DON BOSCO ARTS & SCIENCE COLLEGE

ANGADIKADAVU

(Affiliated to Kannur University Approved by Government of Kerala)

ANGADIKADAVU P.O., IRITTY, KANNUR – 670706

COURSE PLAN

BCA

(2017 – 20)

SEMESTER - VI

ACADEMIC YEAR - (2019-20)

VI Semester BCA (2017 - 20)			
SL. No.	Name of Subjects with Code	Name of the Teacher	Duty Hours per week
1.	6B17 BCA – Web Technology	Sindhu P. M.	2
2.	6B24 BCA – Lab - VII Web Technology	Sindhu P. M.	3
3.	6B18 BCA – Data Mining & Data Warehousing	Hebin Layola	4
4.	6B19 BCA – E01 Information Security (Elective)	Vineetha Mathew	4
5.	6B20 BCA – E05 Network Programming (Elective)	Fincy Cyriac	4
6.	6B21 BCA – System Software	Sruthi N.	3
7.	6B25 BCA - Lab -VIII Project	Sruthi N.	5
	Name of Class Incharge	Fincy Cyriac	

TIME TABLE

Day	09.50 Am - 10.45 Am	10.45 Am - 11.40 Am	11.55 Am - 12.50 Pm	01.40 Pm - 02.35 Pm	02.35 Pm - 03.30 Pm
1	Hebin Layola 6B18BCA	Sindhu P.M. 6B17BCA	Vineetha Mathew 6B19BCA	Sruthi N. 6B21BCA	Fincy Cyriac 6B20BCA
2	Vineetha Mathew 6B19BCA	Sruthi N. 6B21BCA	Fincy Cyriac 6B20BCA	Hebin Layola 6B18BCA	Sindhu P.M. 6B24BCA
3	Sruthi N. 6B21BCA	Hebin Layola 6B18BCA	Sindhu P.M. 6B24BCA	Fincy Cyriac 6B20BCA	Vineetha Mathew 6B19BCA
4	Hebin Layola 6B18BCA	Sindhu P.M. 6B17BCA	Fincy Cyriac 6B20BCA	Vineetha Mathew 6B19BCA	Sindhu P.M. 6B24BCA
5	Sruthi N. 6B25BCA	Sruthi N. 6B25BCA	Sruthi N. 6B25BCA	Sruthi N. 6B25BCA	Hebin Layola 6B25BCA

Subject Code:	**6B17 BCA**
Subject Name:	**Web Technology**
No. of Credits:	**2**
No. of Contact Hours:	**36**
Hours per Week:	**2**
Name of the Teacher:	**Sindhu P. M.**

Objective: -

1. To enable students to program for the World Wide Web using HTML, JavaScript, PHP and MySQL.
2. To create static and dynamic web pages PHP and My SQL.
3. To impart basic knowledge in relational databases, SQL and , Client-server model.

Module –I: Introduction to internet and web, An overview of internet programming – WWW design issues. Introduction to HTML-structure of HTML, tags, attributes, syntax of tags, starting and ending tags, html doc elements-<html>,<title>,<body>,physical style tags, listing, labeling, grouping, <img>-<a>

Module – II: Table tags-<tr>,<td>,<th> attributes-height, width, rowspan, colspan, border, color. Form-tag attributes- type-passwd, submit, radio, check, method, action. Frame-<frame>, <frameset>, <iframe>, <noframe> and other important tags and attributes.

Module – III: JavaScript- data types, variables, function, object, array. 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 – IV: Intro to PHP and advantages of , PHP basic-functions, string, array, object, web techniques, database.

Module – V: Client-server model, introduction to cgi, environment variables, request-response model, encoding and decoding form data. Simple programming in CGI-database

Prescribed Textbook

1.HTML-Definitive Guide O'reilley
2.Programming in PHP O'reilley
3.Programming in CGI O'reilley
4.Javascript-Definitive Guide O'reilley

Books for Reference

1.Complete reference in PHP-Steven Hozner
2.Beginning PHP5 (Wrox Programer)
3.Complete reference HTML-Tata McGraw Hill

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	21-10-2019 To 25-10-2019	1	Introduction to internet and web.
		2	An overview of internet programming –WWW design issues.
		3	Introduction to HTML-structure of HTML.
2	28-10-2019 To 01-11-2019	4	tags, attributes, syntax of tags, starting and ending tags.
		5	Html doc elements-<html>,<title>,<body>.
		6	Physical style tags, listing, labeling.
3	04-11-2019 To 08-11-2019	7	Grouping, <img>-<a>
		8	MODULE 1 EXAM
		9	Table tags-<tr>,<td>,<th> .
		10	attributes-height, width, rowspan, colspan, border, color.
4	11-11-2019 To 15-11-2019	11	Form-tag attributes- type-passwd, submit.
		12	radio, check, method, action.
		13	Frame-<frame>, <frameset>.
5	18-11-2019 To 23-11-2019	14	<iframe>, <noframe> and other important tags and attributes.
		19 Nov	Union Inauguration
		23 Nov	Sports Day
6	25-11-2019 To 29-11-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
7	01-12-2019 To 05-12-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break

