

**DON BOSCO ARTS & SCIENCE COLLEGE**  
**(Affiliated to Kannur University)**  
**ANGADIKADAVU, IRITTY, KANNUR**



**COURSE PLAN**

**BCA**

**SEMESTER - 5**

**ACADEMIC YEAR 2016 - 17**

SL No.	Name of Subjects	Name of the Teacher	Duty Hours per week	
	<b>V Sem BCA (2014 - 17)</b>			
1.	5B13 BCA - Software Engineering	Hebin Layola	4	
2.	5B14 BCA - Data Communication & Networks	Soniya Jose	4	
3.	5B15 BCA - Enterprise Java Programming	Mullu Joy	8	
4.	5B16 BCA - C# and .Net Programming	Sindhu P. M	7	
5.	5D02 BCA - Web Technology	Sindhu P. M	2	

### TIME TABLE

Day	9.50am - 10.45am	10.45am - 11.40am	11.55am - 12.50pm	1.40pm - 2.35pm	2.35pm - 3.30pm
1	5B16 BCA - C# and.Net Programming	5B14 BCA - Data Communication & Networks	5B13 BCA - Software Engineering	5B15 BCA - Enterprise Java Programming	5B16 BCA - C# and.Net Programming
2	5B15 BCA - Enterprise Java Programming	5B16 BCA - C# and.Net Programming	5D02 BCA - Web Technology	5B14 BCA - Data Communication & Networks	5B15 BCA - Enterprise Java Programming
3	5B13 BCA - Software Engineering	5B15 BCA - Enterprise Java Programming	5D02 BCA - Web Technology	5B15 BCA - Enterprise Java Programming	5B14 BCA - Data Communication & Networks
4	5B14 BCA - Data Communication & Networks	5B16 BCA - C# and.Net Programming	5B15 BCA - Enterprise Java Programming	5B16 BCA - C# and.Net Programming	5B13 BCA - Software Engineering
5	5B16 BCA - C# and.Net Programming	5B15 BCA - Enterprise Java Programming	5B16 BCA - C# and.Net Programming	5B13 BCA - Software Engineering	5B15 BCA - Enterprise Java Programming

## **5B13 BCA - SOFTWARE ENGINEERING**

**Contact hours per week:** 4 Theory

**Credit:** 3

**Aim:** To introduce basics of methodology of Computer Science.

**Objectives:** 1. Understand the basic processes in software Development life cycle.

2. Familiarize with different models and their significance.
3. Approach software development in a systematic way.
4. To familiarize students with requirement engineering and classical software design techniques .
5. To introduce objected oriented design concepts. 6. To familiarize with various Software

### **SYLLABUS**

**Module 1:** Introduction to software engineering-Definition, program versus software, software process, software characteristics, brief introduction about product and process, software process and product matrices; Software life cycle models – Definition, waterfall model, increment process model, evolutionary process model, selection of the life cycle model.

**Module 2:** Software Requirement Analysis and Specification – Requirements engineering, types of requirements, feasibility studies, requirement elicitation, various steps of requirement analysis, requirement documentation, requirement validation. \*\* [An example which illustrate various stages in requirement analysis.]

**Module 3:** Software design – definition, various types, objectives and importance of design phase, modularity, strategy of design, function oriented design, IEEE recommended practice for software design descriptions.

**Module 4:** Objected Oriented Design – Analysis, design concept, design notations and specifications, design methodology. \*\*[case study based on Objected Oriented Design]

**Module 5:** Software Testing – What is testing, Why should we test, who should do testing? Test case and Test suit, verification and validation, alpha beta and acceptance testing, functional testing , techniques to design test cases , Boundary value analysis, equivalence class testing, decision table based testing , cause effect graphing techniques ; structural testing , path testing , cyclomatic complexity , Graph matrices , Data flow testing , mutation testing , levels of testing , unit testing , integration testing , system testing , validation testing , a brief introduction about debugging and various testing tools.

**Text Book:** 1. Software Engineering (Third Edition), K K Aggarwal, Yogesh singh, New age International Publication (For unit 1,2,3,5 and case study of unit 4)

2. An integrated approach to software Engineering (Second Edition ) , Pankaj Jalote , Narosa Publishing House - (For Unit 4 )

**References:** 1. Software Engineering (Seventh edition), Ian Sommerville – Addison Wesley

2. Software Engineering A practitioners approach (Sixth Edition), Roger S Pressman - Mc Graw Hill.

3. Fundamentals of Software Engineering (Second Edition), Carlo Ghezzi, Mehdi Jazayeri, Dino Mandrioli - Pearson Education.

