SACRED HEART COLLEGE (AUTONOMOUS)

Department of Computer Science

BSc Computer Applications

Course plan

Academic Year 2016 - 17

Semester IV

COURSE STRUCTURE

Course Code	Title of The Course	No. Hrs./Week	Credits	Total Hrs./Sem
15U4CRCAP08	Advanced Web Technology Using SQL Server	4	4	72
15U4CRCAP09	Database Management Systems	4	3	72
15U4PRCAP4	Advanced Web Technology Using SQL Server (Lab)	2	2	36
15U4CRCMT4	Vector Calculus, Theory of Equations & Numerical Methods	5	4	90
15U4CRCST4	STATISTICAL INFERENCE	5	4	90
15U4CRCST5	SAMPLE SURVEY ANALYSIS AND DESIGN OF EXPERIMENTS	5	4	90

COURSE I- 15U4CRCAP8: ADVANCED WEB TECHNOLOGY

PROGRAMME	BSC COMPUTER APPLICATIONS		SEMESTER	4
COURSE CODE AND TITLE	15U4CRCAP08: ADVANCED WEB TECHNOLOGY		CREDITS	4
HOURS/WEEK	4		HOURS/SEM	72
FACULTY NAME	Dr. REGITHA M R			

COURSE OBJECTIVES

➢ To know regarding internet related technologies. Systematic way of developing a website

➢ To demonstrate the ability to author valid externally linked cascading style sheets (CSS)

➢ To know the advantages and uses of different types of CSS

➢ To create powerful database-driven websites

➢ To design dynamic and interactive web pages using PHP

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE 1 - INTRODUCTION TO HTML				
1	Introduction to HTML: Definition of Internet, WWW, URL webpage, website, hypertext, HTML, HTML5, CSS	Lecture using PPT	Online Tutorial	
2	PHP and MYSQL	Lecture using PPT		
3	Features of HTML. HTML Tags: Head, Body, Basic, Heading, Comments	Lecture using PPT		
4	Formatting tags, Image, Link,	Lecture using PPT		
5	List, Marquee, Table	Lecture using PPT	Video	
6	Frame, Form	Lecture using PPT		

7	HTML Form elements: Input, Select	Lecture using PPT		
8	Text Area and Button	Lecture using PPT		
9	Input Types: Text, Password,	Lecture using PPT	e-resource	
10	Submit, Reset	Lecture using PPT		
11	Radio, Checkbox, Button	Lecture using PPT		
MODULE 2 - INTRODUCTION TO CSS				
12	Introduction to CSS	Lecture using PPT		
13	Steps for website design and development process	Lecture using PPT		
14	Three ways to insert CSS: Internal style sheet, external sheet and inline style	Lecture using PPT		
15	CIA 1			
16	CIA 2			
17	Definition of DHTML, Java script	Lecture using PPT	e-resource	
18	DOM, HTML DOM events: mouse events	Lecture using PPT	Video	
19	Keyboard events and form events	Lecture using PPT		
20	Java script programs.	Lecture using PPT		
MODULE 3 – INTRODUCTION TO HTML5				
21	Introduction to HTML5	Lecture using PPT	Video	
22	Introducing Dream Weaver,	Lecture using PPT	Video	
23	Difference between HTML and HTML5	Lecture using PPT		
24	New Elements: <article> and <figcaption>	Lecture using PPT		
25	New Input elements: number, date and email. Canvas: Line and Text	Lecture using PPT	e-resource	