No of Weeks	Dates	Session	Topic
8	09-12-2019 To 13-12-2019	15	MODULE 2 EXAM
		12 Dec	Arts Day
		13 Dec	Arts Day
9	16-12-2019 To 20-12-2019	16 Dec	First Internal VI Semester UG
		17 Dec	First Internal VI Semester UG
		18 Dec	First Internal VI Semester UG
		16	JavaScript- data types, variables.
		20 Dec	Christmas Celebration
10	23-12-2019 To 28-12-2019		Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
11	30-12-2019 To 03-01-2020	17	Function, object, array.
		02 Jan	Mannam Jayanthi – Holiday
12	06-01-2020 To 10-01-2020	18	Client-side object hierarchy and document. object Model,<script>.
		19	Event handlers, JavaScript in urls.
		20	Windows and frames dialog boxes, status line.
13	13-01-2020 To 17-01-2020	21	Navigator object, opening Windows, closing windows.
		23	Location object, history object.
		24	Date object- math object- Accessing form object.
14	20-01-2020 To 24-01-2020	25	MODULE 3 EXAM
		26	Intro to PHP and advantages of PHP.
		27	Basic-functions, string,
15	27-01-2020 To 31-01-2020	28	Array, object.
		29	Web techniques.
		30	Database.
16	03-02-2020 To 07-02-2020	31	MODULE 4 EXAM
		32	Client-server model, introduction to cgi.
		33	Environment variables, request-response model.
17	10-02-2020 To	34	Encoding and decoding form data. Simple programming in CGI- database.
		35	MODULE 5 EXAM

No of Weeks	Dates	Session	Topic
	14-02-2020	36	QUESTION PAPER DISCUSSION.
18	17-02-2020 To 22-02-2020	17 Feb	Second Internal VI Semester UG
			Second Internal VI Semester UG
			Second Internal VI Semester UG
			Second Internal VI Semester UG
		21 Feb	Mahasivaratri – Holiday
			Second Internal VI Semester UG
19	24-02-2020 To 28-02-2020	24 Feb	College Day
			Study Leave
			Study Leave
			Study Leave
			Study Leave
20	02-03-2020 To 06-03-2020		Study Leave
			Study Leave
		04 Mar	University Exam VI Semester UG

Subject Code:	**6B24 BCA**
Subject Name:	**Lab - VII Web Technology**
No. of Credits:	**2**
No. of Contact Hours:	**54**
Hours per Week:	**3**
Name of the Teacher:	**Sindhu P. M.**

Guidelines

1. Follow standard coding method
2. The output of the program should be neatly formatted
3. Practice a**ll** the programs in the lab

Sample Program list

1. Develop an HTML page using all basic tags
2. Develop an HTML page containing all types of lists
3. Write an HTML code to insert an image into the web page. Use the attributes height, width and border. Also align some text with respect to the images
4. Create a web page giving the following train details in a tabular form with the heading Train Time Table. Train name, starting place, destination, arrival and departure time and fare
5. Create an HTML page with images. Clicking on the images should lead to external documents.
6. Form Validation using Java Script
7. Create a web page for your college using frames, images and hyper links
8. Create an email registration form. Give necessary validations
9. Write a JavaScript code using arrays
10. Create a web page that illustrate the onMouseOver and onMouseOut event handlers
11. Develop an HTML page that accepts any mathematical expression, evaluates that expression and display the result of the evaluation
12. Write a JavaScript program to display the current time
13. Write a JavaScript program to print the prime numbers within a range
14. Write a JavaScript program to show the working of alert()
15. Write a JavaScript program to find the factorial of a number.
16. Form Processing using PHP
17. Form validation using PHP
18. Storing data in MYSQL using PHP