**TEACHING SCHEDULE**

No of Weeks	Dates	Session	Topic
1	01-06-2016 To 03-06-2016	1	Introduction to Software Engineering-Definition
		2	Program versus software
		3	Software characteristics
2	06-06-2016 To 10-06-2016	4	Software Process
		5	Brief introduction about product and process
		6	Software process and product matrices
		7	Software life cycle models-definition
3	13-06-2016 To 17-06-2016	8	Waterfall model, increment process model
		9	Iterative Enhancement model
		10	Increment process model, Rapid application development model
		11	Evolutionary process model, prototyping model
4	20-06-2016 To 24-06-2016	18	Spiral model
		19	Selection of a life cycle
		20	Test paper
		21	Software requirement analysis and specification: Requirement engineering
5	27-06-2016 To 01-07-2016	25	Types of requirements, Feasibility studies
		26	Requirement Elicitation: Interview, Brainstorming sessions
		27	Requirement Elicitation: The use case approach, use case diagram
		28	Requirement analysis: requirement analysis steps
6	04-07-2016 To 08-07-2016	32	Data flow diagram
		33	Data dictionaries
		34	ER diagram
		<b>06-Jul</b>	<b>Ramsan - Holiday</b>
7	11-07-2016 To 15-07-2016	38	Requirement documentation, Characteristics of a good SRS
		39	Requirement validation
		40	Test paper
		41	Software design: definition, various types
8	18-07-2016 To 22-07-2016	45	Objectives and importance of design phase,
		46	Modularity : Coupling, Types of coupling
		47	Module II exam
		48	Modularity : Cohesion, Types of cohesion
9	25-07-2016 To 29-07-2016	52	Strategy of design : Bottom-Up design, Top-Down design
		53	Function oriented design: Design-Notation, Structure Chart
		54	IEEE Recommended practice for software design description: Definitions, Purpose of an SDD

No of Weeks	Dates	Session	Topic
		55	IEEE Recommended practice for software design description : Design Description Information Content
10	01-08-2016 To 05-08-2016	59	description : Design Description Information Content
		<b>02-Aug</b>	<b>Karkidaka Vavu - Holiday</b>
		60	IEEE Recommended practice for software design description : Design Description Information Content
		61	Test paper
11	08-08-2016 To 12-08-2016	65	Object Oriented Design : Analysis
		66	Design Concept
		67	Design Notations and Specifications
		68	Design Methodology
12	15-08-2016 To 19-08-2016	<b>15-Aug</b>	<b>Independence Day - Holiday</b>
		<b>16-Aug</b>	<b>First Internal for UG/PG</b>
			<b>First Internal for UG/PG</b>
			<b>First Internal for UG/PG</b>
13	22-08-2016 To 26-08-2016		<b>First Internal for UG/PG</b>
		<b>23-Aug</b>	<b>First Internal for UG/PG</b>
		<b>24-Aug</b>	<b>Sree Krishna Jayanthi - Holiday</b>
		72	Design Methodology
14	29-08-2016 To 02-09-2016	76	Revision : Module 3
		77	Test paper
		78	Software Testing: What is Testing?, Why should we Test?, Who should do Testing?
		79	Test case and Test Unit
15	05-09-2016 To 09-09-2016	83	Verification and validation
		84	Alpha Beta and Acceptance testing ,functional testing
		85	Techniques to design test cases , Boundary value analysis
		86	Equivalence class testing
		<b>09-Sep</b>	<b>Onam Celebration</b>
16	12-09-2016 To 16-09-2016		<b>Onam Holiday</b>
			<b>Onam Holiday</b>
			<b>Onam Holiday</b>
			<b>Onam Holiday</b>
			<b>Onam Holiday</b>
17	19-09-2016 To 23-09-2016	89	Equivalence class testing
		90	Decision table based testing, cause effect graphing techniques.
		91	Structural Testing, Path testing, Cyclomatic complexity
		92	Graph matrices , Data flow testing ,mutation testing
18	26-09-2016	96	Levels of testing , Unit Testing

No of Weeks	Dates	Session	Topic
	To 30-09-2016	97	Integration Testing , System Testing
		98	Validation testing, a brief introduction about debugging and various testing tools.
		99	Module 1: Question paper discussion
19	26-09-2016 To 30-09-2016	103	Revision
		104	Module 2: Question paper discussion
		105	Revision
		106	Module 3: Question paper discussion
20	03-10-2016 To 07-10-2016	110	Revision
		111	Module 4: Question paper discussion
		112	Revision
		113	Module 5: Question paper discussion
		<b>07-Oct</b>	<b>SLATE FEST</b>
21	10-10-2016 To 14-10-2016	<b>10-Oct</b>	<b>Mahanavami - Holiday</b>
		<b>11-Oct</b>	<b>Vijayadhasami - Holiday</b>
		<b>12-Oct</b>	<b>Muharam - Holiday</b>
		116	Revision
		<b>14-Oct</b>	<b>Second Internal for UG/PG</b>
22	17-10-2016 To 21-10-2016		<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
23	24-10-2016 To 28-10-2016	118	Question paper discussion
			<b>Study Leave</b>
			<b>Study Leave</b>
			<b>Study Leave</b>
24	31-10-2016 To 04-11-2016		<b>Study Leave</b>
			<b>Study Leave</b>
		<b>02-Nov</b>	<b>V Semester UG Examination Begins</b>

