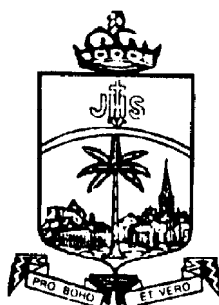


**PG DIPLOMA IN
COMPUTER SCIENCE AND APPLICATIONS
SYLLABUS: 2010-2012**

**CHOICE BASED CREDIT SYSTEM
(CBCS)**



St. JOSEPH'S COLLEGE (Autonomous)

Re-accredited with A+ Grade by NAAC

College with Potential for Excellence by UGC

TIRUCHIRAPPALLI - 620 002, INDIA

FEATURES OF CHOICE BASED CREDIT SYSTEM PG COURSES

The Autonomous (1978) St. Joseph's College, Reaccredited with A+ Grade from NAAC (2006), had introduced the Choice Based Credit System (CBCS) for PG courses from the academic year 2001 – 2002. As per the guidelines of Tamil Nadu State Council of Higher Education (TANSCHE) and the Bharathidasan University, the College has reformulated the CBCS in 2008 – 2009 by incorporating the uniqueness and integrity of the college.

OBJECTIVES OF THE CREDIT SYSTEM

- ✓ To provide mobility and flexibility for students within and outside the parent department as well as to migrate between institutions
- ✓ To provide broad-based education
- ✓ To help students learn at their own pace
- ✓ To provide students scope for acquiring extra credits
- ✓ To impart more job oriented skills to students
- ✓ To make any course multi-disciplinary in approach

What is credit system?

Weightage to a course is given in relation to the hours assigned for the course. Generally one hour per week has one credit. For viability and conformity to the guidelines credits are awarded irrespective of the teaching hours. The following Table shows the relation between credits and hours.

Sem.	Specification	No. of Papers	Hour	Credit	Total Credits
I – IV	Core Courses (Theory & Practical)	14	6	14 x 5	70
	Project	1	--	1 x 5	Additional
I – IV	3 – Core Electives	3	4	3 x 4	12
	2 – Inter Dept. Courses (IDC)	2	4	2 x 4	08
I – IV	SHEPHERD – Extension Activity	~	70	5	Additional

Total Minimum Credits	90
Total Additional Credits (Compulsory)	10
Other Additional Credits (Dept. Specific)

However, there could be some flexibility because of practical, field visits, tutorials and nature of project work.

For PG courses a student must earn a minimum of 90 credits and 10 compulsory credits as mentioned in the above table. The total number of courses offered by a department is 20. However within their working hours a few departments can offer extra credit courses.

Course Pattern

The Post Graduate degree course consists of three major components. They are Core Course, Elective Course and Inter Department Course (IDC). Also 2 compulsory components namely Project / Project related items and Shepherd, the extension components are mandatory.

Core Course

A core course is the course offered by the parent department, totally related to the major subject, components like Practical, Projects, Group Discussion, Viva, Field Visit, Library record form part of the core course.

Elective Course

The course is also offered by the parent department. The objective is to provide choice and flexibility within the department. The student can choose his/her elective paper. Elective is related to the major subject. The difference between core course and elective course is that there is choice for the student. The department is at liberty to offer three elective courses any semester. It must be offered at least in two different semesters. The Staff too may experiment with diverse courses.

Inter Department Course (IDC)

IDC is an inter departmental course offered by a department for the students belonging to other departments. The objective is to provide mobility and flexibility outside the parent department. This is introduced to make every course multi-disciplinary in nature. It is to be chosen from a list of courses offered by various departments. The list is given at the end of the syllabus copies. Two IDC s must be taken by students which are offered in Semester II & III.

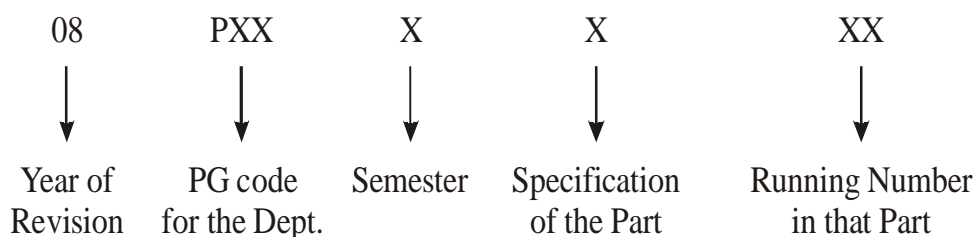
Day College (Shift-I) student may also take an IDC from SFS (Shift-II) course and vice versa

This provision enables students to earn extra credits. For the Shift – I students it is offered in their last hour and for the Shift-II

(Course) students in their first hour. The IDC are of application oriented and inter-disciplinary in nature.