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	21-10-2019 To 25-10-2019	1	Develop an HTML page using all basic tags.
		2	Develop an HTML page using all basic tags.
		3	Develop an HTML page containing all types of lists.
		4	Develop an HTML page containing all types of lists.
2	28-10-2019 To 01-11-2019	5	Write an HTML code to insert an image into the web page. Use the attributes height, width and border. Also align some text with respect to the images.
		6	Write an HTML code to insert an image into the web page. Use the attributes height, width and border. Also align some text with respect to the images.
		7	Create a web page giving the following train details in a tabular form with the heading Train Time Table. . Train name, starting place, destination, arrival and departure time and fare.
		8	Create a web page giving the following train details in a tabular form with the heading Train Time Table. . Train name, starting place, destination, arrival and departure time and fare.
		9	Create a web page giving the following train details in a tabular form with the heading Train Time Table. . Train name, starting place, destination, arrival and departure time and fare.
3	04-11-2019 To 08-11-2019	10	Create an HTML page with images. Clicking on the images should lead to external documents.
		11	Create an HTML page with images. Clicking on the images should lead to external documents.
		12	Form Validation using Java Script.
		13	Form Validation using Java Script.
		14	Form Validation using Java Script.
4	11-11-2019 To 15-11-2019	15	Form Validation using Java Script.
		16	Create a web page for your college using frames, images and hyper links.
		17	Create a web page for your college using frames, images and hyper links.
		18	Create a web page for your college using frames, images and hyper links.
5	18-11-2019 To 23-11-2019	19	Create an email registration form. Give necessary validations.
		19 Nov	Union Inauguration
		20	Create an email registration form. Give necessary

No of Weeks	Dates	Session	Topic
			validations.
		21	Create an email registration form. Give necessary validations.
		23 Nov	Sports Day
6	25-11-2019 To 29-11-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
7	01-12-2019 To 05-12-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
8	09-12-2019 To 13-12-2019	22	Write a JavaScript code using arrays.
		23	Write a JavaScript code using arrays.
		24	Write a JavaScript code using arrays.
		25	Create a web page that illustrate the onMouseOver and onMouseOut event handlers.
		12 Dec	Arts Day
		13 Dec	Arts Day
9	16-12-2019 To 20-12-2019	16 Dec	First Internal VI Semester UG
		17 Dec	First Internal VI Semester UG
		18 Dec	First Internal VI Semester UG
		26	Create a web page that illustrate the onMouseOver and onMouseOut event handlers.
		27	Create a web page that illustrate the onMouseOver and onMouseOut event handlers.
		20 Dec	Christmas Celebration
10	23-12-2019		Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday

No of Weeks	Dates	Session	Topic
	To 28-12-2019		Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
11	30-12-2019 To 03-01-2020	28	Develop an HTML page that accepts any mathematical expression, evaluates that expression and display the result of the evaluation.
		29	Write a JavaScript program to display the current time.
		02 Jan	Mannam Jayanthi – Holiday
		30	Write a JavaScript program to display the current time.
12	06-01-2020 To 10-01-2020	31	Write a JavaScript program to show the working of alert().
		32	Write a JavaScript program to show the working of alert().
		33	Write a JavaScript program to print the prime numbers within a range.
		34	Write a JavaScript program to print the prime numbers within a range.
13	13-01-2020 To 17-01-2020	35	Write a JavaScript program to print the prime numbers within a range.
		36	Write a JavaScript program to find the factorial of a number.
		37	Write a JavaScript program to find the factorial of a number.
		38	Write a JavaScript program to find the factorial of a number.
14	20-01-2020 To 24-01-2020	39	Form Processing using PHP.
		40	Form Processing using PHP.
		41	Form Processing using PHP.
		42	Form Processing using PHP.
		43	Form validation using PHP.
15	27-01-2020 To 31-01-2020	44	Form validation using PHP.
		45	Form validation using PHP.
		46	Form validation using PHP.
		47	Form validation using PHP.
16	03-02-2020 To 07-02-2020	48	Storing data in MYSQL using PHP.
		49	Storing data in MYSQL using PHP.
		50	Storing data in MYSQL using PHP.
		51	Storing data in MYSQL using PHP.
17	10-02-2020 To 14-02-2020	52	Storing data in MYSQL using PHP.
		53	LAB MODEL EXAM 1.
		54	LAB MODEL EXAM 2.

No of Weeks	Dates	Session	Topic
18	17-02-2020 To 22-02-2020	17 Feb	Second Internal VI Semester UG
			Second Internal VI Semester UG
			Second Internal VI Semester UG
			Second Internal VI Semester UG
		21 Feb	Mahasivaratri – Holiday
			Second Internal VI Semester UG
19	24-02-2020 To 28-02-2020	24 Feb	College Day
			Study Leave
			Study Leave
			Study Leave
			Study Leave
20	02-03-2020 To 06-03-2020		Study Leave
			Study Leave
		04 Mar	University Exam VI Semester UG

Subject Code:	**6B18 BCA**
Subject Name:	**Data Mining & Data Warehousing**
No. of Credits:	**3**
No. of Contact Hours:	**72**
Hours per Week:	**4**
Name of the Teacher:	**Hebin Layola**

Objective: -

- To expose to the students the introduction to data mining and data warehousing.
- To understand the data management aspects data pre processing model and inference considerations, complexity considerations, post processing of discovered structures visualization and online updating

Module –I: Introduction; data warehousing – what is, Multidimensional data model, OLAP operations, warehouse schema, Data warehousing Architecture, warehouse server, Metadata, OLAP engine, data warehouse Backend Process.

