BCA SEMESTER-V

Code	Subject	L	Pr./Tu	Cr	Ext. Exam.	Int. Exam.	Total Marks
5101	Data Communication and Networking	3	1	4	75	25	100
5102	JAVA Programming	4	-	4	75	25	100
5103	Visual and Database Programming	2	2	4	75	25	100
5104	Internet Programming	4	-	4	75	25	100
5201	JAVA Programming LAB*	-	2	2	25	25	50
5202	Internet Programming LAB*	-	2	2	25	25	50
	Total			20			500

SEMESTER-V	1 Credit=25 Marks Total Credits = 20 Total Marks = 20*25=500

BCA SEMESTER-VI

Code	Subject	L	Pr./Tu	Cr	Ext. Exam.	Int. Exam.	Total Marks
6101	Management Information System	3	1	4	75	25	100
6102	Enterprise Resource Planning	3	1	4	75	25	100
6103	INTELLIGENT PROPERTY RIGHTS, PATENTS AND CYBER LAWS ✓	4	-	4	75	25	100
6104	Elective						
	1. E-COMMERCE ✓	4	-	4	75	25	100
	2. Artificial Intelligence						
	3. Web Technology	2	2				
6201	Project*	-	4	4	50	50	100
	Total			20			500

SEMESTER-VI	1 Credit=25 Marks Total Credits = 20 Total Marks = 20*25=500

SEMESTER						1 Credit=25 Marks Total Credits = 120 Total Marks = 120*25=3000
I	II	III	IV	V	VI	
20	20	20	20	20	20	

- * Lab Components are practical oriented and no theory examinations will be conducted. Practical examinations will be conducted and evaluated by Internal and External Examiners.

- Int. Exam: C.A.: Internal examination and continuous assessment involves two internal test + Assignments/ Presentation/ Oral/ Viva/Group Discussion etc

Terms Used:

Tu.:   Tutorial
Pr.:   Practical
C.A.:   Continuous Assessment
Tw.:   Term Work
Cr.:   Credits
Int.:   Internal
Ext.:   External

Branch: BCA	Semester-V
Subject Code: 5101	Lecture: 04 Credit: 04
Subject Title	DATA COMMUNICATION AND NETWORKING

Modules	Sr. No.	Topic and Details	No of Lectures Assigned	Marks Weight age %
UNIT-I	1	Fundamentals of communication Ways of communication.	5	10
	2	Analog / Digital Transmission. Synchronous/ Asynchronous Transmission.	5	10
	3	Modulation Techniques (AM, FM, PM, Pulse), Shift keying, Encoding techniques	5	10
UNIT-II	4	Transmission Media (Twisted pair, Coax Cable, Optical fiber, Wireless media(terrestrial, microwave, satellite)	5	10
	5	Transmission medium impairments, Multiplexing (TDM,TDMA,FDM)	5	10
	6	Channel Allocation-Static, Dynamic, Switching techniques (Circuit, Message, Packet, Hybrid)	5	10
UNIT-III	7	Fundamentals of Networking, Transporting digital information- framing, sequencing, packaging, reassembling .	5	10
	8	Network Models – Layered approach with concepts of ISO OSI RM, TCP/IP	5	10
UNIT-IV	9	Network issues – framing, error control, flow control, routing with various algorithms, congestion control Types of services – connection and reliability.	5	10
	10	Concepts of collisions- Slots, carrier sense, Medium Access Protocols- Aloha, Slotted Aloha, CSMA, CSMA/CD	5	10
		Total	50	100

Text Book:
1. W. Stallings "Data and Computer Communications", 7th Edition, Prentice Hall, 2004

References:
1. Forouzan, "Data Communication and Networking," 3rd Edition, McGraw Hill, 2003
2. A.S.Tannenbaum,"Computer Networks", 4th edition Printice Hall of India

1

S.N.D.T. Women's University. Mumbai.

Syllabus- BCA. (Revised in 2013- With effective from 2013-14 Batch)

Branch: BCA	-	Semester-V
Subject Code: 5102		Lecture: 04 Credit: 04
Subject Title		JAVA PROGRAMMING

