the names and ages of each employee who works in both Hardware and Software departments.90 hrs (3 hrs/ week)
2. For each department with more than 20 full time equivalent employees (i.e., where the part-time and full-time employees add up to at least that many full-time employees), print the did's together with the number of employees that work in that department.
3. Print the name of each employee whose salary exceeds the budget of all of the departments that he or she work in.
4. Find the managerid's of managers who manage only departments with budgets greater than 1,000,000.
5. Find the enames of managers who manage the departments with largest budget.
6. If a manager manages more than one department, he or she controls the sum of all the budgets for those departments. Find the managerid's of managers who control more than 5,000,000.
7. Find the managerid's of managers who control the highest amount.
8. Find the average manager salary.

(OR)

ELECTIVE : 1B - RDBMS WITH ORACLE PRACTICAL

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 Data functions.
8. Retrieving row with Group functions and HAVING.
9. Joining Tables (Inner and Outer)
10. Simple PL/SQL Programs.
11. PL/SQL programs with control structures.
12. PL/SQL programs with Cursors.
13. PL/SQL programs with Exception Handling.
14. Working with Triggers

(AND)

ELECTIVE : 2A - C # PROGRAMMING PRACTICAL

1. Write a program to prepare electricity bill using switch statement.
2. Write a program to display all prime numbers between two given numbers.
3. Write a program to display a given number in words – use foreach statement.
4. Write a program to find n factorial using recursion.
5. Write a program to implement constructor overloading.
6. Write a program to sort n numbers using method.
7. Write a program to perform matrix operations using object.
8. Write a program to implement user defined Exception.
9. Write a program to sort names using ArrayList class
10. Write a program to implement inheritance.
11. Write a program to implement operator overloading.
12. Write a program to implement polymorphism.
13. Write a program to implement interfaces.
14. Write a program to implement overriding methods and hiding methods
15. Write a program to copy contents of a file to two different destinations.

(OR)

ELECTIVE : 2B - PC TROUBLE SHOOTING

1. Partitioning and Formatting Hard Disk
2. Configure your personal computer
3. Testing Monitor and Keyboard
4. Testing Serial Port and Parallel Port
5. Testing of Computer SMPS
6. FDD fault finding
7. HDD , CD ROM fault finding
8. Identifying PC problem
9. Installing Antivirus software
10. Install the printer driver and self test
11. Connect more than one hard disk
12. Install MS OFFICE 2007
13. Clearing CMOS password

PART III - ALLIED COMPUTER APPLICATIONS

I SEMESTER			
A 1	OFFICE AUTOMATION		11UACS11
Hrs / Week : 4	Hrs / Sem : 60	Hrs / Unit : 12	Credits : 4

UNIT I

Documentation Using MS-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 MS-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 MS-Excel : Introduction to MS-Excel, Creating & Editing Worksheet, Formatting and Essential Operations, Formulas and Functions, Charts,

UNIT IV

Advance features of MS-Excel : Pivot table & Pivot Chart, Linking and Consolidation, Database Management using Excel- Sorting, Filtering, Table, Validation, Goal Seek, and Scenario.

UNIT V

Presentation using MS-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.

TEXT BOOK :

Microsoft Office – Complete Reference – BPB Publication

REFERENCE BOOK :

Learn Microsoft Office – Russell A. Stultz – BPB Publication.

II SEMESTER			
A 2	**FLASH**		**11UACS21**
Hrs / Week : 4	**Hrs / Sem : 60**	**Hrs / Unit : 12**	**Credits : 4**

UNIT I

Flash files and flash player- Introducing the flash workspace- The panels- Component inspector panel- Flash concepts- Creating a new Flash document- Movie properties- Architecture of a Flash document- Scenes in Flash- Layers in Flash- Concept of frames- Saving a Flash document- Testing a Flash movie- Publishing a Flash Movie.