Module – II: Data mining – what is, KDD vs data mining, DBMS vs data mining, DM Techniques, issues and challenges, Applications. (Case studies)

Module – III: Association rules – What is, Methods, a priori algorithm, partition algorithm, Pincer search algorithm, FP-tree growth algorithm, incremental and Border algorithms, Generalized Association rule.

Module – IV: Clustering techniques – Paradigms, Partitioning Algorithms, k – Medoid algorithms, CLARA, CLARANS, hierarchical clustering, DBSCAN, Categorical Clustering, STIRR.

Module – V: Decision trees – what is, tree construction principles, Best split, Splitting indices, Splitting criteria, decision tree construction algorithms, CART, ID3, C4.5, CHAID. Introduction to web, spatial and temporal data mining.

Prescribed Textbook

1. Data Mining Techniques, A K Pujari, University press.

Books for Reference

1. J. Han, M. Kamber, “Data Mining Concepts and Techniques”, Harcourt India Pvt Ltd.
2. M. Dunham, “ Data Mining : introductory and Advanced Topics”, Pearson Pub.

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	21-10-2019 To 25-10-2019	1	Introduction
		2	Data warehousing- what is
		3	Multidimensional data model
		4	OLAP operations
		5	Warehouse schema
		6	Class Test
2	28-10-2019 To 01-11-2019	7	Data warehousing Architecture
		8	Warehouse server
		9	Metadata
		10	OLAP engine
		11	Data warehouse Backend Process
		12	**Revision**
3	04-11-2019 To 08-11-2019	13	Class Test
		14	Data mining – what is
		15	KDD vs data mining
		16	DBMS vs data mining
		17	DM Techniques
		18	Issues and challenges
4	11-11-2019 To 15-11-2019	19	Applications. (Case studies)
		20	Applications. (Case studies)
		21	Revision
		22	Class Test
		23	Association rules – What is
		24	Methods
5	18-11-2019 To 23-11-2019	25	Apriori algorithm
		19 Nov	Union Inauguration
		26	Partition algorithm
		27	Pincer search algorithm
		28	FP-tree growth algorithm
		23 Nov	Sports Day
6	25-11-2019 To 29-11-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break

No of Weeks	Dates	Session	Topic
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
7	**01-12-2019 To 05-12-2019**		**Semester Break**
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
8	**09-12-2019 To 13-12-2019**	29	Incremental and Border algorithms
		30	Incremental and Border algorithms
		31	Generalized Association rule.
		32	Generalized Association rule.
		33	Revision-Module III
		12 Dec	**Arts Day**
		13 Dec	**Arts Day**
9	**16-12-2019 To 20-12-2019**	**16 Dec**	**First Internal VI Semester UG**
		17 Dec	**First Internal VI Semester UG**
		18 Dec	**First Internal VI Semester UG**
		34	Class Test- Module III
		35	Answer sheet distribution and question paper discussion
		20 Dec	**Christmas Celebration**
10	**23-12-2019 To 28-12-2019**		**Christmas – Holiday**
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
11	**30-12-2019 To 03-01-2020**	36	Clustering techniques
		37	Paradigms
		02 Jan	**Mannam Jayanthi – Holiday**
		38	Partitioning Algorithms
12	**06-01-2020**	39	k – Medoid algorithms

No of Weeks	Dates	Session	Topic
	To 10-01-2020	40	CLARA
		41	CLARANS
		42	Hierarchical clustering
		43	DBSCAN
		44	Categorical Clustering
13	13-01-2020 To 17-01-2020	45	STIRR
		46	Revision Module IV
		47	Class Test-Module IV
		48	Decision trees – what is
		49	Tree construction principles
		50	Best split
		51	Splitting indices
14	20-01-2020 To 24-01-2020	52	Splitting criteria
		53	Decision tree construction algorithms
		54	CART
		55	ID3
		56	C4.5
		57	CHAID
		58	Introduction to web
15	27-01-2020 To 31-01-2020	59	Spatial and temporal data mining.
		60	Revision Module V
		61	Class Test-Module V
		62	University Question Paper Discussion
		63	University Question Paper Discussion
16	03-02-2020 To 07-02-2020	64	Seminar Presentation
		65	Revision Module 1
		66	Class Test
		67	Revision Module 2
		68	Class Test
17	10-02-2020 To 14-02-2020	69	Revision Module 3
		70	Class Test
		71	Revision Module 4
		72	**Class Test**
18	17-02-2020 To 22-02-2020	17 Feb	Second Internal VI Semester UG
			Second Internal VI Semester UG
			Second Internal VI Semester UG
			Second Internal VI Semester UG
		21 Feb	Mahasivaratri – Holiday