## **5B14 BCA - DATA COMMUNICATION & NETWORKS**

**Hours per Week: Theory – 4**

**Credit: 3**

**Objectives:**

- Understand the basics of data communication
- Familiarize with OSI reference model
- To familiarize students with layers of communication model
- To introduce concepts of network security

### **Module I**

Introduction to data communication, important elements /components of datacommunication, Data transmission- Analog, Digital. Transmission media- Guided media,Unguided media. Synchronous / Asynchronous data transmission.Line configuration –Simplex, Half duplex, Duplex.Network topologies – star, Bus, ring, Mesh.Computernetworks, Use, network hardware, network structure- point to point connection, multicast,broadcast, classification of networks-LAN, WAN, Man. Network software – protocolhierarchies. design issues for layers, interfaces and services- connection oriented,connection less.

### **Module II**

Reference models, the OSI reference model, TCP / IP reference model.Comparison between OSI and TCP / Ip models.Data Link Layer , Design issues, Servicesto network layer, Framing-character count, character stuffing, bit stuffing, physical layercoding violation. Error control, flow control, Elementary data link protocols- unrestrictedsimplex protocol, simplex stop and wait protocol, simplex protocol for a noisy channel.

### **Module III**

Network layer, design issues, services to the transport layer, routing algorithmsadaptive,non adaptive algorithms, optimality principle, dijkstras shortest path routingalgorithm, flow based routing, hierarchical routing, congestion control algorithms – theleaky bucket algorithm, the token bucket algorithm.

### **Module IV**

Transport layer, design issues, connection management-addressing, establishingand releasing connection, transport layer protocols- TCP, UDP

### **Module V**

Application layer, network security, traditional cryptography, substitution ciphers,transposition ciphers, fundamental principles, secret key algorithm, data encryptionstandard, DES chaining, DES breaking.Public key algorithm, RSA algorithm.

### **Text books**

1. A S Tanenbaum . Computer Networks TMH

### **References**

1. B Forousan, Introduction to data communication and networking

2. Data communication and Networks, Achyut S. godbole, TMH

3. Computer Networks – fundamentals and Applications, Rajesh,Easearakumar&Balasubramaian, Vikas pub.

**TEACHING SCHEDULE**

No of Weeks	Dates	Session	Topic
1	01-06-2016 To 03-06-2016	1	Introduction to data communication
		2	Important elements /components of data communication
		3	Data transmission- Analog, Digital.
2	06-06-2016 To 10-06-2016	4	Transmission media- Guided media, Unguided media.
		5	Guided media
		6	Unguided media
		7	Synchronous / Asynchronous data transmission
3	13-06-2016 To 17-06-2016	8	Line configuration –Simplex, Half duplex, Duplex.
		9	Network topologies – star, Bus, ring, Mesh
		10	Computer networks, Use, network hardware
		11	Network structure- point to point connection, multicast, broadcast
4	20-06-2016 To 24-06-2016	12	Classification of networks-LAN, WAN, Man.
		13	Network software – protocolhierarchies
		14	Design issues for layers
		15	Interfaces and services
5	27-06-2016 To 01-07-2016	16	Connection oriented, connection less
		17	Class test for Module 1
		18	Reference models
		19	The OSI reference model
6	04-07-2016 To 08-07-2016	20	TCP / IP reference model.
		21	Comparison between OSI and TCP / Ip models
		<b>06-Jul</b>	<b>Ramsan - Holiday</b>
		22	Data Link Layer , Design issues, Services to network layer
7	11-07-2016 To 15-07-2016	23	Framing- character count, character stuffing
		24	Bitt stuffing, physical layercoding violation.
		25	Error control, flow control
		26	Elementary data link protocols- unrestrictedsimplex protocol, simplex stop and wait protocol
8	18-07-2016 To 22-07-2016	27	Simplex protocol for a noisy channel
		28	Class test for Module 2
		29	Network layer, design issues
		30	Services to the transport layer
9	25-07-2016 To 29-07-2016	31	Routing algorithmsadaptive, non-adaptive algorithms
		32	Optimality principle
		33	Dijkstras shortest path routingalgorithm
		34	Flow based routing
10	01-08-2016 To	35	Hierarchical routing
		<b>02-Aug</b>	<b>KarkidakaVavu - Holiday</b>