26	SVG: Circle and Rectangle.	Lecture using PPT		
27	Difference between SVG and Canvas, Video, Audio,	Lecture using PPT	e-resource	
28	Drag/Drop, Geolocation.	Lecture using PPT		
29	Form Elements: <datalist>, <keygen> and <output>	Lecture using PPT		
30	Form Attributes: formaction, formenctype, formmethod, and formtarget.	Lecture using PPT		
31	CSS3 Introduction: Syntax, ID & Class, CSS Styling- Styling Backgrounds: background-color and background-image.	Lecture using PPT	e-resource	
32	Styling Text: color and text-align. Styling Fonts: font-family, font-style and font-size. Styling Links: text-decoration and background-color. Styling Lists: list-style-type and list-style-image.	Lecture using PPT		
33	Styling Tables: border-style, border-width and border-color. Box Model: Border, Outline, Margin, Padding	Lecture using PPT		
34	Positioning, Floating and Align. Navigation Bar, Image Gallery.	Lecture using PPT		
MODULE 4 - INTRODUCTION TO PHP				
35	Introduction to PHP: PHP Basics Syntax, PHP Variables, Expression, PHP Operators	Lecture using PPT		
36	PHP Conditional Events and Switch case, PHP Flow Control and Loops	Lecture using PPT		
37	Types of Errors, Array, For each Loop, String Manipulation and Regular Expression, Global Array: $_SERVER, $_GET, $_POST, $_COOKIE, $_FILES and $_SESSION.	Lecture using PPT	Quiz	

38	String inbuilt functions: strlen(), str_word_count(), strrev(), strops() and str_replace(). Math functions: abs(), ceil(), floor(), max(), min(), pow() and sqrt().	Lecture using PPT		
39	Array Inbuilt functions: sort(), rsort(), asort(), ksort(), arsort() and krsort().	Java Servlets: Introduction	Quiz	
40	CIA 2			
41	CIA 2			
42	CIA2			
43	CIA 2			
44	CIA 2			
45	Using HTML Forms: PHP form handling	Lecture using PPT	Online Tutorial	
46	Get data sent from form fields through GET and POST method	Lecture using PPT	Online Tutorial	
47	Get data sent from form fields through GET and POST method	Lecture using PPT		
48	Form validation, Sessions: create, retrieve, modify and delete.	Lecture using PPT	Online Tutorial	
49	Cookies: create, retrieve, modify and delete.	Lecture using PPT	Online Tutorial	
50	Cookies: create, retrieve, modify and delete.	Lecture using PPT		
MODULE 5 – USING HTML FORMS				
51	Introduction to PHP MySQL.	Lecture using PPT	Online Tutorial	
52	Introduction to PHP MySQL.	Lecture using PPT		
53	Data Types: Numeric, Text, Date and Time data types.	Lecture using PPT		
54	Data Types: Numeric, Text, Date and Time data types.	Lecture using PPT		
55	Database structure, tables	Lecture using PPT		
56	Database structure, tables	Lecture using PPT		
57	MySQL naming rules and columns data types	Lecture using PPT	e-resource	

58	MySQL naming rules and columns data types	Lecture using PPT		
59	PHP MySQL - INSERT INTO	Lecture using PPT		
60	PHP MySQL - INSERT INTO	Lecture using PPT		
61	SELECT, ORDER BY, WHERE	Lecture using PPT	e-resource	
62	SELECT, ORDER BY, WHERE	Lecture using PPT		
63	LIKE, UPDATE, DELETE.	Lecture using PPT		
64	Connection with MySQL and insertion data.	Lecture using PPT		
65	Connection with MySQL and update data.	Lecture using PPT	e-resource	
66	Connection with MySQL and delete data.	Lecture using PPT	e-resource	
67	Connection with MySQL and list data.	Lecture using PPT		
68	Create program for connecting MySQL with PHP	Lecture using PPT	e-resource	
69	Revision			
70	Revision			
72	Revision			

INDIVIDUAL ASSIGNMENTS/SEMINAR – DETAILS & GUIDELINES

Sl. No.	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc.)
1	31-12-2016	Define in detail about WWW, URL, webpage, website, hypertext, HTML, HTML5, CSS and PHP.
2	31-12-2016	Define in detail about the following with examples: Features of HTML, basic HTML Tags using example: Head, Body, Comments.
3	31-12-2016	Define in detail all formatting tags with examples.
4	31-12-2016	Define in detail Table with its all attributes. Write a program to create your class time table.
5	31-12-2016	Define Image, Link, List and Marquee Tags in detail with examples.
6	31-12-2016	Define in detail about the following Form elements with examples: Input,