Modules	Sr. No.	Topic and Details	No of Lectures Assigned	Marks Weight age %
UNIT-I	1	**Introduction and programming with Java:** Introduction to java: Creation of Java , Difference between Java & C++. Java's Magic: Byte Code , JVM , Run time Environment, Just-in-time , Compiler, JDK, Buzzwords/Features, OOP Principles, Data Types & Operators, Simple Data types, Variables, Declaring Variables, Dynamic Initialization, Scope & Life time, Type conversion & Casting, Java Automatic Conversions, Casting Incompatible Types Arrays: One , Multi dimensional, Arithmetic ,Modulus, Assignment, Increment & Decrement, Relational, Boolean - Logical operators. Control Statement-All Control Statements, Jump Statement Classes & Objects: Class Fundamentals- General form, Simple class, Declaring Objects, Assigning Object reference Variables	5	10
	2	Constructor & Methods: Introduction to Methods, Constructor, Types of Constructors, This Keyword, Garbage Collection, Finalize( ) method, A Stack Class	4	8
UNIT-II	3	Method Overloading : Overloading Methods. Using Objects as Parameters, Argument Passing, Returning Objects, Recursion, Understanding Static , Introducing to Final, Inner & Nested Classes, Inheritance & Method Overriding: Basics, Using Super, Multilevel, Introduction to Overriding, Dynamic Method dispatch, Abstract Classes, Final With Inheritance	6	12
	4	**Special Features of Java:** Interface & Packages, Packages Access Protection, Importing Package, Interfaces.	3	6
	5	Exception Handling: Fundamentals, Exception Types. Uncaugth Exception, Using try catch, Multiple Catch, Nested try, throw, throws, finally, Java's Built-in-Exception, Creating own Exception Subclasses, Chained Exception, Using Exception	4	8
UNIT-III	6	hreading: Thread Model, Thread priorities, ronization, Messaging, The thread class and runnable ce, The main Thread, Creating a Thread, Implementing ble , Multi thread, Using isAlive() & join()	5	10
	7	**I/O, Applets :** The I/O classes, I/O Basics, Streams, Byte Streams and character streams, Byte Stream , classes and character stream classes, Byte Stream class	5	10

		Buffered InputStream, BufferedOutputStream, ByteArrayInput, ByteArrayoutput, DataInput, DataOutput, printStream, Character Stream classm, BufferedReader, BufferedWriter, InputStreamReader, OutputStreamWriter, PrintWriter, Reading Console Input, Writing console Output		
	8	Applet: Fundamentals/Basics, Applet Initialization and Termination, Init(), Start(), Paint(), Stop(), Destroy(), Overriding update(), Simple Applet Display Methods(), Repainting, Using Status window, The HTML Applet tag, Passing parameters to Applets	6	12
UNIT-IV	9	The Java Library· String Handling- length( ) , equals( ), charAt( ), toString( ), getchar(), compareTo(), indexOf( ),lastIndexOf( ), concat( ), valueOf(), substring( ), replace( ), trim( ), toUpperCase( ), toLowerCase( ). Networking- Networking Basics, Socket Overview, Client/server, Reserved Socket, Internet Addressing, DNS, Java & The Net, Networking classes and Interfaces- InetAddress, Factory Methods, Instance Methods, TCP/IP client sockets, Whois, URL, Format URL connection , TCP/IP Server sockets, Datagrams, DatagramPacket, Datagram server and client, The Collections Framework , Collections Overview, Collections Interfaces, The collection Interface, The list Interface, Set Interface, Sorted Set Interface	6	12
	10	The AWT and Layout Managers: Control fundamentals, Adding and Removing controls, Responding to controls, Using Buttons, ActionListener, actionPerformed(), getActioncommand(), ItemListener, itemStateChanged(), Choice Control, Handling choice Lists, Using Lists, Handling Lists, Managing Scroll bar, Textfield, Using TextArea LayOut Manager-Flow ,Border, Grid,Card, Using Insets, Event Handling- Events, Event Sources, Event Listeners, Event Classes(In details)-	6	12
		Total	50	100

Text Book:
1. Herb Schildt "Java 2 the Complete Reference J2se", 5TH Edition , 2003

Reference Books:
1. "Java Enterprise in a Nutshell: A Desktop Quick Reference": (Nutshell Handbook), O'Reilly, 2002
2. Elliot B. Koffman, "Problem Solving with Java", Temple University Ursula Wolz, College of New Jersey, Copyright 1999, 848 pp. ISBN 0201357437.
3. Jan Skansholm, "Java from the Beginning", Chalmers University of Technology, Sweden, Copyright 2000, 540 pp. ISBN 0201398125.

Branch: BCA	Semester-V
Subject Code: 5103	Lecture: 04 Credit: 04
Subject Title	VISUAL AND DATABASE PROGRAMMING

Modules	Sr. No.	Topic and Details	No of Lectures/Practicals Assigned	Marks Weight age %
UNIT-I	1	Introduction to .NET, .NET Framework features & architecture, CLR, Common Type System, MSIL, Assemblies and class libraries. Introduction to visual studio, Project basics, types of project in .Net, IDE of VB.NET- Menu bar, Toolbar, Solution Explorer Toolbox,Properties Window, Form Designer, Output Window, Object Browser.	4	8
	2	The environment: Editor tab, format tab, general tab, docking tab. visual development & event drive Programming -Methods and events.	4	8
UNIT-II	3	The VB.NET Language- Variables -Declaring variables, Data Type of variables, Forcing variables declarations, Scope & lifetime of a variable, Constants, Arrays, types of array, control array, Collections	2	4
	4	Subroutines, Functions, Passing variable Number of Argument Optional Argument, Returning value from function. Control flow statements: conditional statement, loop statement. Msgbox & Inputbox.	5	10
	5	Working with Forms : Loading, showing and hiding forms, controlling One form within another.GUI Programming with Windows Form: Textbox, Label, Button, Listbox, Combobox, Checkbox, PictureBox, RadioButton, Panel, scroll bar, Timer, ListView, TreeView, toolbar, StatusBar.There Properties, Methods and events. OpenFileDilog, SaveFileDialog, FontDialog, ColorDialog, PrintDialog. Link Label. Designing menues : ContextMenu, access & shorcut keys.	5	10
UNIT-III	6	Object oriented Programming: Classes & objects, fields Properties, Methods & Events, constructor, inheritance. Access Specifiers: Public Private, Projected. Overloading, My Base	6	12