No of Weeks	Dates	Session	Topic
	05-08-2016	36	Congestion control algorithms
		37	Theleaky bucket algorithm
		38	The token bucket algorithm.
11	08-08-2016 To 12-08-2016	39	Class test for Module 3
		40	Transport layer, design issues
		41	Connection management
		42	Addressing
12	15-08-2016 To 19-08-2016	<b>15-Aug</b>	<b>Independence Day - Holiday</b>
		<b>16-Aug</b>	<b>First Internal for UG/PG</b>
			<b>First Internal for UG/PG</b>
			<b>First Internal for UG/PG</b>
			<b>First Internal for UG/PG</b>
13	22-08-2016 To 26-08-2016		<b>First Internal for UG/PG</b>
		<b>23-Aug</b>	<b>First Internal for UG/PG</b>
		<b>24-Aug</b>	<b>Sree Krishna Jayanthi - Holiday</b>
		43	Establishingand releasing connection
		44	Transport layer protocols
14	29-08-2016 To 02-09-2016	45	TCP
		46	UDP
		47	Class test for Module 4
		48	Application layer
15	05-09-2016 To 09-09-2016	49	Network security
		50	Traditional cryptography
		51	Substitution ciphers
		52	Transposition ciphers
		<b>09-Sep</b>	<b>Onam Celebration</b>
16	12-09-2016 To 16-09-2016		<b>Onam Holiday</b>
			<b>Onam Holiday</b>
			<b>Onam Holiday</b>
			<b>Onam Holiday</b>
			<b>Onam Holiday</b>
17	19-09-2016 To 23-09-2016	53	Fundamental principles
		54	Secret key algorithm,
		55	Data encryptionstandard
		56	DES chaining.
18	26-09-2016 To 30-09-2016	57	DES breaking.
		58	Public key algorithm,
		59	RSA algorithm
		60	Class test for Module 5
19	26-09-2016 To 30-09-2016	61	Revision Module 1
		62	Revision Module 2
		63	Revision Module 3
		64	Revision Module 4

No of Weeks	Dates	Session	Topic
20	03-10-2016 To 07-10-2016	65	Revision Module 5
		66	Previous year question paper discussion
		67	Previous years question paper discussion
		68	Previous years question paper discussion
21	10-10-2016 To 14-10-2016	<b>10-Oct</b>	<b>Mahanavami - Holiday</b>
		<b>11-Oct</b>	<b>Vijayadhasami - Holiday</b>
		<b>12-Oct</b>	<b>Muharam - Holiday</b>
		69	Previous years question paper discussion
		<b>14-Oct</b>	<b>Second Internal for UG/PG</b>
22	17-10-2016 To 21-10-2016		<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
23	24-10-2016 To 28-10-2016	70	Previous year question paper discussion
		71	Previous year question paper discussion
			<b>Study Leave</b>
			<b>Study Leave</b>
			<b>Study Leave</b>
24	31-10-2016 To 04-11-2016		<b>Study Leave</b>
			<b>Study Leave</b>
		<b>02-Nov</b>	<b>V Semester UG Examination Begins</b>

## **5B15 BCA - ENTERPRISE JAVA PROGRAMMING**

**Hours per Week: Theory - 4      Practical – 4      Credit: 3**

### **Objectives**

- 1: To understand the Enterprise Java platform.
- 2: To provides an API and runtime environment for developing and running large-scale
- 3: To develop programming skills in multi-tiered, scalable, reliable, and secure network application.

### **Module I:**

Java Database Connectivity: JDBC architecture; Drivers, JDBC-ODBC bridge, native API partly java driver, Net Protocol all Java driver, Native protocol all Java driver; Connecting to Database; statements; Multiple result sets; Large data types; Handling Errors; SQL warning; Metadata, database meta data, result set meta data

### **Module II:**

Remote Method Invocation: RMI architecture; RMI Object services; Naming/registry service, object activation service, distributed garbage collection; Defining Remote objects; Key RMI classes for remote object implementations; Stubs and skeletons; Accessing remote object as a client; Remote method arguments and return values; Factory classes; Dynamically loaded classes; Configuring clients and servers for remote class loading;

### **Module III:**

Java Servlets: Life cycle; HTTP Servlets, forms and interaction; POST, HEAD and other requests; Servlet responses; Servlet requests; Error handling, status codes; Servlet chaining; Custom Servlet Initialisation; Thread safety; Server side includes; Cookies; Session tracking

### **Module IV:**

Common Object Request Broker Architecture: Introduction to CORBA, About Object management group, CORBA architecture, architectural similarities, CORBA versus Java RMI, CORBA services, CORBA facilities-Vertical CORBA facilities, Horizontal facilities. CORBA domains. IDL Compiler, Interface definition language, IDL stub, IDL Skelton interface , Repositories, Object request broker; Naming service

### **Module IV:**

Inter-ORB communication; Creating CORBA objects; IDL, modules, interfaces, data members and methods; IDL and Java; Simple server class, helper class, holder class, client and server stubs; Initializing ORB, Registering with a naming service; Adding objects to a naming context; Finding remote objects; Initial ORB references