No of Weeks	Dates	Session	Topic
			Second Internal VI Semester UG
19	24-02-2020 To 28-02-2020	24 Feb	College Day
			Study Leave
			Study Leave
			Study Leave
			Study Leave
20	02-03-2020 To 06-03-2020		Study Leave
			Study Leave
		04 Mar	University Exam VI Semester UG

Subject Code:	**6B19 BCA – E01**
Subject Name:	**Information Security (Elective)**
No. of Credits:	**3**
No. of Contact Hours:	**72**
Hours per Week:	**4**
Name of the Teacher:	**Vineetha Mathew**

Module –I:

Introduction to Information Security- The need for Security, Principles of security - confidentiality, Authentications, Integrity, Non-repudiation. Types of attacks- Passive attacks, Active attacks, Virus, Worm, Trojan horse. Introduction to Cryptography, Steganography, Secret Sharing.

Module – II:

Symmetric Key Encipherment:- Traditional symmetric Key Ciphers: Introduction- Kirchhoff's principle, cryptanalysis, categories of traditional ciphers; Substitution Ciphers - monoalphabetic ciphers, polyalphabetic ciphers; Transposition Ciphers - keyless and keyed transposition ciphers, Stream and Black Ciphers - stream ciphers, block ciphers.

Module – III:

DES(Data Encryption Standard):-Introduction, DES Structure - initial and final permutations, rounds, cipher and reverse cipher, examples; DES Analysis - properties, design criteria, DES weaknesses;Multiple DES - double DES, triple DES; Security of DES - brute-force attack, differential cryptanalysis, linear cryptanalysis.

Module – IV:

Public key Cryptosystem: Principles of Public Key Cryptosystems- Public Key Cryptosystem, Applications of Key Cryptosystems, Requirement for Public Key Cryptosystem, Public Key Cryptanalysis. RSA Algorithm – Description of the Algorithm, Computational Aspects, Security of RSA.

Module – V:

Digital Signature:- Comparison- inclusion, verification method, relationship, duplicity; Process- needs for keys, signing the digest; Service- message

authentication, message integrity, nonrepudiation, confidentiality; Attacks on Digital Signature- attack types; Digital Signature Schemes- RSA digital signature schemes

Prescribed Text book

1. Cryptography and Network Security", Behrouz A Forouzan, Tata McGraw-Hill Publishing Company Limited, Special Indian Edition 2007. (For Module - I, II, III, V).
2. Cryptography and Network Security Principles and Practices, Willian Stalling, Pearson Education (For Module - IV).

Books for Reference

1. Fundamentals of computer security, Josef Pieprzyk, Thomas hardjino and Jennifer Sebberry, Springer International Edition 2008

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	21-10-2019 To 25-10-2019	1	Introduction to Information Security- The need for Security
		2	Principles of security - confidentiality, Authentications, Integrity, Non-repudiation.
		3	Types of attacks- Passive attacks, Active attacks
		4	Virus, Worm, Trojan horse
		5	Introduction to Cryptography, Steganography
		6	Secret Sharing.
2	28-10-2019 To 01-11-2019	7	Question Paper Discussion and Revision
		8	Class Test
		9	**Symmetric Key Encipherment**:- Traditional symmetric Key Ciphers: Introduction
		10	Kirchhoff's principle, cryptanalysis
		11	Categories of traditional ciphers; Substitution Ciphers
		12	Monoalphabetic ciphers
3	04-11-2019 To 08-11-2019	13	Polyalphabetic ciphers
		14	Polyalphabetic ciphers
		15	Transposition Ciphers - keyless and keyed transposition ciphers
		16	Stream Ciphers
		17	Black Ciphers
		18	Question Paper Discussion
4	11-11-2019 To 15-11-2019	19	Revision
		20	Class Test
		21	DES(Data Encryption Standard):-Introduction
		22	DES Structure
		23	Initial and final permutations
		24	Rounds
5	18-11-2019 To 23-11-2019	25	Example of DES Encryption
		19 Nov	Union Inauguration
		26	Example of DES Encryption
		27	Example of DES Encryption
		28	Example of DES Encryption
		23 Nov	Sports Day
6	25-11-2019		Semester Break
			Semester Break