Subject Code Fixation

The following code system (9 characters) is adopted for Post Graduate courses:



01 – Core Courses: Theory & Practical

02 – Core electives

03 – Additional Core Papers (if any)

04 – Inter Departmental Courses

05 – Project (compulsory)

06 – Shepherd (compulsory)

CIA Components

The CIA Components would comprise of two parts: (1) Test Components conducted by Controller of Examination (COE) and (2) Teacher specific component. The two centralized tests will be conducted by the COE (Mid-Semester Test & End-Semester Test) for 30% each administered for 1 hour and 30 minutes duration. The remaining 40% would comprise of any four components as listed below and will be carried out by the faculty concerned for that paper.

- ✓ Assignment, Quiz (Written / Objective), Snap test, Viva-Voce, Seminar, Listening Comprehension, Reading Comprehension, Problem Solving, Map Reading, Group Discussion, Panel Discussion, Field Visit, Creative Writing, Open Book Test, Library Record, Case Study.
- ✓ As a special consideration, students who publish papers in referred journals would be exempted from one of the teacher specific internal components in one of the papers. At the beginning of each semester, the four internal components would be informed to the students and the staff will administer those components on the date specified and the marks acquired for the same will be forwarded to the Office of COE.

Question Pattern

Pattern	Mid & End Semester Test	Semester Exam
Part A : Objective	10 x 0.5 = 05	20 x 1 = 20
Part B : Either/or type	3 x 3 = 09	5 x 4 = 20
Part C : Comprehensive	(2/3)2 x 8 = 16	(4/5)4 x 15 = 60
	Total = <u>30</u>	Total = <u>100</u>

Evaluation

For each course there are formative continuous internal assessment (CIA) and semester examinations (SE) in the weightage ratio 50:50. Once the marks of CIA and SE for each course are available, the Overall Percentage Mark (OPM) for a student in the programme will be calculated as shown below:

$$OPM = \frac{\sum C_i M_i}{\sum C_i} \text{ where } C_i \text{ is the credit earned for that course in any}$$

semester and M_i is the marks obtained in that course.

The Scheme of Over-all Results is as follows:

Class	PG	
	Arts (OPM)	Science (OPM)
SECOND	50 to 59.99	50 to 59.99
FIRST	60 to 74.99	60 to 79.99
DISTINCTION	75 & Above	80 & Above

The performance in Compulsory credits in Project and Project related items and in Shepherd programme is indicated by a pass and is not taken into account for computing OPM.

Declaration of Result

Mr. /Ms. _____ has successfully completed M.Sc. / M.A. degree course in _____. The student's overall average percentage of marks is _____ and has completed the minimum 90 credits. The student has acquired 10 more compulsory credits from Project and Shepherd courses. The student has also acquired _____ (if any) extra credits from courses offered by the parent department.

COURSE DETAIL

SEM	CODE	SUBJECT	HR	CR
I	10 DCA 1 1 01	C PROGRAMMING	5	5
	10 DCA 1 1 02	OFFICE AUTOMATION	5	5
	10 DCA 1 1 03	FOUNDATIONS OF COMPUTER SCIENCE	5	5
	10 DCA 1 1 04	LAB: C & OFFICE AUTOMATION	3	3
		Total For Semester I	18	18
II	10 DCA 2 1 05	VISUAL PROGRAMMING	5	5
	10 DCA 2 1 06	MULTIMEDIA	5	5
	10 DCA 2 1 07	HTML & JAVASCRIPT	5	5
	10 DCA 2 1 08	LAB: VB, HTML & PHOTOSHOP	3	3
		Total For Semester II	18	18
		TOTAL FOR ALL SEMESTERS		36

Sem : I
10 DCA 1 1 01

Hours/Week : 5
Credits : 5

C PROGRAMMING

AIM

To give an introduction to computer programming and to highlight the various features of C language.