		Select, TextArea and Button.
7	31-12-2016	Define in detail about the following Input Types with examples: Text, Password, Submit and Reset.
8	31-12-2016	Define in detail about the following Input Types with examples: Radio, Checkbox and Button.
9	31-12-2016	Explain Steps for website design and development process. Design a homepage of a university.
10	31-12-2016	Define in detail about the following three ways to insert CSS with examples: Internal style sheet, external sheet and inline style.
11	31-12-2016	Define in detail about DHTML, Javascript, DOM and the following HTML DOM events using examples: mouse events, keyboard events and form events.
12	31-12-2016	Write a Javascript program to create registration form and validation the data.
13	31-12-2016	Define about Dream Weaver and the difference between HTML & HTML5.
14	31-12-2016	Define in detail about new elements in HTML5 with examples: Article and Figcaption. New Input elements: number, date and email.
15	31-12-2016	Define in detail about Canvas and SVG - Define Line and Text in Canvas with examples. Define SVG: Circle and Rectangle. Difference between SVG and Canvas.
16	31-12-2016	Define in detail about the following tags using examples: Video, Audio, Drag/Drop, Geolocation. Form Elements: <datalist>, <keygen> and <output>.
17	31-12-2016	Define in detail about the following form attributes using examples: formaction, formenctype, formmethod, and formtarget.
18	31-12-2016	Define in detail about the following with examples: CSS Syntax, ID & Class, CSS Styling- Styling Backgrounds: background-color and background-image.
19	31-12-2016	Define in detail about the following with examples: Styling Text: color and text-align. Styling Fonts: font-family, font-style and font-size. Styling Links: text-decoration and background-color. Styling Lists: list-style-type and list-style-image.
20	31-12-2016	Define in detail about the following with examples: Styling Tables: border-style, border-width and border-color.
21	31-12-2016	Define in detail about the following with examples: Box Model - Border, Outline, Margin, Padding, Positioning, Floating and Align. Navigation Bar, Image Gallery.
22	31-12-2016	Explain in detail about the following with examples: PHP Basics Syntax, PHP Variables, Expression and Operators.
23	31-12-2016	Explain in detail about the following with examples: PHP Flow Control and Loops.
24	31-12-2016	Explain in detail about the following with examples: Types of Errors, Array, For each Loop, String Manipulation and Regular Expression.

25	31-12-2016	Explain in detail about the following with examples: Global Array -$_SERVER, $_GET, $_POST, $_COOKIE, $_FILES and $_SESSION. String inbuilt functions - strlen(), str_word_count(), strrev(), strops() and str_replace().
26	31-12-2016	Explain in detail about the following with examples: Math functions - abs(), ceil(), floor(), max(), min(), pow() and sqrt(). Array Inbuilt functions - sort(), rsort(), asort(), ksort(), arsort() and krsort().
27	31-12-2016	Explain in detail about the following PHP form handling with examples: get data sent from form fields through GET and POST method, form validation.
28	31-12-2016	Explain in detail about the following with examples: Sessions - create, retrieve, modify and delete.
29	31-12-2016	Explain in detail about the following with examples: Cookies - create, retrieve, modify and delete.
30	31-12-2016	Explain in detail about the following with examples: Introduction to MySQL. Data Types: Numeric, Text, Date and Time data types. Database structure, tables, MySQL naming rules and columns data types.
31	31-12-2016	Explain in detail about the following with examples: INSERT INTO, SELECT, ORDERBY.
32	31-12-2016	Explain in detail about the following with examples: WHERE and LIKE, UPDATE, DELETE.
33	31-12-2016	Explain Connection with MySQL and write a PHP program to insert new data and update the existing data.
34	31-12-2016	Explain Connection with MySQL and write a PHP program to insert new data and delete the existing data.
35	31-12-2016	Define Geolocation and write program using MySQL and PHP with Google Maps.

GROUP ASSIGNMENTS/ACTIVITES – DETAILS & GUIDELINES

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc.)
1	15.02.2017	Create a website of your department

TEXT BOOKS:
- Powell, HTML & XHTM: The Complete Reference, 4th Edition, Tata McGraw-Hill Edition
- Steven Holzner, PHP: The Complete Reference, McGraw-Hill Higher Education, 2008

REFERENCE BOOK:
- Robin Nixon, Learning PHP, My SQL and Java Script, Kindle Edition, OReilly Media 2009.