### **Reference:**

- Java Enterprise in a nutshell by David Flanagan and Jim Parley, O'Reilly Associates

## TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	01-06-2016 To 03-06-2016	1	Introduction to JDBC
		2	JDBC architecture
		3	Drivers, JDBC-ODBC bridge, native API partly java driver
2	06-06-2016 To 10-06-2016	4	Net Protocol all Java driver, Native protocol all Java driver
		5	Connecting to Database
		6	Statements
		7	Multiple result sets
		8	Practical lab
		9	Practical lab
		10	Practical lab
3	13-06-2016 To 17-06-2016	11	Practical lab
		12	Large data types; Handling Errors
		13	SQL warning; Metadata
		14	database meta data, result set meta data
		15	Test Paper Module I
		16	Practical lab
		17	Practical lab
		18	Practical lab
4	20-06-2016 To 24-06-2016	19	Practical lab
		20	Introduction to Remote Method Invocation: RMI architecture
		21	RMI Object services; Naming/registry service, object activation service
		22	Distributed garbage collection
		23	Defining Remote objects; Key RMI classes for remote object implementations
		24	Practical lab
		25	Practical lab
		26	Practical lab
5	27-06-2016 To 01-07-2016	27	Practical lab
		28	Stubs and skeletons
		29	Accessing remote object as a client
		30	Remote method arguments and return values
		31	Factory classes
		32	Practical lab
		33	Practical lab
		34	Practical lab
35	Practical lab		
		37	Configuring clients and servers for remote class loading

No of Weeks	Dates	Session	Topic
		38	Configuring clients and servers for remote class loading
		39	Test Paper Module II
		<b>06-Jul</b>	<b>Ramsan - Holiday</b>
		40	Practical lab
		41	Practical lab
		42	Practical lab
7	11-07-2016 To 15-07-2016	43	Introduction to Java Servlets: Life cycle of servlets
		44	HTTP Servlets
		45	forms and interaction; POST, HEAD and other requests
		46	Servlet responses
		47	Practical lab
		48	Practical lab
		49	Practical lab
		50	Practical lab
8	18-07-2016 To 22-07-2016	51	Servlet requests
		52	Error handling
		53	Status codes
		54	Servlet chaining
		55	Practical lab
		56	Practical lab
		57	Practical lab
		58	Practical lab
9	25-07-2016 To 29-07-2016	59	Custom Servlet Initialisation
		60	Thread safety
		61	Server side includes
		62	Cookies
		63	Practical lab
		64	Practical lab
		65	Practical lab
		66	Practical lab
10	01-08-2016 To 05-08-2016	67	Session tracking
		<b>02-Aug</b>	<b>Karkidaka Vavu - Holiday</b>
		68	Test Paper Module III
		69	Common Object Request Broker Architecture: Introduction to CORBA
		70	About Object management group
		71	Practical lab
		72	Practical lab
11	08-08-2016 To 12-08-2016	73	CORBA architecture
		74	Architectural similarities
		75	CORBA versus Java RMI

No of Weeks	Dates	Session	Topic
		76	CORBA services
		77	Practical lab
		78	Practical lab
		79	Practical lab
		80	Practical lab
12	15-08-2016 To 19-08-2016	<b>15-Aug</b>	<b>Independence Day - Holiday</b>
		<b>16-Aug</b>	<b>First Internal for UG/PG</b>
			<b>First Internal for UG/PG</b>
			<b>First Internal for UG/PG</b>
13	22-08-2016 To 26-08-2016		<b>First Internal for UG/PG</b>
		<b>23-Aug</b>	<b>First Internal for UG/PG</b>
		<b>24-Aug</b>	<b>Sree Krishna Jayanthi - Holiday</b>
		81	CORBA facilities
		82	Vertical CORBA facilities
		83	Horizontal facilities
		84	Practical lab
14	29-08-2016 To 02-09-2016	85	Practical lab
		86	CORBA domains
		87	IDL Compiler
		88	Interface definition language
		89	IDL stub
		90	Practical lab
		91	Practical lab
		92	Practical lab
15	05-09-2016 To 09-09-2016	93	Practical lab
		94	IDL Skelton interface
		95	Repositories
		96	Object request broker;
		97	Naming service
		98	Practical lab
		99	Practical lab
<b>09-Sep</b>	<b>Onam Celebration</b>		
16	12-09-2016 To 16-09-2016		<b>Onam Holiday</b>
			<b>Onam Holiday</b>
			<b>Onam Holiday</b>
			<b>Onam Holiday</b>
			<b>Onam Holiday</b>
17	19-09-2016 To 23-09-2016	101	Inter-ORB communication; Creating CORBA objects
		102	IDL
		103	Modules, interfaces