UNIT II

Working with graphics- understanding vector and bitmap graphics- Drawing models- Selecting objects- Creating graphics- Fills and outlines- working with colors- The color palette- Using the Color Swatches Panel – Using the color mixer panel.

UNIT III

Transforming and aligning graphics- Grouping the objects- Understanding the stacking order of the objects- Breaking apart groups and objects- Transforming objects- Aligning objects- Working with texts- Understanding the font display- Modifying the text attributes- Using the Check spelling feature- Transforming text.

UNIT IV

Symbols – Creating symbols- Creating a button- Editing symbols- Modifying the instance of a symbol- Library- Using the library- Using the common libraries- Opening the library of other documents- Creating custom libraries- Animation- working with Time line effects- Using the Explode Time Line effect- Using the Frame by Frame animation technique.

UNIT V

Tweening- Using Motion Tweening to create animations- Using Shape Tweening to create animation- Creating an animation with motion Tweening and shape tweening- Creating masking effects- Adding interactivity to flash movies-Using the behaviour- Adding a behaviour- Introducing ActionScript- Programming concepts in ActionScript.

TEXT BOOK :

Flash 8 in Simple Steps, Salini Gupta and Adity Gupta, Dreamtech Press

REFERENCE BOOK :

Macromedia Flash MX: Training from the source by Chrissy Rey

I & II SEMESTERS		
AP I	**ALLIED PRACTICAL - I (Exam end of II Sem)**	**11UACS2P**
Hrs / Week : 2	**Hrs / Sem : 30**	**Credit : 2**

OFFICE AUTOMATION PRACTICAL

MS WORD 2000

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.
7. create a table

POWER POINT 2000

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.

EXCEL 2000

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.
5. Create a list of data using sorting
6. create a list of data using validation option

(AND)

FLASH PRACTICAL

1. Make an object move across the screen.
2. Draw a path an object should follow.
3. Change the color of an object.
4. Using Shape Tweening you can change one object into another.
5. Create your own button and add a URL to it so it becomes a link.
6. Create a draggable movie clip in Flash
7. Animate an object
8. Play sound Play a video file

III SEMESTER			
A 3	**MICROPROCESSOR**		**11UACS31**
Hrs / Week : 4	**Hrs / Sem : 60**	**Hrs / Unit : 12**	**Credits : 4**

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 : Microprocessor Architecture and its operations - The 8085 Microprocessing 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, Dynamic Debugging.

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 - Intel 80186/80286 – High-end-Performace Processors - Intel 80386/80486 – Intel Pentium – RISC.

TEXT BOOK:

1. Microprocessor Architecture Programming and Applications with the 8085- Ramesh S.Gaonkar- 5 th Edition. Chapters: Unit I : 1.1,1.2,2.1,2.2,2.3,2.5 Unit II : 3.1,4.1,4.2,4,2.3,2.5,5.4, 6.1 to 6.4 Unit III : 7, 8.1 to 8.4 Unit IV : 9, 12.1,12.2,12.3 Unit V : 18.1 to 18.4

REFERENCE BOOK :

1. Advanced Microprocessors and Interfacing by Badri Ram, McGraw Publicaion.

IV SEMESTER			
A 4	**UNIX AND SHELL PROGRAMMING**		**11UACS41**
Hrs / Week : 4	**Hrs / Sem : 60**	**Hrs / Unit : 12**	**Credits : 4**

UNIT I

History of Unix – Architecture of Unix – File system – Simple commands – Creating files – Redirecting input – Indirection with input output and pipelines – Appending output to your files.

UNIT II

Personalized Unix – Changing Password – Login Profiles – Own login profile – Permissions – Changing owner, groups and permission – Multitasking – UNIX images & processes – background process – Killing process – Process status command – Multi line commands – Sleep – Scheduling Process.

UNIT III

Vi editor – Creating Text – Editing text – EX command mode – Shell within Vi – Printing and spooling – Simple formatting with pr.

Unit IV

Sort – Head – Tail – Split – Cut – Paste – Find – tr – dd – grep family – fgrep – egrep – Sed – awk.

