**Sacred Heart College (Autonomous), Tirupattur District**

**1.2.1 List of New Courses**

# BCA

| Sem | Subject Code | Part | Subject | L | P | CD | CA | SEM |
|---|---|---|---|---|---|---|---|---|
| I | LT114 | I | Tamil – I | 5 | | 3 | 50 | 50 |
| | LE115BT | II | English – I | 5 | | 2 | 50 | 50 |
| | CE103 | II | Communicative English - I | | | 1 | 50 | 50 |
| | AM114D | III | Mathematical Foundations – I | 6 | | 4 | 50 | 50 |
| | CA107 | III | Digital Computer Fundamentals | 4 | | 4 | 50 | 50 |
| | CA108 | III | Internet Concepts and Web Design | 4 | | 4 | 50 | 50 |
| | PCA104 | III | Practical - I : Internet Concepts and Web Design | | 2 | 2 | 50 | 50 |
| | SK104 | IV | Communication Skills | 2 | | 1 | - | 100 |
| | VE105B / VE105A | IV | Value Education - I / Christian Religion - I | 2 | | 1 | - | 100 |
| | LE115BP | | English Lab - I | | | 1 | - | 100 |
| | | | | **28** | **2** | **23** | | |
| II | LT214 | I | Tamil – II | 5 | | 3 | 50 | 50 |
| | LE215BT | II | English – II | 5 | | 2 | 50 | 50 |
| | CE203 | II | Communicative English - II | | | 1 | 50 | 50 |
| | AM214D | III | Mathematical Foundations – II | 6 | | 4 | 50 | 50 |
| | CA207 | III | Programming with C | 4 | | 4 | 50 | 50 |
| | CA208 | III | Operating System | 4 | | 4 | 50 | 50 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | PCA204 | III | Practical-II : Programming with C | | 2 | 2 | 50 | 50 |
| | SK204 | IV | Leadership Skills | 2 | | 1 | - | 100 |
| | VE205B / VE205A | IV | Value Education - II / Christian Religion – II | 2 | | 1 | - | 100 |
| | LE215BP | | English Lab – II | | | 1 | - | 100 |
| | | | | **28** | **2** | **23** | | |

| **Sem** | **Subject Code** | **Part** | **Subject** | **L** | **P** | **CD** | **CA** | **SEM** |
|---|---|---|---|---|---|---|---|---|
| III | CA312 | III | Computer Networks | 4 | | 4 | 50 | 50 |
| | CA313 | III | Programming with JAVA | 4 | | 3 | 50 | 50 |
| | CA314 | III | Data Structures using C | 4 | | 4 | 50 | 50 |
| | AC309 | III | Allied – Financial Accounting - I | 6 | | 4 | 50 | 50 |
| | CA315A/ B/C | III | Discipline Specific Elective I | 4 | | 3 | 50 | 50 |
| | PCA306 | III | Practical -III - Data Structures using C | | 2 | 2 | 50 | 50 |
| | PCA307 | III | Practical-IV : Programming with JAVA | | 2 | 2 | 50 | 50 |
| | SK304 | IV | Technical Skills | 2 | | 1 | - | 100 |
| | VE306 | IV | Human Rights | 2 | | 1 | - | 100 |
| | | VI | Certificate Course - I # | | | 2# | | |
| | | | | 26 | 4 | **24+2#** | | |
| IV | CA412 | III | Software Engineering | 4 | | 4 | 50 | 50 |
| | CA413 | III | Enterprise Applications using .NET | 4 | | 3 | 50 | 50 |
| | CA414 | III | Relational Database Management System | 4 | | 4 | 50 | 50 |
| | AC411 | III | Allied – Financial Accounting - II | 6 | | 4 | 50 | 50 |
| | CA415 | III | Emerging Computing Paradigms | 4 | | 3 | 50 | 50 |
| | PCA406 | III | Practical – V : Enterprise Applications using .NET | | 2 | 2 | 50 | 50 |
| | PCA407 | III | Practical–VI : Relational Database Management System | | 2 | 2 | 50 | 50 |
| | SK404 | IV | Employability Skills | 2 | | 1 | - | 100 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | VE406 | IV | Environmental Science | 2 | | 1 | - | 100 |
| | CO-DED | V | Outreach Programme | | | 2 | | |
| | C0-SHE | V | Groups and Movements | | | 2 | | |
| | | VI | Certificate Course – II# | | | 2# | | |
| | | | | **26** | **4** | **28 + 2#** | | |