No of Weeks	Dates	Session	Topic
	To 29-11-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
7	01-12-2019 To 05-12-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
8	09-12-2019 To 13-12-2019	29	Cipher and reverse cipher
		30	DES Analysis - properties
		31	Design criteria
		32	DES weaknesses
		33	Multiple DES - double DES
		12 Dec	Arts Day
		13 Dec	Arts Day
9	16-12-2019 To 20-12-2019	16 Dec	First Internal VI Semester UG
		17 Dec	First Internal VI Semester UG
		18 Dec	First Internal VI Semester UG
		34	Triple DES
		35	Security of DES - brute-force attack
		20 Dec	Christmas Celebration
10	23-12-2019 To 28-12-2019		Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
11	30-12-2019 To	36	
		37	
		02 Jan	Mannam Jayanthi – Holiday

No of Weeks	Dates	Session	Topic
	03-01-2020	38	Security of DES -differential cryptanalysis
12	06-01-2020 To 10-01-2020	39	Security of DES-linear cryptanalysis.
		40	Question Paper Discussion
		41	Revision
		42	Class Test
		43	**Public key Cryptosystem**: Principles of Public Key Cryptosystems
		44	Public Key Cryptosystem
13	13-01-2020 To 17-01-2020	45	Applications of Key Cryptosystems
		46	Requirement for Public Key Cryptosystem
		47	Public Key Cryptanalysis
		48	RSA Algorithm – Description of the Algorithm
		49	Computational Aspects
		50	Security of RSA.
		51	RSA example problem
14	20-01-2020 To 24-01-2020	52	RSA example problem
		53	RSA example problem
		54	Question Paper Discussion
		55	Revision
		56	Class Test
		57	**Digital Signature:-** Comparison- inclusion, verification method, relationship, duplicity; Process
		58	needs for keys, signing the digest
15	27-01-2020 To 31-01-2020	59	Service- message authentication, message integrity, nonrepudiation, confidentiality;
		60	Attacks on Digital Signature
		61	Attack types
		62	Digital Signature Schemes
		63	RSA digital signature schemes
16	03-02-2020 To 07-02-2020	64	Question Paper Discussion
		65	Revision
		66	Class Test
		67	Revision
		68	Revision
17	10-02-2020 To 14-02-2020	69	Revision
		70	Revision
		71	Revision
		72	Revision

No of Weeks	Dates	Session	Topic
18	17-02-2020 To 22-02-2020	17 Feb	Second Internal VI Semester UG
			Second Internal VI Semester UG
			Second Internal VI Semester UG
			Second Internal VI Semester UG
		21 Feb	Mahasivaratri – Holiday
			Second Internal VI Semester UG
19	24-02-2020 To 28-02-2020	24 Feb	College Day
			Study Leave
			Study Leave
			Study Leave
			Study Leave
20	02-03-2020 To 06-03-2020		Study Leave
			Study Leave
		04 Mar	University Exam VI Semester UG

Subject Code:	**6B20 BCA – E05**
Subject Name:	**Network Programming (Elective)**
No. of Credits:	**3**
No. of Contact Hours:	**72**
Hours per Week:	**4**
Name of the Teacher:	**Fincy Cyriac**

Module –I: Introduction – A Simple Day Time Client – Protocol Independence – Error Handling – A Simple - Day Time Server. The Transport Layer : TCP, UDP – TCP Connection Establishment and Termination – TIME_WAIT State – Port Numbers – Concurrent Servers – Buffer Size and Limitations – Standard Internet Services – Protocol Usage by Common Internet Applications.

Module – II: Socket Introduction – Socket address Structures – Byte Ordering Functions – Byte Manipulation Functions – Elementary TCP Sockets – socket , connect, bind, listen, accept, fork and exec, close, getsockname and getpeername functions

Module – III: TCP Client/Server Example – TCP Echo Server - main(), str_echo() – TCP Echo Client -main(), str_cli() – startup – termination – Shutdown of Server Host.

Module – IV: Socket Options – getsockopt and setsockopt functions – Socket States – Generic Socket Options – TCP Socket Options.

Module – V: Name and Address Conversions - DNS – gethostbyname – gethostbyaddr – getservbyname – getservbyport – getaddrinfo – freeaddrinfo – host_serv – tcp_connect –tcp_listen functions.