Modules	Sr. No.	Topic and Details	No of Lectures/Practicals Assigned	Marks Weight age %
		& My class keywords.		
	7	Overview of OLE, Accessing the WIN32 API from VB.NET & Interfacing with office97, COM technology, advantages of COM+, COM & .NET, Create User control, register User Control, access com components in .net application.	6	12
UNIT-IV	8	Database programming with ADO.NET – Overview of ADO, from ADO to ADO.NET, Accessing Data using Server Explorer. Creating Connection. Command. Data Adapter and Data Set with OLEDB and SQLDB. Display Data on data bound controls, display data on data grid.	6	12
	9	Fetching Record Sets and Operation , Insertion, updation, navigation. selection etc.	6	12
	10	Report Generation (Crystal report or Data report or any third party Report Tool which can be configured with VB)	6	12
		Total	50	100

Text and Reference Books:

1. VB.NET Programming Black Book by Steven Holzner –Dreamtech Publications
2. Mastering VB.NET by Evangelos Petroutsos- BPB publications
3. Introduction to .NET framework-Worx publication
4. msdn.microsoft.com/net/
5. www.gotdotnet.com
6. GOTTFRIED BYRON S., Ed: 01 ,"VISUAL BASIC "-, Tata McGraw Hill 2nd edition
7. Greg Perry,"Visual Basic in 21 days", Sams, 1998
8. Prosenjit Shina, "Visual Basic Complete", S. Chand & Company Limited, 2005
9. Julia Bradely ,"Visual Basic 6",

Branch: BCA	Semester-V
Subject Code: 5104	Lecture: 04 Credit: 04
Subject Title	INTERNET PROGRAMMING

Modules	Sr. No.	Topic and Details	No of Lectures/Practicals Assigned	Marks Weight age %
UNIT-I		Introduction to web	2	4

	1	HTTP: Overview – HTTP Basics, Client request, Server response; HTTP Headers; Session Management – Persistent connections, Cookies.		
UNIT-II	2	General concepts on web server: Configuration and Administration; virtual hosting General concepts of caching proxy server Web security, Digital signatures, Digital Certificates, Encryption, and Authentication.	2	4
UNIT-III	3	HTML: Structure of HTML Document – Meta tags. Links, Text, Lists, Tables. Inclusions (Objects, Images, and Multimedia contents); Presentation of HTML document – Style sheets. Alignment, fonts, frames; Interactive HTML document – Forms, Scripts (As scripting is included in part II, should not have space in part I).	10	20
UNIT-IV	4	JAVA SCRIPT – JS Basic Variables, If...Else, Switch, Operators, JS Popup Boxes, Functions,For Loop, While Loop, Break Loops, For...In, Events, Try...Catch, Throw ,on error, Special Text Objects, String, Date, Array, Boolean, Math, JS HTML DOM, JS Advanced , JS Browser, JS Cookies, JS Validation, JS Animation, JS Image Maps, JS Timing, JS Create Object.	11	22
		Total	50	100

Text Books:
1. "Javacript Bible" Danny Goodman, Michael Morrision, Yiley dreamtech india pvt. Ltd
2. "HTML the complete reference" Thomas A. Powell, Tata Mcgrowhill

Reference Books:
1. HTML: Chuck Musciano and Bill Kennedy, O'Reilly and Associates "The Definitive Guide": 3rd Edition
2. David Flanagan "JavaScript: The Definitive Guide ", O'Reilly - January 2002 Kent and Multer "Official Netscape JavaScript 1.2 Programmer's Reference " Netscape-specific book by (© 1997, ISBN: 1566047579).