No of Weeks	Dates	Session	Topic
		104	Data members and methods
		105	Practical lab
		106	Practical lab
		107	Practical lab
		108	Practical lab
18	26-09-2016 To 30-09-2016	109	IDL and Java
		110	Simple server class
		111	Helper class, holder class
		112	Client and server stubs
		113	Practical lab
		114	Practical lab
		115	Practical lab
19	26-09-2016 To 30-09-2016	116	Practical lab
		117	Initializing ORB
		118	Adding objects to a naming context
		119	Finding remote objects
		120	Initial ORB references
		121	Practical lab
		122	Practical lab
		123	Practical lab
20	03-10-2016 To 07-10-2016	124	Practical lab
		125	Registering with a naming service
		126	Test Paper Module V
		127	Revision
		128	Revision
		129	Practical lab
		130	Practical lab
21	10-10-2016 To 14-10-2016	<b>07-Oct</b>	<b>SLATE FEST</b>
		<b>10-Oct</b>	<b>Mahanavami - Holiday</b>
		<b>11-Oct</b>	<b>Vijayadhasami - Holiday</b>
		<b>12-Oct</b>	<b>Muharam - Holiday</b>
		131	Revision
		132	Revision
22	17-10-2016 To 21-10-2016	<b>14-Oct</b>	<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
23	24-10-2016 To 28-10-2016	133	Question paper discussion
		134	Question paper discussion
		135	Question paper discussion
		136	Model exam

No of Weeks	Dates	Session	Topic
			Study Leave
			Study Leave
			Study Leave
24	31-10-2016 To 04-11-2016		Study Leave
			Study Leave
		<b>02-Nov</b>	<b>V Semester UG Examination Begins</b>



## **5B16 BCA - C# AND .NET PROGRAMMING**

**No. of Credits: 2**

**No. of Contact hours: 7 Hrs per week / 126 Hrs**

### **Objectives**

- To expose students to current trends and styles in programming
- To familiarize simple, modern, general-purpose, object-oriented programming language.

### **Module I**

Introduction to C# - Evolution , Characteristics, applications. Understanding .NET Origin of .NET Technology, .NET Framework, Common Language Runtime (CLR), .NET Approach. Overview of C#- Program Structure, A Simple C# Program, Namespaces, CommandLine Argument, Errors.

### **Module II**

Basic concepts of Programming: Literals, Variables, Boxing and Unboxing, Data types, Expressions, Branching, Looping, Methods, Arrays, Strings, Structures, Enumerations.

### **Module III**

Object Oriented aspects of C# ,Classes, Objects, Inheritance, Polymorphism, Interfaces, Operator Overloading, Delegates, Events, Errors and Exceptions, Multithreading.

### **Module IV**

Application Development on .NET Web Applications – Web form Fundamentals, Web form Events, Webform Life cycle, Creating a Web Application, Web Srvices. Windows Applications – Creating a Windows Application.

### **Module V**

Database Access and .NET Components Accessing Data with ADO.NET Assemblies, Versioning, Attributes, Reflection, Viewing Meta Data, Type Discovery, Reflecting on a type, Marshalling, Remoting.

### **Text Books**

1. Programming in C#, E.Balagurusamy (Unit I, II)
2. Programming in C#, J. Liberty 2nd Edition – O'Reilly (Unit III, IV, V)

### **Reference**

- 1 C# Programming Bible, Jeff Ferguson, Brian Patterson, Jason Beres, Wiley Publishing Inc., Reprint 2006.
- 2 Programming .Net , Jeff Prosise, , 2nd Edition, WP Publishers & Distributors Pvt. Ltd, 2009.
- 3 Professional .Net Framework , Kevin Hoffman & Jeff Gabriel, , 1st Edition, Wrox Press Publishers, 2006.

## TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	01-06-2016 To 03-06-2016	1	Introduction to C#
		2	Evolution
		3	Characteristics
2	06-06-2016 To 10-06-2016	4	Applications
		5	Understanding .NET Origin of .NET Technology
		6	.NET Framework
		7	Common Language Runtime (CLR)
		8	.NET Approach.
		9	Overview of C#- Program Structure
		10	A Simple C# Program
3	13-06-2016 To 17-06-2016	11	Practical lab
		12	Namespaces
		13	Practical lab
		14	CommandLine Argument
		15	Practical lab
		16	Errors
4	20-06-2016 To 24-06-2016	17	Practical lab
		18	Module I exam
		19	Basic concepts of Programming: Literals
		20	Practical lab
		21	Practical lab
		22	Variables
		23	Practical lab
5	27-06-2016 To 01-07-2016	24	Practical lab
		25	Boxing and Unboxing
		26	Practical lab
		27	Data types
		28	Practical lab
		29	Expressions
6	04-07-2016 To 08-07-2016	30	Practical lab
		31	Practical lab
		32	Branching
		33	Practical lab
		34	Looping
		<b>06-Jul</b>	<b>Ramsan - Holiday</b>
		35	Practical lab
36	Methods		
7	11-07-2016 To	37	Practical lab
		38	Arrays
		39	Practical lab