Prescribed Textbook

1. W. Richard Stevens, Bill Fenner, Andrew M. Rudoff, “Unix Network programming The Sockets Networking API Volume I”, Pearson Education

Books for Reference

1. Barry Nance, “Network Programming in C”, Prentice Hall

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	21-10-2019 To 25-10-2019	1	Introduction
		2	A Simple Day Time Client
		3	Protocol Independence
		4	Error Handling
		5	A Simple - Day Time Server
		6	The Transport Layer : TCP
2	28-10-2019 To 01-11-2019	7	The Transport Layer : UDP
		8	The Transport Layer : SCTP
		9	TCP Connection Establishment
		10	TCP Connection Termination
		11	TIME_WAIT State
		12	Port Numbers
3	04-11-2019 To 08-11-2019	13	Concurrent Servers
		14	Buffer Size and Limitations
		15	Standard Internet Services
		16	Protocol Usage by Common Internet Applications
		17	Socket Introduction
		18	Socket address Structures
4	11-11-2019 To 15-11-2019	19	Module 1 class test
		20	Byte Ordering Functions
		21	Byte Ordering Functions
		22	Byte Manipulation Functions
		23	Elementary TCP Sockets – socket , connect
		24	Elementary TCP Sockets – bind, listen
5	18-11-2019 To 23-11-2019	25	Elementary TCP Sockets – accept
		19 Nov	Union Inauguration
		26	Elementary TCP Sockets – fork and exec, close
		27	getsockname function
		28	getpeername function
		23 Nov	Sports Day
6	25-11-2019 To 29-11-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break

No of Weeks	Dates	Session	Topic
			Semester Break
			Semester Break
			Semester Break
			Semester Break
7	01-12-2019 To 05-12-2019		**Semester Break**
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
8	09-12-2019 To 13-12-2019	29	**Module 2 class test**
		30	TCP Client/Server Example
		31	TCP Echo Server – main()
		32	TCP Echo Server – main()
		33	TCP Echo Server - str_echo()
		12 Dec	**Arts Day**
		13 Dec	**Arts Day**
9	16-12-2019 To 20-12-2019	**16 Dec**	**First Internal VI Semester UG**
		17 Dec	**First Internal VI Semester UG**
		18 Dec	**First Internal VI Semester UG**
		34	TCP Echo Server - str_echo()
		35	TCP Echo Client -main(),
		20 Dec	**Christmas Celebration**
10	23-12-2019 To 28-12-2019		**Christmas – Holiday**
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
11	30-12-2019 To 03-01-2020	36	TCP Echo Client -main(),
		37	TCP Echo Client -str_cli()
		02 Jan	**Mannam Jayanthi – Holiday**
		38	TCP Echo Client -str_cli()
12	06-01-2020	39	Startup
		40	Termination

No of Weeks	Dates	Session	Topic
	To 10-01-2020	41	Shutdown of Server Host
		42	Module 3 class test
		43	Socket Options
		44	getsockopt function
13	13-01-2020 To 17-01-2020	45	setsockopt functions
		46	Socket States
		47	Generic Socket Options
		48	TCP Socket Options
		49	TCP Socket Options
		50	Module 4 class test
		51	Name and Address Conversions
14	20-01-2020 To 24-01-2020	52	DNS
		53	gethostbyname function
		54	gethostbyaddr function
		55	getservbyname function
		56	getservbyport function
		57	getaddrinfo function
		58	freeaddrinfo function
15	27-01-2020 To 31-01-2020	59	host_serv function
		60	tcp_connect function
		61	tcp_listen function
		62	Module 5 class test
		63	Module 1 revision and question paper discussion
16	03-02-2020 To 07-02-2020	64	Exam module 1
		65	Module 2 revision and question paper discussion
		66	Exam module 2
		67	Module 3 revision and question paper discussion
		68	Exam module 3
17	10-02-2020 To 14-02-2020	69	Module 4 revision and question paper discussion
		70	Exam module 4
		71	Module 5 revision and question paper discussion
		72	Exam module 5
18	17-02-2020 To 22-02-2020	17 Feb	Second Internal VI Semester UG
			Second Internal VI Semester UG
			Second Internal VI Semester UG
			Second Internal VI Semester UG
		21 Feb	Mahasivaratri – Holiday
			Second Internal VI Semester UG

No of Weeks	Dates	Session	Topic
19	24-02-2020 To 28-02-2020	24 Feb	College Day
			Study Leave
			Study Leave
			Study Leave
			Study Leave
20	02-03-2020 To 06-03-2020		Study Leave
			Study Leave
		04 Mar	University Exam VI Semester UG

Subject Code:	**6B21 BCA**
Subject Name:	**System Software**
No. of Credits:	**2**
No. of Contact Hours:	**54**
Hours per Week:	**3**
Name of the Teacher:	**Sruthi N.**

Objective: -

1. Introduce formal language processing activities.
2. Basic idea of assembly language programming and role of assembler.
3. Insight into Design of assemblers and macro processors.
4. Concept of Macros and Macro pre-processors.
5. Overview of various aspects of compilers.
6. Concepts and design aspects of linkers and loaders.