Branch: BCA	Semester-V
Subject Code: 5201	Practical: 02 Credit: 02
Subject Title	JAVA PROGRAMMING LAB*

Modules	Sr. No.	Topic and Details	No of Lectures/Practicals Assigned	Marks Weight age %
UNIT-I	1	Introduction and programming with Java: Implementation of Data Types, Type conversion & Casting, Java Automatic Conversions, Casting Incompatible Types. Arrays: One , Multi dimensional, Operators- Arithmetic ,Modulus, Assignment, Increment & Decrement, Relational, Boolean - Logical operators. Control Statement-All Control Statements, Jump Statement Classes & Objects: Simple class, Declaring Objects, Assigning Object reference Variables	2	4
	2	Implementations of Constructor & Methods: Constructors, This Keyword, Garbage Collection, Finalize( ) method, A Stack Class	2	4
UNIT-II	3	Implementations of Method Overloading : Overloading Recursion, Static , Inheritance & Method Overriding: Basics, Using Super, Multilevel, Overriding, Dynamic Method dispatch, Abstract Classes	3	6
	4	Special Features of Java: Implementations of Interface & Packages, Packages Access Protection, Importing Package, Interfaces.	3	6
UNIT-III	5	Exception Handling: Implementations of try catch, Multiple Catch, Nested try, throw, throws, finally statements Java's Built-in-Exception	3	6
	6	Implementations of Threading: Single and le thre	3	6
	7	I/O, Applets : Implementations of I/O functions		
UNIT-IV	8	Applet: Implementations Applet - Initialization and Termination, Init(), Start(), Paint(), Stop(), Destroy(), Overriding update(), Simple Applet Display Methods(), Repainting, Using Status window, The HTML Applet tag, Passing parameters to Applets	3	6
	9	The Java Library: Implementations String Handling functions	3	6

| | 10 | Implementations of AWT and Layout Managers: Control fundamentals, Adding and Removing controls, Responding to controls. Using Buttons, Listeners | 3 | 6 |
| | | Total | 25 | 50 |

Text Book:
Herb Schildt "Java 2 the Complete Reference J2se", 5TH Edition , 2003

References:
Jim Farley, William Crawford, David Flanagan "Java Enterprise in a Nutshell: A Desktop Quick Reference": (Nutshell Handbook), O'Reilly, 2002

Elliot B. Koffman, "Problem Solving with Java", Temple University Ursula Woiz. College of New Jersey, Copyright 1999, 848 pp. ISBN 0201357437.

Jan Skansholm, "Java from the Beginning", Chalmers University of Technology. Sweden, Copyright 2000, 540 pp. ISBN 0201398125.

Branch: BCA	Semester-V
	Practical: 02
Subject Code: 5202	Credit: 02
Subject Title	INTERNET PROGRAMMING LAB

Modules	Sr. No.	Topic and Details	No of Lectures/Practicals Assigned	Marks Weight age %
UNIT-I	1	HTML: Structure of HTML Document, Formatting Text , - Headers - Formatting Tags-- Pre Tag, - Font Tag(Alignment), - Text area, - Special Characters Meta tags, Working with Images, Links , Anchor Tag Lists- Unordered List, Ordered Lists, Definition List Tables • Table, TR and TAG Tag • Cell Spacing and Cell Padding • Colspan and Rowspan Inclusions (Objects, Images, and Multimedia contents) Presentation of HTML document – Style sheets, Types of Style Sheet Frames • Frameset. Frame Tag, NoFrames Tag	5	10

		• Interactive HTML document – Form, Form and Input Tag, Text Tag, Radio Button, Checkbox. Select Tag and Pull down Lists, Hidden, Submit and Reset		
UNIT-II	2	JAVA SCRIPT – JS Basic : JavaScript Variables and Data Types • Declaring Variables, Data Types Statements and Operators Control Structures • Conditional Statements, Loop Statements Popup Boxes/Message Box in Javascript • Alert Boxes, Conform Boxes, Prompt Boxes	2	4
UNIT-III	3	Object –Based programming . Functions Objects (String, Date, Array, Boolean, Math)	3	6
UNIT-IV	4	JavaScript with HTML • Events, Event Handlers • Try...Catch, Throw , on error,	15	30
	5	JS Advanced, JS Browser, JS Cookies, JS Validation JS Animation, JS Image Maps, JS Timing, JS Create Object.		
		Total	25	50

Text Books:
1. Danny Goodman, Michael Morrision "Javacript Bible", Yiley dreamtech india pvt. Ltd
2. Thomas A. Powell ,"HTML the complete reference", Tata Mcgrowhill

Reference Books:
1. Chuck Musciano and Bill Kennedy, "HTML: The Definitive Guide": 3rd Edition , O'Reilly and Associates
2. David Flanagan "JavaScript: The Definitive Guide ", O'Reilly - January 2002 Kent and Multer "Official Netscape JavaScript 1.2 Programmer's Reference." Netscape-specific book by (© 1997, ISBN: 1566047579).