UNIT V

Shell Programming – Shell Scripting Steps Simple Shell Program – Shell and sub shell variables – Setting and unsetting variables – Positional parameters – meta characters – Loops – test – read – error handling – system administration.

TEXT BOOK :

1. UNIX Complete by Peter Dyson, Stan Kelly – Bootle and John Heilbern.

REFERENC BOOK :

1. UNIX Concepts and Applications by Sumitabha Das –
   Tata McGraw Pub. Company Ltd 3rd Edition.

III & IV SEMESTERS		
AP II	**ALLIED PRACTICAL II (Exam end of IV Sem)**	**11UACS4P**
Hrs / Week : 2	**Hrs / Sem : 30**	**Credits : 2**

MICRO PROCESSOR PRACTICAL

1 Addition of two 8 bit nos.
2 Subtraction of two 8 bit nos.
3 Multiplication of two 8 bit nos.
4 Division of two 8 bit nos.
5 Arrange the given set of numbers in Ascending/Descending order
6 Finding Maximum / Minimum in the given set of numbers.
7 Block transfer (move a set of data from one location to another)
8 Separate the hexadecimal into two nibbles
9 Combine two nibbles into 8-bit number.
10 Find the sum of 8 bit numbers stored in five continuous memory locations
11 To Search whether the given number is in the list of memory locations.
12 To count the number of appearance of a given 8 bit number in the continuous memory locations.

(AND)

UNIX AND SHELL PROGRAMMING PRACTICAL

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. i. Counting number of lines before and after updating the file
   ii.Checking file access permission.
   iii.File Comparison.
   iv.Implementing copy, move commend
9. i. Checking Validity of user
   ii. Listing contents of directory
   iii.Removing directory.
   iv.Granting and revoking permissions for user, and others.

PART IV - SKILL BASED ELECTIVE

I SEMESTER			
SBE 1	**DISCRETE MATHEMATICS**		**11SECS11**
Hrs / Week : 3	**Hrs / Sem : 45**	**Hrs / Unit : 9**	**Credits : 2**

UNIT I

Set theory : Sets and elements, Universal Set and Empty Set, Subsets, Venn Diagrams, Set Operations, Algebra of Sets and Duality, Finite, Infinite Sets and Counting Principle, The Inclusion-Exclusion Principle, Classes of Sets, Power Sets, Partitions.

UNIT II

Relations : Product Sets, Relations, Picture Representations of Relations, Composition of Relations, Types of Relations, Closure Properties, Equivalence Relations, Partial Ordering Relations.

UNIT III

Functions and Algorithms : Functions, One-to-One, Onto and Invertible Functions, Mathematical Functions, Exponential and Logarithmic Functions, Sequences, Indexed Classes of Sets, Recursively Defined Functions, Cardinality, Algorithms and Functions.

UNIT IV

Logic and Propositional Calculus : Propositions and Compound Propositions , Basic Logical Operations, Propositions and Truth Tables, Tautologies and Contradictions, Logical Equivalence, Algebra of propositions, Conditional and Biconditional statements, Arguments, Logical Implication

UNIT V

Graph Theory : Graphs and Multigraphs, Subgraphs, Paths, Connectivity, Euler graph, Hamiltonian graph, Labeled and Weighted graphs, Complete, Regular and Bi partite graphs, Tree graphs, Planar graphs.

TEXT BOOK :

1. Discrete Mathematics – Seymour Lipschutz and Marc Lars Lipson - Schaum's Series – Third Edition – Tata McGraw Hill Publications.

REFERENCE BOOKS :

1. " Modern Algebra" - Arumugam and Isaac, SciTech Publication.
2. " Graph Theory " - Arumugam and Isaac, SciTech Publication.