COURSE 2- 15U4CRCAP08 : DATA BASE MANAGEMENT SYSTEM

PROGRAMME	BACHELOR OF COMPUTER APPLICATIONS	SEMESTER	4
COURSE CODE AND TITLE	15U4CRCAP09 : DATA BASE MANAGEMENT SYSTEM	CREDIT	3
HOURS/WEEK	4	HOURS/SEM	72
FACULTY NAME	JISHA SOMAN		

COURSE OBJECTIVES

➢ To define the information that is needed to design a database management system and ER modelling concepts

➢ To apply relational database theory and be able to describe relational algebra expression, and formulate query, using SQL

➢ To recognize and identify the use of normalization and functional dependency, indexing technique used in database design.

➢ To apply and relate the concept of transaction , Database Security and Authorization

➢ To introduce the concepts of Data Ware House ,Data Mining and Hadoop

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	Syllabus discussion	PPT	video	
2	Characteristics of database approach	PPT/Lecture		
3	Data base users	PPT/Lecture		
4	DBA	Lecture	e-resource	
5	Advantages of using DBMS	Lecture	e-resource	
6	Data Models	PPT/Lecture		
7	Schemas and instances	Lecture		

8	DBMS architecture	Lecture		
9	data independence	Lecture		
10	DBMS language	Lecture	e-resource	
11	Data Base system environment	PPT/Lecture		
12	DBMS Component and modules	PPT/Lecture		
MODULE II				
13	Introduction of relational database	PPT/Lecture		
14	Entity types, Entity sets, Attributes and Keys			
15	Relationship Types,	PPT/Lecture		
16	Relationship Sets relationship instances	Lecture		
17	Constraints on relationship types	Lecture		
18	Weak entity types, and sample ER diagrams.	Lecture		
19	Examples of ER diagram	Lecture		
20	Examples of ER diagram	PPT/Lecture		
21	Relational model concepts domains, attributes, tuples and relations	PPT/Lecture		
22	characteristics of relations	PPT/Lecture		
23	Relational Model constraints	PPT/Lecture		
CIA 1				
24	Relational Databases and relational data base schemas	Lecture		
25	entity integrity,	Lecture		
26	referential integrity	Lecture		
27	foreign keys with examples	Lecture		
28	mapping with keys	Lecture	Video	

29	Relational algebra	PPT/Lecture		
30	Relational calculus	PPT/Lecture		
31	Aggregate functions.	PPT/Lecture		
32	Relational Data base design using ER-to-Relational mapping.	Lecture		
MODULE III				
33	Data definition Commands	PPT/Lecture		
34	Constraints in Sql	PPT/Lecture		
35	DML Commands	PPT/Lecture		
36	Ordering of rows UNION,EXCEPT,INTERSET	Lecture		
37	Substring comparisons using LIKE operator	Lecture	Q & Ans Session	
38	BETWEEN operator	PPT/Lecture		
39	Complex Queries-Nested queries	PPT/Lecture		
40	EXISTS and UNIQUE functions	PPT/Lecture		
41	NULL values, Renaming of attributes and joining of tables,	PPT/Lecture		
42	Aggregate functions and grouping, Managing views.	Lecture		
MODULE IV				
43	Informal Design Guide lines for relation schemas	PPT/Lecture		
44	functional dependencies	PPT/Lecture		
45	First Normal forms	PPT/Lecture		
46	Second Normal forms	PPT/Lecture		
47	Third Normal forms	PPT/Lecture		
48	Boyce- Codd normal form	PPT/Lecture		