UNIT I

13 Hrs

INTRODUCTION: Basic Structure of C Program- Programming style - Executing a Program. **CONSTANTS, VARIABLES AND DATA TYPES:** Character Set – C Tokens – Keywords and Identifiers – Constants – Variables – Data Types – Declarations of Variables - Assigning Values to Variables. **OPERATORS AND EXPRESSIONS:** Arithmetic Operators – Relational Operators – Logical Operators – Assignment Operator – Increment and Decrement Operators – Conditional Operator - Evaluation of Expressions - Operators Precedence and Associativity.

UNIT II

13 Hrs

MANAGING INPUT AND OUTPUT OPERATORS: Reading a Character – Writing a Character. **DECISION MAKING AND BRANCHING:** Simple IF Statement – IF-ELSE Statement – Nesting of IF ELSE Statement - Switch Statement. **LOOPING:** WHILE Statement – DO Statement – FOR statement.

UNIT III

13 Hrs

ARRAYS: One Dimensional Arrays – Two Dimensional Arrays. **HANDLING OF CHARACTER STRINGS:** Declaring and Initializing String Variables – Reading String From Terminals – Arithmetic Operations on Characters – Putting Strings Together – Comparison of Two Strings – String Handling Functions.

UNIT IV**13 Hrs**

FUNCTIONS: Need for User Defined Functions – Form of C Functions – Return Values and Their Types – Calling a Function – Nesting of Functions – Recursion.

UNIT V**13 Hrs**

STRUCTURES AND UNIONS: Structure Definition – Giving Values to Members – Structure Initializing – Arrays of Structures – Unions. **FILE MANAGEMENT:** Defining and Opening a File – Closing a File – Random Access Files.

BOOK FOR STUDY

Balagurusamy E., "Programming in ANSI C", 2nd Edition, Tata McGraw-Hill Ltd., New Delhi, 2002.

BOOKS FOR REFERENCE

Gottfried S Byron, "Programming with C", Tata McGraw-Hill Ltd., New Delhi, 2002.

Sem : I
10 DCA 1 1 02

Hours/Week : 5
Credits : 5

OFFICE AUTOMATION

AIM

To impart the knowledge about the office automation and the features of MS-OFFICE.

UNIT I

13 Hrs

OFFICE AUTOMATION: Introduction – Nature of Office Work – Functions of an Office – Office Communications – Services of an Office – Need for Office Automation

UNIT II

13 Hrs

WORD: Introduction – Editing document – Move and Copy Text – Formatting Text and Paragraph – Finding and Replacing Text - Spell Checking – Using Tabs – Enhancing Document – Columns , Tables and Other Features.

UNIT III

13 Hrs

EXCEL: Introduction to Excel – Editing Cells and Using Commands and Functions – Moving Copying, Inserting and Deleting Rows and Columns – Printing the Worksheet – Creating charts - Using Date and Time and Addressing Modes – Naming Ranges and Financial Functions.

UNIT IV

13 Hrs

POWERPOINT: Desktop Publishing–DTP Programs – Power Point – Power Point Views – Running Slide Show-Printing Presentation.

UNIT V

13 Hrs

ACCESS: Introduction-Starting Microsoft Access-Creating a New Database-Creating a New Table-Rename Columns- Saving the Database-Query – Form – Reports.

BOOK FOR STUDY

Taxali R.K, "PC Software for WINDOWS Made Simple", Tata McGraw-Hill Ltd., New Delhi, 1998

BOOK FOR REFERENCE

Sanjay Saxena, "MS-OFFICE 2000 FOR EVERYONE", Vikas Publishing House Pvt.Ltd., New Delhi, 2000.

Sem : I
10 DCA 1 1 03

Hours/Week : 5
Credits : 5

FOUNDATIONS OF COMPUTER SCIENCE

AIM

To provide various basic concepts about Computer Science.

UNIT I

13 Hrs

OPERATING SYSTEM: Early Systems - Multiprogrammed Batch Systems – Real-Time Systems - Computer-System Operation - Storage Hierarchy - General System Architecture - System Components – System Calls- System Generation.

UNIT II

13 Hrs

DATA STRUCTURES: Ordered Lists – Representation of Arrays- Stacks and Queues - Evaluation of Expressions.