II SEMESTER			
SBE 2	**COMPUTER ORIENTED NUMERICAL METHODS**		**11SECS21**
Hrs / Week : 3	**Hrs / Sem : 45**	**Hrs / Unit : 9**	**Credits : 2**

UNIT I

Solutions of Numerical Algebraic And Transcendental Equations : Bisection Method- Successive Approximation Method- Regula Falsi Method- Newton-Raphson Method.

UNIT II

Solutions of Simultaneous Linear Equations: Gauss Elimination Method- Gauss-Jordon Modification- Gauss-Jacobi Method- Gauss-Seidel Method.

UNIT III

Interpolation : Newton's Forward Interpolation method- Newton's Backward Interpolation method- Interpolation method for Unequal intervals- Lagrange's method- Inverse Interpolation.

UNIT IV

Numerical Differentiation And Integration: Newton-Gregory's Forward interpolation formula for derivatives- Newton-Gregory's Backward Interpolation formula for derivatives- Trapezoidal rule- Simpson's 1/3 rule.

UNIT V

Numerical Solution of Differential Equations: Taylor Series method - Runge-Kutta second order method- Runge-Kutta Fourth order method. Predictor and Corrector method: Milne's Predictor-Corrector method.

TEXT BOOK :

1 Numerical Methods for Scientific and Engineering Computation - Dr. M. K. Venketaraman.

REFERENCE BOOKS :

1. Computer Oriented Numerical Methods – V. Rajaraman – PHI.
2. Numerical Methods – S.Arumugam, A.Thangapandi Isaac, A.Somasundaram – SCITECH 2nd Edition.
3. Numerical Methods for Scientific and Engineering Computation M. K. Jain, S.R.K.Iyengar, R.K. Jain – New Age International Publishers

III SEMESTER			
SBE 3	**INTERNET AND WEB DESIGN**		**11SECS31**
Hrs / Week : 3	**Hrs / Sem : 45**	**Hrs / Unit : 9**	**Credits : 2**

UNIT I

Introduction to the Internet- History of Internet- World Wide Web- Usenet- Telnet- Bulletin Board Service- Internet Technologies- Modem- Internet Addressing- Physical Connections- Telephone lines- Internet Browsers- IE-Netscape Navigator.

UNIT II

History of HTML- HTML documents- HEAD and BODY sections- Title, Prologue, Links- Comment line-Designing the BODY section- Aligning the headings- HR tag- Paragraphs- Tab settings- Images and Pictures- Embedding PNG format images.

UNIT III

Ordered and Un Ordered lists – Nested Lists- Headings in a list- Table Handling- Table creation in HTML-Width of the table and Cells- Cell spanning- Coloring cells- column specification- DHTML and Style sheets- Defining styles- Elements of styles- Linking a style sheet to a HTML document- In-line styles- External style sheets- Internal style sheets- Multiple styles.

UNIT IV

Frames- Frameset definitions- Frame definitions- Nested framesets - Forms - Action attribute-Method attribute- Enctype attribute- Check Boxes- Radio Buttons- Text Fields- Text Areas- Password- Submit and Reset buttons- Drop down list – sample forms.

UNIT V

Working with E-mail - Anatomy of an E-mail message - Viewing your Inbox- Sending a new mail message - Replying to and forwarding E-mail messages- E-mail netiquette- Fourteen mail management tips and Tricks - Internet abuse.

TEXT BOOKS :

1. World Wide Web with HTML , Dr.C.Xavier., Tata McGraw- Hill Publishing Company
2. Internet 101 A beginner's guide to the Internet and the World wide Web, Wendy G.Lehnert, Pearson Education Asia Publication.

IV SEMESTER			
SBE 4	**OPERATIONS RESEARCH**		**11SECS41**
Hrs / Week : 3	**Hrs / Sem : 45**	**Hrs / Unit : 9**	**Credits : 2**

UNIT I

Simplex Method : Different forms of Linear Programming Problem – Basic solution, Degenerate solution, Non-Degenerate solution, Basic feasible solution , Improved BFS, Optimum BFS – Minimax Theorem of LPP - Slack, Surplus, Restricted and Unrestricted variables – Bounded and Unbounded solution - The Simplex Algorithm for solving a LPP - The simplex method of solving a LPP.