49	Fourth Normal forms	PPT/Lecture		
50	Fifth Normal forms	PPT/Lecture		
51	Indexing structures for files	PPT/Lecture		
52	types of single level ordered indexes.	PPT/Lecture		
53	Introduction to transaction processing,:,	PPT/Lecture		
54	Transaction and system concepts, Desirable properties of transactions.	PPT/Lecture		
55	Database Security and Authorization	PPT/Lecture		
56	Types of security, control measures	Lecture	Debate	
57	database security and the DBA,	PPT/Lecture		
58	Access protection, User accounts and database audits.	PPT/Lecture		
MODULE V				
59	Data Mining Concept:	PPT/Lecture		
60	overview of Data mining technology	PPT/Lecture		
CIA II				
61	Association Rules, Classification,	PPT/Lecture		
62	Approaches to other data mining problems,	PPT/Lecture		
63	Applications	Lecture	video	
64	Overview of data warehousing and OLAP	Lecture		
65	Introduction, definition,	Lecture	Group discussion	
66	Characteristics	Lecture		
67	Building a data Ware House	PPT/Lecture		
68	problems and open issues in Data warehouses	PPT/Lecture		

69	Introduction to Big Data- What is Big Data. Why Big Data is Important,	PPT/Lecture		
70	Characteristics, Tools, Applications, Attributes of Big Data, types of Data, Challenges of big Data.	PPT/Lecture		
71	Introduction to Hadoop: History, advantages and limitations	PPT/Lecture		
72	Revision			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	14/12/2016	SQL Queries
2	9/1/2017	Normalization

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	10/2/2017	ER Diagram of different databases

References

- RamezElmasri and Shamkant B. Navathe -2011- Fundamentals of Database Systems 5th edition- Pearson Education
- Jain V. K.– 2016-Big Data and Hadoop – Khanna publishing
- Date C.J-2004-Database Systems 8E, Addison Wesley Pub. Co.
- Reghu Ramakrishnan -1998-Data base Management Systems - McGraw Hill International Edition.
- Bipin Desai -1991-An Introduction to Database Systems -Galgoria Publications
- Subhashini Chellappan-2015-Big Data and Analytics- Wiley

Web resource references:

- https://www.javatpoint.com/dbms-tutorial
- https://www.tutorialspoint.com/dbms/index.htm

COURSE 3 : **15U4CRCMT4 : VECTOR CALCULUS, THEORY OF EQUATIONS AND**

NUMERICAL METHODS

PROGRAMME	BSC COMPUTER APPLICATION	SEMESTER	4
COURSE CODE AND TITLE	15U4CRCMT4 : VECTOR CALCULUS, THEORY OF EQUATIONS AND NUMERICAL METHODS	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90
FACULTY NAME	SIMI T A		

COURSE OBJECTIVES

➢ To compute the gradient of a Scalar Field , the Divergence and Curl of a Vector Point Function, and the directional derivative

➢ To interpret the various properties of the gradient, the curl and divergence.

➢ To apply the concepts of vector integration, in particular those of the Green‟s theorem, Stoke‟s theorem and divergence theorem.

➢ To determine the number of roots and the roots of a polynomial equation of order at most four.

➢ To find roots of algebraic and transcendental equation using numerical methods

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE 1				
1.	Introductory Session	Discussion		
2.	Lines and planes in space	Lecture		
3.	Problems	Discussion		

4.	Problems	discussion		
5.	Cylinders and Quadric surfaces	Lecture		
6.	Problems	discussion		
7.	Vector functions	Lecture		
8.	Problems	discussion		
9.	Arc length and Unit tangent vector	Lecture		
10.	Problems	discussion	Video	
11.	Curvature	Lecture		
12.	Problems	discussion		
13.	Unit normal vector	Lecture		
14.	Problems	discussion		
15.	Torsion	Lecture		
16.	Problems	discussion	Video	
17.	Unit Binormal vector	Lecture		
18.	Problems	discussion		
19.	Directional derivatives and gradient vectors	Lecture		
20.	Problems	discussion		
21.	Tangent planes and Differentials	Lecture		
22.	Problems	discussion		
23.	Extra problems	discussion		
MODULE 2				
24.	Line integrals	Lecture		

25.	Problems	Lecture		
26.	Vector fields	Lecture		
27.	Problems	discussion		
28.	**CIA – I**			
29.	Answer discussion	discussion		
30.	Problems	discussion		
31.	Work Circulation and Flux	Lecture		
32.	Problems	discussion		
33.	Problems	discussion		
34.	Path independence,	Lecture		
35.	Problems	discussion		
36.	Potential functions	Lecture		
37.	Problems	discussion		
38.	conservative fields	Lecture		
39.	Problems	discussion		
40.	Green's theorem in the plane	Lecture		
41.	Problems	discussion		
42.	Problems	discussion		
43.	Surface area and Surface integrals	Lecture		
44.	Problems	discussion		
45.	Problems	discussion		
46.	Parameterized surfaces	Lecture		
47.	Problems	discussion		