Syllabus- BCA. (Revised in 2013- With effective from 2013-14 Batch)

Branch: BCA	Semester-VI
Subject Code: 6101	Lecture: 04 Credit: 04
Subject Title	MANAGEMENT INFORMATION SYSTEM

Modules	Sr. No.	Topic and Details	No of Lectures Assigned	Marks Weight age %
UNIT-i	1	Introduction to system & basic system concepts System Approach, Types of System	5	10
	2	Information Systems Definition & Characteristics: Information concepts, Attributes of information, Methods to avoid misuse of information	5	10
	3	Information - A quality product, Types of information, Methods of data & information collection, Role of information in decision making, General model of human as a information processor	6	12
UNIT-II	4	MIS & information concepts Subsystems of information system: EDP, MIS & information concepts, DSS	6	12
	5	Overview of MIS Definition & characteristics: Definition, Characteristics of MIS, MIS functions, Components of MIS, Framework for understanding MIS: Robert Anthony's Hierarchy of management activity, Information requirements	6	12
UNIT-III	6	Levels of management, Simon's model of decision making, Concept of decision making: Structured vs unstructured decisions, Knowledge of outcomes, Criteria of decision making, Formal vs informal systems	6	12
UNIT-IV	7	Developing information system, Analysis of information system, Design of information system	6	12
	8	Implementation of information system, Evaluation, Pitfalls in MIS development	5	10
	9	Functional MIS: A study of marketing, personnel, financial & production MIS	5	10
		Total	50	100

Text Book:
1. W.S. Jawadekar, "Management Information Systems," Tata McGraw Hill Publishing, 2004.

References:
1. V.Rajaraman, "Analysis and design of Information System," PHI.
2. J.Kanter "Management Information Systems", PHI ,1996

3. Gordon B. Davis & M.H. Olson , "Management Information Systems: Conceptual Foundation , structure and Development" 1984
4. K. Rajeshwar Rao, "Management Information System",Himalaya publication
5. D. P. Goyal, "MIS : Managerial Perspectives" ,2006

Branch: BCA	Semester-VI
Subject Code: 6102	Lecture: 04 Credit: 04
Subject Title	ENTERPRISE RESOURCE PLANNING

Modules	Sr. No.	Topic and Details	No of Lectures Assigned	Marks Weight age %
UNIT-I	1	Introduction to ERP: An Overview, Integrated management Information, Seamless Integration, Supply Chain Management, Resource Management, Integrated Data Modeling, Scope, Technology, Benefits of ERP, Evolution, ERP and the Modern Enterprise	6	12
	2	Business and ERP Business Engineering	4	8
UNIT-II	3	Significance, Principles, BRP ERP and IT	4	8
	4	Business Engineering with Information Technology	4	8
	5	ERP and Management Concerns	5	10
UNIT-III	6	Business Modeling for ERP	5	10
	7	ERP Implementation, Role of Consultants, Vendors and User Customization,	5	10
	8	Precautions, ERP post implementation Options,	5	10
UNIT-IV	9	Methodologies and guidelines for ERP Implementations	6	12
	10	ERP and Competitive Advantages, Overview, ERP AND THE Competitive Strategy	6	12
		Total	50	100

Text and Reference Books:

Text Book:
1. V.K. Garg and N.K.Venkitakrishnan "ERP : Concepts and Planning" PHI , 1998

References:
2. Alexis Leon, "ERP", Tata McGraw- Hill Education

Branch: BCA	Semester-VI
Subject Code: 6103	Lecture: 04 Credit: 04

| Subject Title | | | INTELLIGENT PROPERTY RIGHTS, PATENTS AND CYBER LAWS | | |

Module	Sr. No.	Topic and Details	No of Lectures Assigned	Marks Weight age %
UNIT-I	1	**INTELLIGENT PROPERTY RIGHTS:** Basic Principles and Acquisition of Intellectual Property Rights: Philosophical Aspects of Intellectual Property Laws. Basic Principles of Patent Law, Patent Application procedure, Drafting of a Patent Specification, Understanding Copyright Law, Basic Principles of Trade Mark Basic Principles of Design Rights, International Background of Intellectual Property	5	10
	2	**Information Technology Related Intellectual Property Rights:** **Computer Software and Intellectual Property** - Objective, Copyright Protection, Reproducing, Defences, Patent Protection. **Database and Data Protection**-Objective, Need for Protection, UK Data Protection Act, 1998,US Safe Harbor Principle, Enforcement. **Protection of Semi-conductor Chips**-Objectives Justification of protection, Criteria, Subjectmatter of Protection, WIPO Treaty, TRIPs, SCPA. **Domain Name Protection**-Objectives, domain name and Intellectual Property, Registration of domain names, disputes under Intellectual Property Rights, Jurisdictional Issues, and International Perspective	5	10
UNIT-II	3	**Patents (Ownership and Enforcement)** Patents-Objectives, Rights, Assignments, Defences in case of Infringement	5	10
	4	**Copyright (Ownership and Enforcement)** Copyright-Objectives, Rights, Transfer of Copyright, work of employment Infringement, Defences for infringement	5	10
	5	**Trademark(Ownership and Enforcement)** Trademarks-Objectives, Rights, Protection of good will, Infringement, Passing off, Defences. **Designs**-Objectives, Rights, Assignments, Infringements, Defences of Design Infringement	5	10
UNIT-III	6	**Enforcement of Intellectual Property Rights** - Civil Remedies, Criminal Remedies, Border Security measures. **Practical Aspects of Licensing** – Benefits, Determinative factors, important clauses, licensing clauses	5	10
	7	**Cyber Law:** **Basic Concepts of Technology and Law :** Understanding the Technology of Internet, Scope of Cyber Laws, Cyber Jurisprudence **Law of Digital Contracts :** The Essence of Digital Contracts, The System of Digital Signatures, The Role and Function of Certifying Authorities, The Science of	5	10