UNIT III

13 Hrs

DATABASE MANAGEMENT SYSTEM: Data Modeling for a Database - Records and Files - Abstraction and Data Integration - The Three level Architecture for DBMS - Components of a DBMS - Advantages and Disadvantages of DBMS.

UNIT IV

13 Hrs

OBJECT-ORIENTED PROGRAMMING: Object Oriented Technology - Disadvantages of Conventional Programming—Key Concepts of Object Oriented Programming—Advantages of Object Oriented Programming.

UNIT V

13 Hrs

SYSTEM ANALYSIS AND DESIGN: Definition of System – Characteristics of System – Elements of System – System Development Life Cycle – Role of System Analyzer: Definition – Academic & Personal Qualification of SA – Roles of Analyzer.

BOOKS FOR STUDY

1. Abraham Silberschatz and Peter Baer Galvin, "Operating System Concepts", 4th Ed, Addison Wesley Longman Inc., New York, 1999.

UNIT I

2. Ellis Horowitz and Sartaj Sahni, "Fundamentals of Data Structure", Galgotia Publications, New Delhi. 1985

UNIT II

3. Bipin C. Desai, "An Introduction to Data Base System", Galgotia, New Delhi, 2005

UNIT III

4. Ashok N. Kamthane, "Object Oriented Programming with ANSI & TURBO C++", Pearson Education, 2006

UNIT IV.

5. Elias M. Awad, "System Analysis and Design", Galgotia, New Delhi, 2000.

UNIT V

Sem : I
10 DCA 1 1 04

Hours/Week : 3
Credits : 3

LAB – C & OFFICE AUTOMATION

C

1. Find the given number is odd or even, Sum of digits
2. Factorial for given number using Functions
3. Find the nth term of Fibonacci sequence
4. Sorting the array element
5. String manipulation using functions

OFFICE AUTOMATION

6. In MS WORD use the following operations – Spell Check, Table Creation, Mail Merge
7. In MS Excel, Use Basic Functions.
8. In MS Excel, Draw Different Types of Charts.
9. In MS PowerPoint, Create a Simple Slide Show.
10. In MS Access, Create a Student Database.

Sem: II
10 DCA 2 1 05

Hours/Week: 5
Credit: 5

VISUAL PROGRAMMING

AIM

To highlight the features of GUI and apply it to develop various applications.

UNIT I

13 Hrs

INTRODUCING VISUAL BASIC: What is Visual Basic - Features of Visual basic - The Visual Basic philosophy - Developing an application - Creating an application – Objectives – Toolbox - Project Explorer - Properties window - Form Window - List of Controls – Toolbar - Textbox control - Picture Box, Label, list, combo, checkbox - Line and Shape controls, image controls.

UNIT II

13 Hrs

IDE FORMS AND CONTROLS: Objectives -The Form-Working with Control-Opening the code Window. **VARIABLES IN VISUAL BASIC:** What is a variables - Declaring Variables - Data types - Null Values - Scope of an Variable - Module level variables – Constants - Scope of Constants - Converting Data types – Arrays - Multidimensional arrays - Dynamic arrays.

UNIT III

13 Hrs

WRITING CODE IN VISUAL BASIC: The Code window - the Anatomy of a procedure - subroutine or function - Editor features - The Decision Maker: If-Loop -While Loop - Select case - end select.

UNIT IV

13 Hrs

MENUS: All about Menus - Menu system, Menu Convention - The Menu editor - Using the Menu Editor - Making the Menu Better - Coding the Menu items - Adding the Toolbar - Toolbar convention - Pasting Icons On Buttons.

UNIT V**13 Hrs**

MULTIPLE DOCUMENT INTERFACE APPLICATIONS: Why MDI Forms - Features of an MDI Form - Loading MDI forms and Child forms - The Active Form Property -Specifying the active child Form or Control - Maintaining State information for a child form - Unloading MDI form with Query Unload.

BOOK FOR STUDY

Mohammed Azam, "Programming with VISUAL BASIC 6.0", Vikas Publishing, New Delhi, 2006.

BOOKS FOR REFERENCE

1. Gary Cornell, "Visual basic 6.0 from the Ground Up" Tata McGraw hill, New Delhi, 2000.
2. McBride, "Programming in Visual basic", BPB Publications, New Delhi, 2000.