| **Sem** | **Subject Code** | **Part** | **Subject** | **L** | **P** | **CD** | **CA** | **SEM** |
|---|---|---|---|---|---|---|---|---|
| V | CA514 | III | Software Testing and Quality Assurance | 4 | | 4 | 50 | 50 |
| | CA515 | III | Computer Graphics | 4 | | 4 | 50 | 50 |
| | CA516 | III | Enterprise Applications using JAVA | 5 | | 4 | 50 | 50 |
| | CA517 | III | Programming with Python | 5 | | 4 | 50 | 50 |
| | PCA505 | III | Practical - VII - Enterprise Applications using JAVA | | 6 | 4 | 50 | 50 |
| | PCA506 | III | Practical - VIII - Programming with Python | | 4 | 4 | 50 | 50 |
| | NCA504 | IV | Non Major Elective I : Introduction to Information Technology | 2 | | 1 | - | 100 |
| | | VI | Self Study Paper I- Inplant Training* | - | | 1* | | |
| | | | | **20** | **10** | **25 + 1*** | | |
| VI | CA612 | III | Cloud Computing | 4 | | 4 | 50 | 50 |
| | CA613 | III | Mobile Application Development | 5 | | 4 | 50 | 50 |
| | CA614 | III | Web Programming using PHP | 5 | | 5 | 50 | 50 |
| | CA615A/B/C | III | Discipline Specific Elective II | 4 | | 3 | 50 | 50 |
| | PCA608J | III | Project Work | | 6 | 4 | - | 100 |
| | PCA607 | III | Practical IX - Mobile Application Development and PHP | | 4 | 4 | 50 | 50 |
| | NCA604 | IV | Non Major Elective – II : Multimedia | 2 | | 1 | - | 100 |
| | | VI | Self Study Paper II: NPTEL* | - | | 1* | | |
| | | | | **20** | **10** | **25+1*** | | |

# B.Com (CA) Allied course

| SEMESTER | PART | SUBJECT | L | P | CD |
|---|---|---|---|---|---|
| I | III | Office Automation | 4 | | 3 |
| | III | Practical -I : Office Automation | | 2 | 1 |
| **II** | III | Internet Concepts and Web Design | 4 | | 3 |
| | III | Practical -II : Internet Concepts and Web Design | | 2 | 1 |
| III | III | Programming with C | 4 | | 3 |
| | III | Practical -III: Programming with C | | 2 | 1 |
| **IV** | III | Relational Database Management System | 4 | | 3 |
| | III | Practical -IV: Relational Database Management System | | 2 | 1 |
| V | III | Computer Organization | 4 | | 4 |
| | III | Web Programming Using PHP | 4 | | 4 |
| | III | Practical -V: Web Programming Using PHP | | 2 | 2 |
| **VI** | III | Management Information System | 4 | | 4 |
| | | **TOTAL** | **28** | **10** | **30** |

**Sacred Heart College (Autonomous), Tirupattur District**

**1.2.1 List of New Courses**

**Department: BCA**

| S.No | Course Code | Course Name |
|---|---|---|
| 1. | CA107 | Digital Computer Fundamentals |
| 2. | CA108 | Internet Concepts and Web Design |
| 3. | PCA104 | Practical - I : Internet Concepts and Web Design |
| 4. | CA207 | Programming with C |

**Syllabus:**

**SEMESTER – I**

**DIGITAL COMPUTER FUNDAMENTALS**

| | | | |
|---|---|---|---|
| **Course Code** | CA107 | **Credit** | **4** |
| **Instruction Hours per Week** | **4** | **Marks** | **CIA (50) / SE (50)** |

| | |
|---|---|
| **Course Objective** | • To know and understand the fundamentals of a computer system<br>• To understand the basics of digital design and number systems<br>• To learn about combinational gates and k-maps to simplify the Boolean functions<br>• To know and understand the purpose of sequential circuits<br>• To learn the purpose of different registers and counters |

## COURSE OUTLINE

**UNIT 1: INTRODUCTION TO COMPUTERS**

Introduction: Characteristics of Computers – Evolution of Computers – Computer Generations. Basic Computer Organization: Input and Output Unit – Storage Unit – ALU – CU – CPU. Processor: Central Processing Unit – Memory: Main memory - Secondary Storage: Magnetic Tape, Magnetic Disks, Optical Disks, Main storage devices.

**UNIT 2: BASICS OF DIGITAL DESIGN**

Binary Systems: Digital Computers and Digital Systems - Binary Numbers - Number Base Conversions - Octal and Hexadecimal Numbers – Complements - Signed Binary Numbers - Binary Codes - Binary Storage and Registers - Binary Logic - Boolean Algebra and Logic Gates: Basic Theorems and Properties of Boolean Algebra - Boolean Functions - Canonical and Standard Forms - Digital Logic Gates - IC Digital Logic Families.