No of Weeks	Dates	Session	Topic
	15-07-2016	40	Strings
		41	Practical lab
		42	Structures
		43	Practical lab
		44	Practical lab
8	18-07-2016 To 22-07-2016	45	Enumerations
		46	Practical lab
		47	Module II exam
		48	Object Oriented aspects of C#
		49	Practical lab
		50	Classes
9	25-07-2016 To 29-07-2016	51	Practical lab
		52	Objects, Inheritance
		53	Practical lab
		54	Polymorphism
		55	Practical lab
		56	Interfaces
		57	Practical lab
10	01-08-2016 To 05-08-2016	58	Practical lab
		59	Operator Overloading
		<b>02-Aug</b>	<b>Karkidaka Vavu - Holiday</b>
		60	Practical lab
		61	Delegates
		62	Practical lab
		63	Events
11	08-08-2016 To 12-08-2016	64	Practical lab
		65	Errors and Exceptions
		66	Practical lab
		67	Multithreading
		68	Practical lab
		69	Module III exam
12	15-08-2016 To 19-08-2016	70	Practical lab
		71	Practical lab
		<b>15-Aug</b>	<b>Independence Day - Holiday</b>
		<b>16-Aug</b>	<b>First Internal for UG/PG</b>
			<b>First Internal for UG/PG</b>
13	22-08-2016 To 26-08-2016		<b>First Internal for UG/PG</b>
		<b>23-Aug</b>	<b>First Internal for UG/PG</b>
		<b>24-Aug</b>	<b>Sree Krishna Jayanthi - Holiday</b>
		73	Practical lab
		74	Web form Fundamentals

No of Weeks	Dates	Session	Topic
		75	Practical lab
14	29-08-2016 To 02-09-2016	76	Web form Events
		77	Practical lab
		78	Webform Life cycle
		79	Practical lab
		80	Creating a Web Application
		81	Creating a Web Application
		82	Practical lab
15	05-09-2016 To 09-09-2016	83	Web Srvices
		84	Practical lab
		85	Windows Applications – Creating a Windows Application
		86	Practical lab
		87	Practical lab
		88	Module IV exam
		<b>09-Sep</b>	<b>Onam Celebration</b>
16	12-09-2016 To 16-09-2016		<b>Onam Holiday</b>
			<b>Onam Holiday</b>
			<b>Onam Holiday</b>
			<b>Onam Holiday</b>
			<b>Onam Holiday</b>
17	19-09-2016 To 23-09-2016	89	Practical lab
		90	Practical lab
		91	Database Access and .NET Components Accessing Data with ADO.NET Assemblies,
		92	Practical lab
		93	Database Access and .NET Components Accessing Data with ADO.NET Assemblies
		94	Practical lab
		95	Versioning
18	26-09-2016 To 30-09-2016	96	Practical lab
		97	Attributes
		98	Practical lab
		99	Reflection
		100	Practical lab
		101	Viewing Meta Data
		102	Practical lab
19	26-09-2016 To 30-09-2016	103	Type Discovery
		104	Practical lab
		105	Reflecting on a type
		106	Practical lab
		107	Marshalling
		108	Practical lab
		109	Practical lab

No of Weeks	Dates	Session	Topic
20	03-10-2016 To 07-10-2016	110	Remoting
		111	Practical lab
		112	Module V exam
		113	Practical lab
		114	Practical lab
		115	Practical lab
		<b>07-Oct</b>	<b>SLATE FEST</b>
21	10-10-2016 To 14-10-2016	<b>10-Oct</b>	<b>Mahanavami - Holiday</b>
		<b>11-Oct</b>	<b>Vijayadhasami - Holiday</b>
		<b>12-Oct</b>	<b>Muharam - Holiday</b>
		116	Revision
		117	Revision
		<b>14-Oct</b>	<b>Second Internal for UG/PG</b>
22	17-10-2016 To 21-10-2016		<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
23	24-10-2016 To 28-10-2016	118	Question paper discussion
		119	Question paper discussion
		120	Question paper discussion
		121	Model exam
			<b>Study Leave</b>
			<b>Study Leave</b>
			<b>Study Leave</b>
24	31-10-2016 To 04-11-2016		<b>Study Leave</b>
			<b>Study Leave</b>
		<b>02-Nov</b>	<b>V Semester UG Examination Begins</b>

## **5D02 BCA - WEB TECHNOLOGY**

**Credit: 2**

**Contact Hours/Week: Theory 2**

**Module -1:**

Introduction to Internet and WWW, Introduction to HTML, structure of HTML, HTML elements, attributes, syntax of tags , starting and ending tags, physical style tags, listing, labeling, grouping, images and linking

**Module-2:**

HTML Tables-tags-<tr>,<td>,<th> attributes. HTML Form-tag, attributes-type passwd, submit, radio, check, method, action.