Sem: II
10 DCA 2 1 06

Hours/Week: 5
Credit: 5

MULTIMEDIA

AIM

To understand the basic concepts of multimedia and hands on experience of Photoshop.

UNIT I

13 Hrs

INTRODUCTION TO MULTIMEDIA : Definition – Usage of Multimedia – Hardware peripherals – Connections – Memory and storage devices – Input devices – Output devices – Communication Devices – The Multimedia Team – Multimedia Designer - Interface Designer, Writer, Video Specialist, Audio Specialist, Multimedia Programmer.

UNIT II

13 Hrs

TEXT, SOUNDS, AUDIO AND IMAGE: Multimedia Building Blocks – Text – About fonts and faces – Computers and text Font editing and design tools – Digital and audio representation and processing – Uses of audio in computer applications – Transmission of digital sound – Digital audio signal processing.

UNIT III

13 Hrs

Getting Started with Photoshop – Layers in Photoshop & Work path - Image Editing.

UNIT IV

13 Hrs

Channels, Masks and Actions – Working with Filters – Rollovers and Animations.

UNIT V

13 Hrs

Opening and Importing Images - Resolution- Modes and

Colour Spaces- Layers- Painting Tools-Erasing-Fills-Type. Selection and Allied Operations: Marquee Selection and Cropping- Lasso Selections.

BOOKS FOR STUDY

1. Tay Vaughan, " Multimedia Making It Work", 4th Ed., TMH, New Delhi, 2001.
2. Nigel Chapman and Jenny Chapman, "Practical Multimedia ", 2nd Edition, Wiley Dream Technology India (P) Ltd.
3. Manish Jain, " Multimedia & Web Design", BPB Publications, New Delhi, 2005.

Sem: II
10 DCA 2 1 07

Hours/Week: 5
Credit: 5

HTML & JAVASCRIPT

AIM

To understand the basic concepts of HTML and JAVA SCRIPT.

UNIT I

13 Hrs

INTRODUCTION: Internet – History of Internet - WWW – Email – E-Business – Applications of Internet.

UNIT II

13 Hrs

HTML: History of HTML – Anchor Tag – Hyperlinks – Sample HTML Documents. **HEAD AND BODY SECTIONS:** Header Section – Title – Prologue – Links – Colorful Webpage – Comment Line – Aligning The Headings – Horizontal Rule – Paragraph – Images And Pictures.

UNIT III

13 Hrs

ORDERED LIST AND UNORDERED LIST: Un Ordered List – Heading In A List – Ordered List – Nested List. **TABLE HANDLING:** Tables – Table Creation In HTML – Width Of The Table And Cells – Cell Spanning – Coloring Cells. **FRAMES:** Frame Set Definition – Frame Definition –Nested Frame Set - HTML Forms.

UNIT IV

13 Hrs

DHTML AND STYLE SHEETS: Features Of DHTML – Defining Styles – Elements Of Styles – Linking A Style Sheet To An HTML Document – Inline Styles – External Style Sheet – Internal Style Sheet – Multiple Styles.

UNIT V

13 Hrs

JAVASCRIPT: Running Scripts – Built In Objects – Operators and Variables – Local and Global Variables – Keywords – Functions.

ADDING INTERACTIVITY TO A WEBPAGE: Conditional Statement for Decision Making – Function Declaration. **CREATING DYNAMIC WEBPAGE:** Changing Pages Based On Time And Date – Displaying The Quote Of The Day – Using Arrays.

BOOKS FOR STUDY

1. C. Xavier, "World Wide Web Design with HTML", Tata McGraw Hill Ltd, New Delhi. UNIT I, II, III & IV
2. Lee Purcell, Mary Jane Mara, "The ABC's of Java Script", BPB Publications, New Delhi. UNIT V.

Sem : II
10 DCA 2 1 08

Hours/Week : 3
Credits : 3

LAB – VB, HTML & PHOTOSHOP

VB

1. Arithmetic Operations
2. Adding and Removing Items into List Box
3. Data Navigation using ADO Data control

HTML

4. Basic Tags
5. Table Creation
6. Frames
7. Forms

PHOTOSHOP

8. Set the size of an image in Photoshop.
9. Clone an image to copy pixels and repair an image in Photoshop.
10. Create an image using two layers, the first layer has a colored background and second layer shows a text that costs shadow effect.