UNIT II

Theory of Games : Introduction – payoff matrix , fair game, strictly determinable game - Two person zero sum games – The Maximin Minimax principle of game theory – Games without saddle points – Mixed strategies - Graphical solution of 2 X N and M X 2 games - Dominance property – Modified Dominance property.

UNIT III

Replacement Problem : Introduction - Replacement of items that Deteriorate with time –Replacement of Items whose Maintenance costs increase with time and the value of money also changes with time - Replacement of items that fail completely – Individual Replacement policy - Group Replacement policy - Mortality and Staffing problem.

UNIT IV

Network Scheduling by PERT / CPM : Introduction – Basic concepts : Activities, Nodes, Network, Critical path – Constraints in Networks – Construction of the Network – Various Time calculations in Networks, Critical path calculations – Procedure of determining the Critical Path – critical and non-critical activities - Slack and Floats determinations -- PERT – PERT calculations.

UNIT V

Queuing Theory : Introduction - Characteristics of queuing systems - Basic queuing process - Customer's behaviours in the queue - Postulate for the Poisson process - Distribution of arrival time - Distribution of service time - Symbols and Notations – Definition of Transient and Steady states – Classification of Queues - Basic characteristic of model one – Problems in infinite queue, infinite source and single server model.

TEXT BOOK:

Operations Research - P.K.Gupta, Kanti Swarup and Man Mohan, SultanChand & Sons Publications.

REFERENCE BOOKS:

1. Operations Research - J.A. Mangaladoss , Presi – Persi Publications
2. Operations Research - R.Paneer Selvam, Prentice Hall of India

V SEMESTER			
SBE 5	**MOBILE COMMUNICATIONS**		**11SECS51**
Hrs / Week : 3	**Hrs / Sem : 45**	**Hrs / Unit : 9**	**Credits : 2**

UNIT I

Introduction : Evolution of Wireless Networks-Evolution of Wireless Data-Evolution of Wireless LAN-Mobile Computing - Mobile Computing functions-Mobile Computing Devices-Networks Standards

UNIT II

Architecture for Mobile Computing-Three Tier Architecture: Tier-1, Tier-2, Tier-3 -GPS JAVA in the Handset-Java2 Micro Editor(J2ME)Technology-Wireless Devices with windows.

UNIT III

Emerging Technologies: Bluetooth - Bluetooth protocol - Bluetooth protocol stack-Radio Frequency Identification (RFID)-Wireless Broad Band (WiMax) - Medium Access Control (MAC) - Mobile IP - Cellular IP - IPV6

UNIT IV

Global System for Mobile Communications (GSM) - GSM Architecture - GSM entities-The Operation and Support Subsystem(OSS) - Message centre - Call Routing - GSM frequency Allocation. Short Message Service (SMS) - SMS Architecture - Short Message Mobile Terminated (SMMT)-Short Message Mobile Originated(SMMO)

UNIT V

General Packet Radio Service(GPRS) - GPRS and Packet Data Network-Quality of Service(QOS) - GPRS Network Architecture - Wire Application Protocol(WAP) - WAP Application Environment (WAE) - Multimedia Messaging Service(MMS) - Code Division Multiple Access
(CDMA) and 3G - CDMA Registration - CDMA Versus GSM - Wireless LAN – Applications - Security Issues in Mobile Computing.