Subject Title	INTELLIGENT PROPERTY RIGHTS, PATENTS AND CYBER LAWS

Module	Sr. No.	Topic and Details	No of Lectures Assigned	Marks Weight age %
UNIT-I	1	INTELLIGENT PROPERTY RIGHTS: Basic Principles and Acquisition of Intellectual Property Rights: Philosophical Aspects of Intellectual Property Laws, Basic Principles of Patent Law, Patent Application procedure, Drafting of a Patent Specification, Understanding Copyright Law, Basic Principles of Trade Mark Basic Principles of Design Rights, International Background of Intellectual Property	5	10
	2	Information Technology Related Intellectual Property Rights: Computer Software and Intellectual Property - Objective, Copyright Protection, Reproducing, Defences, Patent Protection. Database and Data Protection-Objective, Need for Protection, UK Data Protection Act, 1998,US Safe Harbor Principle, Enforcement. Protection of Semi-conductor Chips-Objectives Justification of protection, Criteria, Subjectmatter of Protection, WIPO Treaty, TRIPs, SCPA. Domain Name Protection-Objectives, domain name and Intellectual Property, Registration of domain names, disputes under Intellectual Property Rights, Jurisdictional Issues, and International Perspective	5	10
UNIT-II	3	Patents (Ownership and Enforcement) Patents-Objectives, Rights, Assignments, Defences in case of Infringement	5	10
	4	Copyright (Ownership and Enforcement) Copyright-Objectives, Rights, Transfer of Copyright, work of employment Infringement, Defences for infringement	5	10
	5	Trademark(Ownership and Enforcement) Trademarks-Objectives, Rights, Protection of good will, Infringement, Passing off, Defences. Designs-Objectives, Rights, Assignments, Infringements, Defences of Design Infringement	5	10
UNIT-III	6	Enforcement of Intellectual Property Rights - Civil Remedies, Criminal Remedies, Border Security measures. Practical Aspects of Licensing – Benefits, Determinative factors, important clauses, iicensing clauses	5	10
	7	Cyber Law: Basic Concepts of Technology and Law : Understanding the Technology of Internet, Scope of Cyber Laws, Cyber Jurisprudence Law of Digital Contracts : The Essence of Digital Contracts, The System of Digital Signatures, The Role and Function of Certifying Authorities, The Science of	5	10

Modules		Topic Details	No. of Lectures	Marks Weightage
		Cryptography .		
UNIT-IV	8	**Cyber Law: Information Technology Act 2000 :** Information Technology Act-2000- (Sec 1 to 94).	5	10
	9	**Cyber Law: Intellectual Property Issues in Cyber Space:** Copyright in the Digital Media, Patents in the Cyber World. **Rights of netizens and E-Governance:** Privacy and Freedom Issues in the Cyber World, E-Governance, Cyber Crimes and Cyber Laws, Ethical hacking.	5	10
	10	**Cyber Law:** Cyber Law Issues for Management :Cyber Law Issues in E-Business Management, Major issues in Cyber Evidence Management	5	10
Total			50	100

Text and Reference Books:
1. Cyber law by Vivek Sood
2. Licensing Art & Design by Caryn R. Leland, Allworth Press
3. A Professional's Guide to Licensing and Royalty Agreements by Caryn R. Leland Allworth Press
4. IT2000 Bill
5. How To Register Your Own Copyright by Marx Warda, Sphinx Publishing
6. Web sites: online information, handouts

Branch: BCA	Semester-VI
Subject Code: 6104	Lecture: 04 Credit: 04
Subject Title	ELECTIVE-1 E-COMMERCE

Modules	Sr. No.	Topic Details	No. of Lectures Assigned	Marks Weight age %
UNIT-I	1	**Electronic Commerce:** Overview, Definitions, Advantages & Disadvantages of E –Commerce, Threats of E – Commerce, Managerial Prospective, Rules & Regulations For Controlling E – Commerce, Cyber Laws. Technologies : Relationship Between E – Commerce & Networking, Different Types of Networking For E – Commerce, Internet, Intranet & Extranet, EDI Systems	6	12
	2	**Wireless Application Protocol :** Definition, Hand Held Devices, Mobility & Commerce, Mobile Computing, Wireless Web, Web Security, Infrastructure Requirement For E – Commerce	6	12
UNIT-II	3	**Business Models of e – commerce:** Model Based On	4	12