Module –I:

Introduction – Evolution – Language processing activities – Fundamentals of language processing and specification – Development tools – Data structures for language processing

Module – II:

Scanning and parsing – Elements of ALP – Assembly scheme – Pass structure of assemblers – Two pass assembler – Single pass assembler

Module – III:

Macros: Definition and call – Expansion – Nested macro calls - Advanced macro facilities – Macro preprocessor.

Module – IV:

Compiler: Compilation – Memory allocation – Compilation of expressions and control structures – Code optimization – Interpreters.

Module – V:

Linker: Design – Relocation and linking – Self relocating programs – Linker for MS DOS – Linking for Overlays – Loader

Prescribed Textbook

D M Dhamdhere, “Systems Programming and Operating Systems”, Tata McGraw-Hill

Books for Reference

John J Donovan, “Systems Programming”, Tata McGraw-Hill

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	21-10-2019 To 25-10-2019	1	Introduction to System Software
		2	Introduction to System Software
		3	Evolution
		4	Language processing activities
2	28-10-2019 To 01-11-2019	5	Language processing activities
		6	Language processing activities
		7	Fundamentals of language processing and specification
		8	Fundamentals of language processing and specification
		9	Fundamentals of language processing and specification
3	04-11-2019 To 08-11-2019	10	Development tools
		11	Development tools
		12	Data structures for language processing
		13	Data structures for language processing
		14	Data structures for language processing
4	11-11-2019 To 15-11-2019	15	Data structures for language processing
		16	Revision Module 1
		17	Class test Module 1
		18	Scanning
5	18-11-2019 To 23-11-2019	19	Scanning
		19 Nov	Union Inauguration
		20	Parsing
		21	Parsing
		23 Nov	Sports Day
6	25-11-2019 To 29-11-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
7	01-12-2019 To		Semester Break
			Semester Break
			Semester Break

No of Weeks	Dates	Session	Topic
	05-12-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
8	09-12-2019 To 13-12-2019	22	Elements of ALP
		23	Assembly scheme
		24	Pass structure of assemblers
		25	Pass structure of assemblers
		12 Dec	Arts Day
		13 Dec	Arts Day
9	16-12-2019 To 20-12-2019	16 Dec	First Internal VI Semester UG
		17 Dec	First Internal VI Semester UG
		18 Dec	First Internal VI Semester UG
		26	Two pass assembler
		27	Single pass assembler
		20 Dec	Christmas Celebration
10	23-12-2019 To 28-12-2019		Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
11	30-12-2019 To 03-01-2020	28	Class test Module 2
		29	Macros: Definition and call
		02 Jan	Mannam Jayanthi – Holiday
		30	Macro Expansion
12	06-01-2020 To 10-01-2020	31	Nested macro calls
		32	Advanced macro facilities
		33	Macro preprocessor
		34	Macro preprocessor
13	13-01-2020 To 17-01-2020	35	Class test Module 3
		36	Compiler: Compilation
		37	Memory allocation
		38	Compilation of expressions and control structures
14	20-01-2020	39	Compilation of expressions and control structures
		40	Code optimization

No of Weeks	Dates	Session	Topic
	To 24-01-2020	41	Interpreters
		42	Class test Module 4
		43	Linker: Design
15	27-01-2020 To 31-01-2020	44	Relocation and linking
		45	Self relocating programs
		46	Linker for MS DOS
		47	Linking for Overlays
16	03-02-2020 To 07-02-2020	48	Loader
		49	Class test Module 5
		50	Question paper discussion 1&2
		51	Question paper discussion 3&4&5
17	10-02-2020 To 14-02-2020	52	Revision 1&2
		53	Revision 3&4
		54	Revision 5
18	17-02-2020 To 22-02-2020	17 Feb	Second Internal VI Semester UG
			Second Internal VI Semester UG
			Second Internal VI Semester UG
			Second Internal VI Semester UG
		21 Feb	Mahasivaratri – Holiday
			Second Internal VI Semester UG
19	24-02-2020 To 28-02-2020	24 Feb	College Day
			Study Leave
			Study Leave
			Study Leave
			Study Leave
20	02-03-2020 To 06-03-2020		Study Leave
			Study Leave
		04 Mar	University Exam VI Semester UG