48.	Problems	discussion		
49.	Stokes' theorem (statement only)	Lecture		
50.	Problems	discussion		
51.	Problems	Discussion		
52.	Divergence theorem and unified theory (no proof)	Lecture		
53.	Problems	Discussion		
54.	Problems	Discussion		
MODULE 3				
55.	Statement of fundamental Theorem of algebra	Lecture	Video	
56.	Problems	Discussion		
57.	Deduction that every polynomial of degree n has n and only n roots	Lecture		
58.	Problems	discussion		
59.	Relation between roots and coefficients	Lecture		
60.	Problems	Lecture		
61.	Problems	discussion		
62.	Transformation of equations	Lecture		
63.	Problems	discussion		
64.	Problems	Discussion		
65.	Reciprocal equations	Lecture		

66.	Problems	Discussion		
67.	Problems	Discussion		
68.	Cardan's method	Lecture		
69.	Problems	Discussion		
70.	Problems	discussion		
71.	Ferrari's method	Lecture		
72.	Problems	discussion		
73.	Problems	discussion		
74.	**CIA II**			
75.	Answer discussion	discussion		
76.	Symmetric functions of roots	Lecture		
77.	Problems	Lecture		
78.	Extra problems	discussion		
Module 4				
79.	Bisection Method	Lecture		
80.	Problems	Lecture		
81.	Method of False position	Lecture		
82.	Problems	discussion		
83.	Iteration Method	Lecture		
84.	Problems	discussion		
85.	Problems	Discussion		
86.	Newton - Raphson Method	Lecture		
87.	Problems	Discussion		
88.	Problems	discussion		

89.	Discussion on the CIA & REVISION	Discussion		
90.	REVISION & Evaluation of the Course	discussion		

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	15/12/2016	Problems on Green's theorem, Stokes' theorem, Divergence theorem.
2	5/1/2017	Problems on Cardan's method, Ferrari's method
3	30/2/2017	Problems on Iteration Method, Newton - Raphson Method

TEXT BOOKS & REFERNCES

1.   George B. Thomas Jr. (Eleventh Edition) – Thomas' Calculus, Pearson, 2008.

2.   Bernard and Child - Higher Algebra, AITBS Publishers, India.

3.   S.S. Sastry - Introductory Methods of Numerical Analysis, Fourth Edition, PHI.

COURSE 4- 15U4CPSTA04 : STATISTICAL INFERENCE

PROGRAMME	BACHELOR OF COMPUTER APPLICATIONS	SEMESTER	4
COURSE CODE AND TITLE	15U4CPSTA04 : STATISTICAL INFERENCE	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90
FACULTY NAME	MS. RESHMI A.N		

COURSE OBJECTIVES

➢ To describe and apply the concept of Estimation and its properties

➢ To describe and apply Interval Estimation

➢ To apply the concept and methods in testing of hypothesis.

➢ To apply Large Sample Tests and non parameteric tests

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	Syllabus Discussion	PPT	video	
2	Bridge course	Lecture		
3	Bridge course	Lecture		
4	Introduction	PPT/Lecture		
5	Concepts of Estimation	PPT/Lecture		
6	Concepts of Estimation	Lecture		
7	Types of estimation	PPT/Lecture	e-resource	
8	Point estimation	PPT/Lecture		
9	Properties of estimation	PPT/Lecture		
10	problems	Lecture		