		Transaction Type, Model Based On Transaction Party - B2B, B2C, C2B, C2C, E – Governance.		
	4	**E – strategy :** Overview, Strategic Methods for developing E – commerce.	2	
	5	**Four C's : (Convergence, Collaborative Computing, Content Management & Call Center).** Convergence : Technological Advances in Convergence – Types, Convergence and its implications, Convergence & Electronic Commerce.	8	16
UNIT-III	6	**Supply Chain Management :** E - logistics, Supply Chain Portal, Supply Chain Planning Tools (SCP Tools), Supply Chain Execution (SCE), SCE - Framework, Internet's effect on Supply Chain Power.	8	32
	7	**E – Payment Mechanism :** Payment through card system, E – Cheque, E – Cash. E – Payment Threats & Protections. E – Marketing :. Home –shopping, E-Marketing, Tele-marketing Electronic Data Interchange (EDI) : Meaning. Benefits, Concepts, Application, EDI Model, Protocols (UN EDI FACT / GTDI, ANSI X – 12), Data Encryption (DES / RSA).	8	
UNIT-IV	8	**Risk of E – Commerce:** Overview, Security for E – Commerce, Security Standards, Firewall, Cryptography, Key Management, Password Systems, Digital certificates, Digital signatures.	8	16

Text Books:

1. E-Commerce, M.M. Oka, EPH
2. Kalakotia, Whinston : Frontiers of Electronic Commerce , Pearson Education.
3. Bhaskar Bharat : Electronic Commerce - Technologies & Applications.TMH
4. Loshin Pete, Murphy P.A. : Electronic Commerce , Jaico Publishing Housing.
5. Murthy : E – Commerce , Himalaya Publishing.
6. E – Commerce : Strategy Technologies & Applications, Tata McGraw Hill.
7. Global E-Commerce, J. Christopher & T.H.K. Clerk, University Press
8. Beginning E-Commerce, Reynolds, SPD
9. Krishnamurthy, E-Commerce Mgmt, Vikas

Branch: BCA	Semester-VI
Subject Code: 6104	Lecture: 04 Credit: 04
Subject Title	ELECTIVE-2 ARTIFICIAL INTELLIGENCE

Modules	Sr. No.	Topic and Details	No of Lectures Assigned	Marks Weight age %
UNiT-I	1	Introduction: Intelligence Agents , Agents and Environment , Good Behavior: The Concept of Rationality, Performance measures, Rationality, Omniscience, learning, and autonomy The nature of environments, Specifying the task environment, Properties of task environments	5	10
	2	Solving Problem by searching: Problem Solving Agents, Well-Defined problems and solutions, formulating problems 3.2 Example problems, Toy problems, Real world problems , Searching for solutions, Measuring problem solving performance, Uniformed search strategies, Breadth first search, Depth first search, Depth limited search, Iterative depending depth first search, Bidirectional search, Comparing uniformed search strategies	6	12
UNIT-II	3	Informed Search and Exploration: Informed search strategies, Greedy best first search, A* search· Minimizing the total estimated solution cost, Memory bounded heuristic search. learning to search better , Heuristic function, The effect of heuristic accuracy on performance, Inventing admissible heuristic functions, Learning heuristic from experience 4.3 Local search algorithms and optimization problems, Hill-climbing search, simulated annealing search, local beam search, genetic algorithm	6	12
	4	Adversarial Search: Games , Optimal Decision in Games, Optimal strategies, The minimax algorithm, Optimal decision in multiplayer games, Alpha Beta Pruning, 5.4 Imperfect, Real time decision, Evaluation functions, Cutting of search	5	10
UNIT-III	5	Logic Agents: Knowledge based agents , The Wumpus world , Logic Propositional Logic: A very simple logic, Propositional Logic: A very simple logic, Syntax, Semantics, A Simple knowledge base, Inference, Equivalence, validity. and satisfiability ,Reasoning patterns in propositional logic, Resolution, Forward and backward chaining	6	12
	6	First Order Logic: Representation Revisited , Syntax and semantics of First order logic, Model for first order logic, symbol and interpretations, Terms, Atomic Sentence, Complex Sentence, Quantifier, Equality, Using first order logic, assertion and queries in first order logic, The kinship domain, Number Sets and lists, The wumpus world	6	12
UNIT-IV	7	Learning from Observation: Forms of learning , Inductive learning, Learning Decision trees Decision	8	16

	Topic and Details	No of Lectures	Marks
	trees as performance elements, Expressiveness of decision tree. Inducing decision trees from examples, Choosing attribute tests, Assessing the performance of the learning algorithm, Ensemble learning		
	Knowledge in Learning: A logic formulation of learning. Examples and hypotheses, Current best hypothesis search, Knowledge in learning, Some simple examples, Some general schemes, Explanation based learning, Extracting general rules from examples, Improving efficiency	8	16
Total		50	100