**Module-3:**

Frames-<frame>, <frameset>, <iframe>, <noframe> and other important tags and attributes. Simple programs using frames.

**Module-4:**

Javascript- Introduction, data types, variables, operators, functions, objects, arrays. Client-side object hierarchy and document object Model, <script>, event handlers, javascript in urls. Windows and frames-dialog boxes, status line, navigator object, opening Windows, closing windows, Location object, history object.- Date object- math object- Accessing form object.

**Module-5:**

Introduction to PHP, advantages of PHP, PHP basics- operators and Flow Control, strings and arrays, creating functions.

**Text Books:**

1. HTML-Definitive Guide O'reilley 5th edn
2. Javascript-Definitive Guide O'reilley 6th edn

**Reference:**

1. Programming in PHP O'reilley
2. Complete reference in PHP-Steven Hozner
3. Beginning PHP5 (Wrox Programmer)
4. Complete reference HTML-Tata McGraw Hill

## TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	06-06-2016 To 10-06-2016	01	Introduction
		02	Introduction to Internet and WWW
2	13-06-2016 To 17-06-2016	03	Introduction to HTML
		04	Structure of HTML
3	20-06-2016 To 24-06-2016	05	HTML elements
		06	Attributes, syntax of tags , starting and ending tags
4	27-06-2016 To 01-07-2016	07	Physical style tags, listing, labeling
		08	Grouping, images and linking
5	04-07-2016 To 08-07-2016	09	Module I Exam
		<b>06-Jul</b>	<b>Ramsan - Holiday</b>
		10	HTML Tables-tags-<tr>,<td>,<th> attributes
6	11-07-2016 To 15-07-2016	11	HTML Form-tag, attributes-type passwd, submit
		12	Radio, check, method, action
7	18-07-2016 To 22-07-2016	13	Module II Exam
		14	Frames-<frame>, <frameset>
8	25-07-2016 To 29-07-2016	15	<iframe>, <noframe> and other important tags and attributes
		16	Simple programs using frames.
9	01-08-2016 To 05-08-2016	17	Module III Exam
		<b>02-Aug</b>	<b>Karkidaka Vavu - Holiday</b>
		18	Javascript- Introduction, data types, variables
10	08-08-2016 To 12-08-2016	19	Operators, functions
		20	Objects, arrays
11	15-08-2016 To 19-08-2016	<b>15-Aug</b>	<b>Independence Day - Holiday</b>
		<b>16-Aug</b>	<b>First Internal for UG/PG</b>
			<b>First Internal for UG/PG</b>
			<b>First Internal for UG/PG</b>
12	22-08-2016 To 26-08-2016		<b>First Internal for UG/PG</b>
		<b>23-Aug</b>	<b>First Internal for UG/PG</b>
		<b>24-Aug</b>	<b>Sree Krishna Jayanthi - Holiday</b>

No of Weeks	Dates	Session	Topic
		21	Client-side object hierarchy and document object Model
		22	<script>, event handlers, javascript in urls
13	29-08-2016 To 02-09-2016	23	Windows and frames-dialog boxes, status line,
		24	Navigator object, opening Windows, closing windows
14	05-09-2016 To 09-09-2016	25	Location object, history object.- Date object- math object- Accessing form object.
		26	Module IV Exam
		<b>09-Sep</b>	<b>Onam Celebration</b>
15	12-09-2016 To 16-09-2016		<b>Onam Holiday</b>
			<b>Onam Holiday</b>
			<b>Onam Holiday</b>
			<b>Onam Holiday</b>
16	19-09-2016 To 23-09-2016	27	Introduction to PHP
		28	Advantages of PHP
17	26-09-2016 To 30-09-2016	29	PHP basics- operators and Flow Control
		30	Strings and arrays
18	26-09-2016 To 30-09-2016	31	Creating functions.
		32	Module V Exam
19	03-10-2016 To 07-10-2016	33	Question Paper Discussion
		34	Question Paper Discussion
		<b>07-Oct</b>	<b>SLATE FEST</b>
20	10-10-2016 To 14-10-2016	<b>10-Oct</b>	<b>Mahanavami - Holiday</b>
		<b>11-Oct</b>	<b>Vijayadhasami - Holiday</b>
		<b>12-Oct</b>	<b>Muharam - Holiday</b>
		35	Seminar
21	17-10-2016 To 21-10-2016	<b>14-Oct</b>	<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
			<b>Second Internal for UG/PG</b>
22	24-10-2016 To 28-10-2016	36	Revision
		37	Model Exam
			<b>Study Leave</b>
			<b>Study Leave</b>



No of Weeks	Dates	Session	Topic
			Study Leave
23	31-10-2016		Study Leave
	To		Study Leave
	04-11-2016	<b>02-Nov</b>	<b>V Semester UG Examination Begins</b>