11	Unbiasedness,	Lecture		
12	properties	Lecture		
13	problems	Lecture		
14	Consistency	Lecture		
15	properties	Lecture		
16	problems	Lecture		
17	Efficiency,	Lecture		
18	properties	Lecture		
19	problems	Lecture		
20	Sufficiency	Lecture		
21	problems	Lecture		
22	Unit revision	PPT/Lecture		
23	Methods of estimation	PPT/Lecture		
24	MLE	PPT/Lecture		
27	problems	Lecture		
28	Methods of Moments	Lecture		
29	problems	Lecture		
30	Method of Minimum Variance,	PPT/Lecture		
31	problems	Lecture		
32	Class test	Lecture		
33	Cramer Rao Inequality	Lecture		
34	Cramer Rao Inequality	Lecture		
35	PROBLEMS	Lecture		
36	Extra questions	Lecture		
37	Interval estimation	Lecture		

38	problems	Lecture		
39	Comparison of interval estimation with point estimation	Lecture		
40	Comparison of interval estimation with point estimation	Lecture		
41	Interval estimation for mean	Lecture		
42	Interval estimation for mean	Lecture		
43	problems	PPT/Lecture		
44	CIA I	Lecture		
45	Interval estimation for variance	PPT/Lecture		
46	problems	Lecture		
47	Problems	Lecture		
48	Interval estimation for proportions	PPT/Lecture		
49	Interval estimation for proportions	Lecture		
50	Unit Revision	PPT/Lecture		
51	Revision	Lecture		
52	CIA- 1	Lecture		
53	Testing of hypothesis	Lecture		
54	Testing of hypothesis	Lecture		
55	Statistical hypothesis,	Lecture		
56	Simple hypothesis	Lecture		
57	composite hypothesis	Lecture		
58	problems	Lecture		
59	Null and Alternative hypotheses	Lecture		
60	Type I and Type II errors	Lecture		

61	Critical Region,	Lecture		
62	problems	Lecture		
63	revision	Lecture		
64	Size of the test	Lecture		
65	Power of a test	PPT/Lecture		
66	Problems	Lecture		
67	Class test	Lecture		
68	Neyman Pearson approach(without proof)	Lecture		
69	Small sample tests – Z-test, t- test	PPT/Lecture		
70		PPT/Lecture		
71	problems	Lecture		
72	Paired t –test	Lecture		
73	Chi-square test for testing variance	Lecture		
74	F test for testing equality of variances	Lecture		
75	Large Sample test-	PPT/Lecture		
76	Z test for testing population means	Lecture		
77	Equality of population means; T	PPT/Lecture		
78	Testing population proportion	Lecture		
79	quality of two population proportions	Lecture		

80	Questions	Lecture		
81	Chi-Square test-goodness of fit	Lecture	Quiz	
82	Example problems	Lecture		
83	Chi-Square test -	Lecture	Q & Ans Session	
84	test of independence, problems	Lecture		
85	Analysis of Variance (one way classification), problems	PPT/Lecture		
86	Analysis of Variance (one way classification), problems	Lecture		
87	Non parametric tests	PPT/Lecture		
88	Non parametric tests	Lecture		
89	Revision	PPT/Lecture		
90	CIA 2	Lecture		

ASSIGNMENTS

	Date of Assignment	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	2-12-16	MINI PROJECT

REFERENCE

1. S.C. Gupta and V.K. Kapoor: Fundamentals of Mathematical Statistics, Sultan Chand and Sons

2. Richard Johnson (2006): Probability and Statistics for Engineers (Miller and Freund). Prentice Hall.

Additional References

1. S.C Gupta : Fundamentals of Mathematical Statistics, Sultan Chand and Sons.

2. V. K. Rohatgi: An Introduction to Probability Theory and Mathematical Statistics, Wiley Eastern.

3. Mood   A. M., Graybill F.A. and Boes D.C. Introduction to Theory of Statistics, McGraw Hill.

COURSE 5 - 15U4CRSTA05 : SAMPLE SURVEY ANALYSIS AND DESIGN OF EXPERIMENTS

PROGRAMME	BACHELOR OF COMPUTER APPLICATIONS	SEMESTER	4
COURSE CODE AND TITLE	15U4CRSTA05 : SAMPLE SURVEY ANALYSIS AND DESIGN OF EXPERIMENTS	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90
FACULTY NAME	MS. RESHMI A.N AND MS. RENSI SARATH		

COURSE OBJECTIVES

➢ To apply the various methods of sampling Simple Random Sampling and estimation techniques