Textbook:
1. Stuart Russell, Peter Norvig, "Artificial Intelligence (A Modern Approach)" , Second Edition , Pearson Education, Limited, 01-Mar-2005

References:
1. N. P. Padhy "Artificial Intelligence and Intelligence Systems", Oxford University Press, 21-Apr-2005
2. Patrick Henry Winston, "Artificial Intelligence"1921
3. George F. Luger, "Artificial Intelligence (Structure & Strategies for Complex Problem solving):"
4. Rich & Knight, "Artificial Intelligence", McGraw-Hill, 1991
5. Neeta Deshpande, "Artificial Intelligence" , Technical Publication –Pune

Branch: BCA	Semester-VI
Subject Code: 6104	Lecture: 04 Credit: 04
Subject Title	ELECTIVE-3 WEB TECHNOLOGY

Modules	Sr. No.	Topic and Details	No of Lectures Assigned	Marks Weight age %
UNIT-I	1	**General:** HTTP: Overview – HTTP Basics, Client request, Server response; HTTP Headers; Session Management – Persistent connections, Cookies. General concepts on web server: Configuration & Administration; virtual hosting General concepts of caching proxy server, Web security SSL, Digital signatures; Authentication.	8	16
UNIT-II	2	**Client side technologies** HTML: Structure of HTML Document – Meta tags, Links, Text, Lists, Tables, Inclusions (Objects, Images, applets and Multimedia	10	20

		Presentation of HTML document – Style sheets, Alignment, fonts, frames; Interactive HTML document – Forms, Scripts, XML: Well-formed, Valid document, Document Type Definitions and Document Object Model Client Side JavaScript: Object Reference – Objects, Methods and Properties, Event Handlers; Language constructs – Statements and Operators.		
UNIT-III	3	PERL & CGI CGI architecture Intro PERL with Features, Working with Strings and Arrays, File Handling, Pattern matching & formatting, Creating and using subroutines, Using PERL for CGI scripting Java Servlets & JSP Active Server Pages, Overview, Request, Response, Applications, Sessions, Cookies, Data Store Access, Web Applications, SSI: SSI Directives; SSI Environment Variables, SSI Formats.	10	20
UNIT-IV		ASP Introduction : ASP Install, ASP Syntax, ASP Variables, ASP Procedures, ASP Forms, ASP Cookies, ASP Session, ASP Application, ASP Server, ASP Error, ASP File System, ASP Text Stream, ASP Drive, ASP File, ASP Folder, ASP Dictionary	12	24
	4	Apache Tomcat Server Obtaining and Installing Apache Tomcat, Tomcat Directory Structure - bin, conf, logs, server, work, temp, webapps, Web Application Directory Structure, Deploying HTML and JSP Pages, Configuring Tomcat - Editing server.xml, Deploying Web Applications - Deployment Descriptors, web.xml configuration file Tomcat Manager - Deploying and Managing Web Application using the Tomcat Manager, Creating a WAR File Configuring Tomcat to Connect to a Database Configuring Security on Tomcat, Granting Permissions to Java Apps	10	20
		Total	50	100

References:

1. Beginning Web Programming with HTML, XHTML, CSS & JavaScript by Jon Duckett, Wrox.
2. Webmaster in a Nutshell by Stephen Spainhour, O'Reilly and Associates.
3. JavaScript: The Definitive Guide by David Flanagan, O'Reilly and Associates.
4. Beginning ASP 3.0 by David Buser and Others, Wrox.

Syllabus- B.C.A. (Revised in 2013- With effective from 2013-14 Batch)

Branch: BCA	Semester-VI
Subject Code: 6201	Practical: 04 Credit: 04
Subject Title	Project*

Module	Sr. No.	Topic and Details	No of Lectures/Practicals Assigned	Marks Weight age %
	1	Problem Definition	5	8
	2	Analysis	5	8
	3	Design	5	8
	4	Coding	25	10
	5	Testing	5	10
	6	Demonstration & Project Report	5	6
		Total	50	100

Prepare and submit a progress report in stipulated time. Panel consisting of two/three teachers (internal) will evaluate the progress work, presentation, and project coding and implantation work. There shall be a guide from institution. Co-guide from an industry is recommended in case of industry sponsored projects. Each candidate should have documented copy of the project certified by head/principal, in order to appear for project examination. A group recommended of 2 to 4 students. (maximum 5 in case of special projects). Each student shall individually involve in separate module/activity of the project. Prepare and submit a progress report in stipulated time. Panel consisting of two experts (one internal and one external) should evaluate the progress, presentation, and project work. Marks should be distributed on the basis of Understanding the project, depth of knowledge achieved in regard to solution providing, Approach and methodologies suggested towards solution, report writing, presentation, technical content, prototype implemented. and references used, etc. The time allotted for presentation is maximum 30 minutes. The candidate will be examined by the examiners on 50:50 basis. In case of dispute, decision by external will be final.