TEXT BOOK :

Mobile Computing Technology,Application and Service Creation By Asoke K.Talukder and Roopa R.Yavaga-Tata Mcgraw Hill Publications.
UNIT I :Chapters : 1.1,1.2,1.3,1.5,1.10
UNIT II :Chapters : 2.4,2.5,2.6,15.1,15.2,15.3,16.1,16.2
UNIT III:Chap 4.1,4.2,4.3,4.4,4.5,4.6
UNIT IV:Chap 5.1,5.2,5.3,5.4,5.8,6.1,6.2
UNIT V :Chap 7.1,7.2,7.3,8.1,8.2, 8.3,9.1,9.3.5,9.3.6,9.4,10.2,18.1,18.2,18.3

REFERENCE BOOKS:

1. Mobile Computing by Biplob.k Sikdar and Sipra Dasbit - Pretice Hall Of India
2. Mobile Communications by J.Schilter - Addison-Wesley Publications

VI SEMESTER			
SBE 6	**QUANTITATIVE APTITUDE**		**11SECS61**
Hrs / Week : 3	**Hrs / Sem : 45**	**Hrs / Unit : 9**	**Credits : 2**

UNIT I

Numbers
H.C.F and L.C.M of Numbers
Decimal Fractions (Chapters 1,2,3)

UNIT II

Profit and loss
Ratio and Proportion (Chapters 11,12)

UNIT III

Time and Work
Time and Distance (Chapters 15,17)

UNIT IV

Simple Interest
Compound Interest
Chain Rule (Chapters 14,21,22)

UNIT V

Stocks and Shares
Clock
Probability (Chapters 28,29,31)

TEXT BOOK:

QUANTITATIVE APTITUDE by R.S.Aggarwal

PART IV - NON MAJOR ELECTIVE OFFERRED BY DEPARTMENT OF COMPUTER SCIENCE TO OTHER MAJOR STUDENTS

III SEMESTER			
NME 1	**OFFICE AUTOMATION**		**11NECS31**
Hrs / Week : 3	**Hrs / Sem : 45**	**Hrs / Unit : 9**	**Credits : 2**

UNIT I

Documentation Using MS-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 MS-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 MS-Excel : Introduction to MS-Excel, Creating & Editing Worksheet, Formatting and Essential Operations, Formulas and Functions, Charts.

UNIT IV

Advance features of MS-Excel : Pivot table & Pivot Chart, Linking and Consolidation, Database Management using Excel Sorting, Filtering, Table, Validation, Goal Seek, and Scenario.

UNIT V

Presentation using MS-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.

TEXT BOOK :

1. Microsoft Office – Complete Reference – BPB Publication

REFERENCE BOOK :

1. Learn Microsoft Office – Russell A. Stultz – BPB Publication

IV SEMESTER			
NME 2	**C PROGRAMMING**		**11NECS41**
Hrs / Week : 3	**Hrs / Sem : 45**	**Hrs / Unit : 9**	**Credits : 2**

UNIT I

Character Set- C tokens- Keywords and Identifiers- Constants , Variables, data types- Declaration of variables- declaration of storage classes- Assigning values to the variables – defining symbolic constants- Declaring a variable as constant- Arithmetic operators- Relational operators- Logical operators- Assignment operators- Increment and decrement operators- Conditional operators- bitwise operators- Special operators- Arithmetic expressions- evaluation of expressions- precedence of Arithmetic operators-Type conversions in expressions- Mathematical functions.

UNIT II

Decision Making- If Statement- The If-else statement- Nesting of If statement- The else-if ladder- the switch statement- the?: operator- the goto statement-Decision making and looping- the while statement – the do statement- the for statement- jumps in loops.

UNIT III

Arrays- one dimensional, two dimensional and multi dimensional arrays- Dynamic arrays- Character arrays and strings- Declaring and initializing string variables- Reading string from terminals- string handling functions.

UNIT IV

User defined functions- Category of functions- Nesting of functions- Recursive functions - pointers- pointer expressions- pointers and arrays- pointers and character strings- Array of pointers- pointers and structures.

UNIT V

Structure and Unions- Accessing structure members- Arrays of structures- Arrays within structures- Unions- bit field- preprocessor directives.

TEXT BOOK:

1. Computing Fundamentals and C Programming - E Balagurusamy - Tata McGraw-Hill Publishing Company