**UNIT 3: K-MAPS AND COMBINATIONAL CIRCUITS**

Simplification: K-Map Method – Two, Three Variable Maps - Table Method - Don't Care Conditions - NAND, NOR Implementation. Combinational Logic Circuits: Introduction - Design Procedure – Adders – Subractors - Code Conversion – Analysis Procedure - Binary Parallel Adder – Decoders – Encoders - Multiplexers – Programming Logic Array (PLA).

**UNIT 4: SEQUENTIAL CIRCUITS**

Sequential Logic: Flip-Flops - Triggering of Flip-Flops - Analysis of Clocked Sequential Circuits - State Reduction and Assignment - Design Procedure – Design of Counters.

**UNIT 5: DIGITAL COMPONENTS**

Registers and Counters: Registers, Shift Registers, Ripple Counters, Synchronous Counters – Timing Sequence – The Memory Unit – Examples of Random Access Memories.

**3. TEXTBOOKS**

i) Pradeep K. Sinha, Priti Sinha, "Computer Fundamentals", Sixth Edition.BPB Publications.
**UNIT 1 : Ch.1, 2, 7 & 8**

i) M. Morris Mano, "Digital Logic and Computer Design", 3rd edition, Pearson Education, Delhi, 14th Impression 2012.
**UNIT 2 : Ch.1 & 2**

**UNIT 3 : Ch. 3, 4 & 5**

**UNIT 4 : Ch. 6**

**UNIT 5 : Ch. 7**

**4. REFERENCES**


1) Anita Goel, "Computer Fundamentals", Pearson India, 2010
2) Donald P Leech, Albert Paul Malvino and Goutam Saha, "Digital Principles and Applications", Tata Mc Graw Hill, 2007.
3) Bartee, "Digital Computer Fundamentals", Tata McGraw Hill Publications.
4) Malvino, "Digital Computer Electronics", Tata McGraw Hill Publications


**5. WEB REFERENCES**

- https://www.tutorialspoint.com/digital_circuits/index.htm
- https://www.javatpoint.com/digital-electronics
- https://www.electronics-tutorials.ws/logic/logic_1.html

**6. SUPPLEMENT LEARNING**

- Four, Five, Six K-Maps
- RAID storage devices
- Computer Languages
- Data Representation
- Computer Arithmetic

**Syllabus:**

**SEMESTER - I**

**INTERNET CONCEPTS AND WEB DESIGN**

| | | | |
|---|---|---|---|
| **Course Code** | CA108 | **Credit** | **4** |
| **Instruction Hours per Week** | **4** | **Marks** | **CIA (50) / SE (50)** |

| | |
|---|---|
| **Course Objective** | • To know the concept of basics of Internet.<br>• To become knowledgeable in Fundamentals of Html<br>• To ensure that the students have a basic understanding of creating Forms and Frames.<br>• To understand the concept of Cascading Style Sheet.<br>• To be aware of the method of Java Script. |

## 1. COURSE OUTLINE

**UNIT 1: INTERNET CONCEPTS**

Introduction to Internet: Internet history – Internet Access –Internet Services and Features - TCP/IP – Telnet – Changing the Password – WWW – Web Page – Net Surfing – Web Browser – Internet Addressing – Internet Protocols – Searching the Web: Web Index – Web Search Engines – Meta Search Engines – Directories – Specialized Directories – Electronic Mail – E mail messages – Managing Mails – Signature Feature - Advantages and Disadvantages of E mail.

**UNIT 2: BASICS OF HTML**

Core Elements and Attributes: <html> Element, <head> Element, <title> Element><body> Element – Basic Text Formatting: Creating Paragraph – Creating Line Breaks – Creating Preformatted Text- Presentational Elements – Phrase Elements – Lists –Links: Linking to other Documents – Linking to E-mail Addresses –Creating Links with the <a> Element – Images: Adding Images to your site – Using images as Links – Tables: Basic table Elements and Attributes - Rowspan – Colspan.

**UNIT 3: FORMS AND FRAMES**

Forms Introduction: Creating a Form with the <form> Element – Action Attribute – Method attribute – Id Attribute – Name Attribute - Onsubmit Attribute - Onreset Attribute - Form Controls: Text inputs – Buttons – Check boxes – Radio Buttons – Select Boxes – File Select Boxes. Frames: Introducing the Frameset - The <Frameset> Element: Cols Attribute - rows Attribute – The <Frame> Element: The src Attribute – The name Attribute – The Frame Border Attribute – The margin width and height attribute - Creating Links between Frames

**UNIT 4: CSS**

CSS Introduction- CSS Rules: The <link> and <style> Element – CSS Properties: Controlling Fonts –Text Formatting –CSS3: CSS Rounded Corner – Border Images – Multi Background –Color – Gradients –Shadow – Text - 2D and 3d Transform.