➢ To apply the concept of stratified sampling and its estimation techniques

➢ To apply ANOVA technique

➢ To apply designs of experimentation like CRD,RBD and LSD and the statistical analysis of each of them

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	Bridge course	Lecture		
2	Bridge course	Lecture		
3	Introduction to sampling	Lecture		
4	Basic concepts: Census and Sampling	PPT	video	
5	Types of sampling	PPT/Lecture		
6	Probability sampling	PPT/Lecture		
7	Problems on Probability sampling	Lecture		
8	non probability sampling	Lecture		
9	Problems on non probability sampling	PPT/Lecture	e-resource	
10	Judgment sampling	Lecture		
11	Problems	Lecture		
12	Mixed sampling	Lecture		
13	problems	Lecture		
14	Quota sampling	PPT/Lecture		
15	problems	Lecture		
16	Sampling and non sampling errors	PPT/Lecture		
17	Examples	Lecture		
18	SRSWR	Lecture		
19	problems	Lecture		
20	SRSWOR	Lecture		
21	problems	Lecture		
22	Estimation of mean and total and	Lecture		

	variance of estimate			
23	Estimation of mean and total and variance of estimate	Lecture		
24	CIA I			
25	Simple Random Sampling for attributes	Lecture		
26	Simple Random Sampling for attributes	Lecture		
27	Questions	Lecture		
28	Estimation of sample size	Lecture		
29	Stratified random sampling	Lecture		
30	Questions answering	Lecture		
31	Estimation of the population mean	Lecture		
32	Assignment work	Lecture		
33	Library	Lecture		
34	Estimation of the population total	PPT/Lecture		
35	Estimation of variances	PPT/Lecture		
36	Proportional allocation	PPT/Lecture		
37	Neyman allocation	Lecture		
38	Problems on Neyman allocation	Lecture		
39	Problems on Neyman allocation	Lecture		
40	cost function optimum allocation	Lecture		
41	problems	Lecture		
42	comparison with simple random sampling	PPT/Lecture		
43	Fundamental principles of experimentation	PPT/Lecture		

44	Fundamental principles of experimentation	Lecture		
45	Analysis of one way classified data	PPT/Lecture		
46	Analysis of one way classified data	Lecture		
47	Analysis of one way classified data	Lecture		
48	Work sheet	Lecture		
49	Analysis of two way classified data	Lecture		
50	Analysis of two way classified data	Lecture		
51	Analysis of two way classified data	Lecture		
52	worksheet	Lecture		
53	Analysis of three way classified data	Lecture	Q & Ans Session	
54	Analysis of three way classified data	Lecture		
55	Analysis of three way classified data	Lecture		
56	worksheet	Lecture		
57	Completely Randomised Design	PPT/Lecture		
58	Analysis	Lecture		
59	problems	Lecture		
60	Randomised Block design	PPT/Lecture		
61	problems	Lecture		
62	Analysis	Lecture		
63	Latin Square Design	PPT/Lecture		
64	Analysis	Lecture		
65	problems	Lecture		
66	revision	Lecture		

67	Question paper answering	Lecture		
68	Class test	Lecture		
69 - 90	Revision			

INDIVIDUAL ASSIGNMENTS/SEMINAR

	Date of Assignment	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	15/12/2016	Assignment problems
2	5/1/2017	Problems on Analysis of two way classified data
3	28/2/2017	Problems on Latin Square Design
4	10-3-2017	Problems on Completely Randomised Design

REFERENCE

1   S.C. Gupta and V. K.Kapur. Fundamentals of Mathematical Statistics, Sultan Chand and sons New Delhi

2   S.P. Gupta. Statistical Methods ,Sultan Chand & Sons Delhi

3   B.L. Agarwal. Basic Statistics, New Age International (p) Ltd.

4   S.C.Gupta and V.K.Kapoor. Fundamentals of Applied Statistics,Sultan Chand & Sons Delhi

5   Murray R Spiegel, John Schiller, R. AluSrinivassan: Theory and problems of PROBABILITY AND STATISTICS, Schaum's outlines, Tata McGraw-Hill Publishing Company Ltd