**UNIT 5: JAVASCRIPT**

Jscript: Introduction –Adding a script to your Pages: Comments in a Javascript – The <noscript> Element - The Document Object Model: Objects, Methods and Properties – The Forms Collection - Form Elements - Starting to Program with JavaScript: Variables – Operators – Functions – Conditional Statements – Working with Javascript: Form Validation.

## 3. TEXTBOOKS

1) Dr. Raymond Nancy Philip, "A TEXTBOOK of Internet and Web Designing", First Edition, 2017
   **Unit 1 : Ch 1.1-1.4, 1.8–1.10, 1.13 – 1.17, 2.1- 2.10**
2) Jon Duckett, "Beginning Web Programming with HTML, XHTML and CSS", 2nd Edition, 2008.
   **Unit 2 : Ch 1,2,3,4**
   **Unit 3 : Ch 5, 6**
   **Unit 4 : Ch 7**
   **Unit 5 : Ch 11, 12**

## 4. REFERENCES


1) Joel Sklar. Principles of Web Design. Singapore: Thomson Asia Pvt. Ltd, 2000 Powell, Thomas A.
2) Web Design – The Complete Reference. Tata McGraw Hill Edition, 2000.


### 5. WEB REFERENCES

- www.jquery.com
- www.w3schools.com
- www.hscripts.com
- http://www.html5andcss3.org/http://www.tutorialspoint.com/html5/
- http://www.html-5-tutorial.com/
- https://www.tutorialspoint.com/css/css3_tutorial.htm

### Online Tutorial

- https://edu.gcfglobal.org/en/internetbasics/what-is-the-internet/1/
- https://www.w3schools.com/html/

### Online Quiz

- https://www.geeksforgeeks.org/html-course-practice-quiz-1/
- https://www.w3schools.com/css/css_quiz.asp

### Online Compiler

- https://www.tutorialspoint.com/online_html_editor.php
- https://www.w3schools.com/js/js_editor.asp

### 6. SUPPLEMENT LEARNING

- Network
- Meta Tag
- Div Tag

- Lay outs
- Responsive Web Design (RWD)

**Semester – I**

**PRACTICAL - I: INTERNET CONCEPTS AND WEB DESIGN**

| | | | |
|---|---|---|---|
| **Course Code** | PCA104 | **Credit** | **2** |
| **Instruction Hours per Week** | **2** | **Marks** | **CIA (50) / SE (50)** |

1. Basic HTML tags
2. Background color and Images
3. HTML Link and List
4. HTML Tables and Frames
5. HTML Form Controls
6. CSS Inclusion and Properties
7. CSS 2D and 3D Transform
8. Jscript – Variables, constants, functions
9. Jscript – Methods and Functions
10. Jscript Validation

**Semester – II**

**PROGRAMMING WITH C**

| | | | |
|---|---|---|---|
| **Course Code** | CA207 | **Credit** | **4** |
| **Instruction Hours per Week** | **4** | **Marks** | **CIA (50) / SE (50)** |

| | |
|---|---|
| **Course Objective** | • To enhance their analyzing and problem-solving skills and use the same for writing programs in C.<br>• To develop logics and that will help them to create programs, applications in C.<br>• To identify programming task involved in a given computational problem.<br>• To identify tasks in which the numerical techniques learned are applicable and apply them to write programs.<br>. |

## 1. COURSE OUTLINE

**UNIT – I: INTRODUCTION OF C PROGRAMMING**

Steps Involved in Computer Programming – Problem Definition – Outlining The Solution – Flow Chart – Developing Algorithms - Structure of a C program – Basic data types– constants and variables – operators and expressions – Control Constructs (if, switch, while, do…while, for, break and continue, exit function, goto and label).

**UNIT – II: ARRAYS AND FUNCTIONS**

Arrays (declaration, one and two dimensional arrays) - Character Arrays and Strings. Function Fundamentals (General form, Function Definition, Function arguments, return value) – Parameter passing: call-by-value and call-by-reference – Recursion – Passing Arrays to Function – Passing Strings to Function.

**UNIT – III: POINTERS**

Understanding Pointers – Accessing the Address of a Variable – Declaring the Pointer Variables – Initialization of Pointer Variables – Accessing a Variable through its Pointer – Pointer Expressions – Pointers and Arrays – Pointers and Character Strings – Array of Pointers – Pointers as Function Arguments – Functions returning Pointers – Pointers to Functions.

**UNIT – IV: STORAGE CLASSES, STRUCTURES AND UNIONS**

Scope rules (Local variables and global variables, scope rules of functions) -Type modifiers and storage class specifier. Structures – Basics of Structure – Declaring of Structure – Referencing Structure elements - Array of Structures – Nesting of Structures - Passing Structures to function – Pointers and Structures - Unions.

**UNIT – V: FILE MANAGEMENT IN C**

Introduction – Defining and Opening a File – Closing a File – Input / Output Operations on Files – Command Line Arguments.