Annai Hajira Women's College

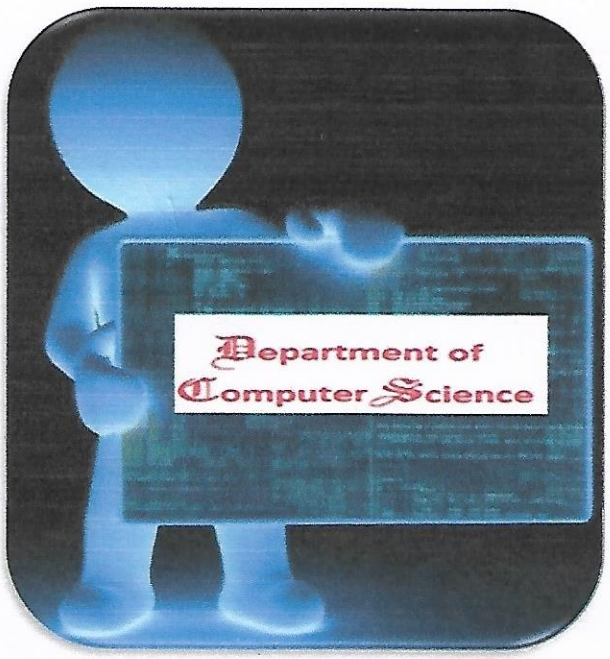
Department of Computer Science

Syllabus 2017 - 2020

PO, PSO & CO's of Computer Science

UG-Programme – CBCS – SEMESTER PATTERN

Course Code: CS



e-mail: csc@annaihajiracollege.com

UG - Programme - Course Structure under CBCS

B. Sc - Computer Science

(Applicable to the candidates admitted from the academic year 2017-2020 onwards)

FIRST SEMESTER

Sub - Code	Subject Title	Lecture Hours	LAB Hours	Credits
S1TL11	Part – I Language : Tamil	6	---	4
S2EN11	Part – II Language : English	6	---	4
SMCS11	Part III Core : Programming in C	5	---	4
SMCSP1	Major : Practical - I Programming in C	---	4	2
SACS11	Allied 1 : Theory Discrete Mathematics	3	---	3
SACSP1	Allied : Practical - I Computer Basics	---	4	2
SEVS11	Part IV : Environmental Studies	2	---	2
Total	(5T + 2P Courses)	22	8	21

SECOND SEMESTER

Sub - Code	Subject Title	Lecture Hours	LAB Hours	Credits
S1TL21	Part – I Language : Tamil	6	---	4
S2EN21	Part – II Language : English	6	---	4
SMCS21	Part III Core : Theory Programming in C++	5	---	4
SMCSP2	Major Practical - II Programming with C++	---	4	2
SACS21	Allied 2 : Theory Digital Design	3	---	3
SACSP1	Allied : Practical - II Linux	---	4	2
SVBE21	Part IV : Value Based Education	2	---	2
Total	(5T + 2P Courses)	22	8	21

THIRD SEMESTER

Sub - Code	Subject Title	Lecture Hours	LAB Hours	Credits
SMCS31	Part III : Core : Theory Java Programming	4	---	4
SMCS32	Core : Theory Computer Architecture	5	---	4
SMCS33	Core : Theory Data Structures	4	---	4
SMCSP3	Major Practical - III Java Programming	---	4	2
SACS31	Allied 3: Theory Web Technology	3	---	3
SACSP2	Allied : Practical - III Web Design using HTML	---	4	2
SSCS3A	Part III : Skill Based I Core Programming with PHP & MySQL	4	---	4
SNCS3B	Non Major Elective I Basic Programming Design	2	---	2
SYOG3A	Part – IV : Common Yoga	2	---	2
Total	(7T + 2P Courses)	22	8	25

FOURTH SEMESTER

Sub - Code	Subject Title	Lecture Hours	LAB Hours	Credits
SMCS41	Part III : Core: Theory Visual Basic	4	---	4
SMCS42	Core: Information Security	4	---	4
SMCS43	Core: Relational Database Management System	5	---	4
SMCSP4	Major Practical - IV Visual Basic	---	4	2
SACS41	Allied 4: Theory E-commerce	3	---	3
SACSP2	Allied Practical - IV Python	---	4	2
SSCS4A	Part III : Skill Based I Core Android Programming	4	---	4
SNCS4A	Non Major Elective II - HTML	2	---	2
SCDE4A	Part – IV : Skilled Based Common Computers for Digital Era	2	---	2
	Part V : Extension Activity	---	---	1
Total	(7T + 2P Courses)	22	8	26

FIFTH SEMESTER

Sub - Code	Subject Title	Lecture Hours	LAB Hours	Credits
SMCS51	Part III Core : Theory Software Engineering and Testing	4	---	4
SMCS52	Core : Theory Data Communication and Computer Network	4	---	4
SMCS53	Core : Theory Dot Net Technologies	4	---	4
SMCSP5	Major Practical – V Dot Net	---	4	2
SMCSP6	Major Practical – VI Data Structures	---	4	2
SMCS5P	Mini Project		4	3
SECS5C	Core 14 : Theory – Elective II Cloud Computing	4	---	4
SCSB5A	Part IV : Common Personality Development	2	---	2
Total	(5T+1P Courses)	18	12	25

SIXTH SEMESTER

Sub - Code	Subject Title	Lecture Hours	LAB Hours	Credits
SMCS61	Core : Theory Operating Systems	5	1	4
SMCS63	Core : Theory Computer Graphics and Visualization	4	---	4
SMCS64	Core : Theory Data Warehousing and Data Mining	4	---	4
SMCSP7	Major : Practical - VII Computer Graphics	---	4	2
SMCSP8	Major : Practical - VIII Oracle Lab	---	4	2
SMCS6P	Major Project		4	2
SECS6A	Major Elective - III Internet of Things	4	---	4
Total	(5T+1P Courses)	17	13	22

Programme Outcome

Upon completion of the programme, our students are expected to:

Programme Outcomes	
PO1	Have attained theoretical and practical knowledge that underpins the various areas of computer science.
PO2	Have acquired basic computing skills and a selected set of skills that is currently in demand in IT field at the local and global levels.
PO3	Have obtained varied knowledge on socially important aspects from inter-disciplinary courses.
PO4	Manage the hardware and software components in a computer system independently.
PO5	Secure the prospective career on venture into a commercially viable software industry.
PO6	Be endowned with exemplary character ethics to lead emotional, social, intellectual, physical healthy life.
PO7	Have a good command of the English language for professional communication.
PO8	Be aware of professional, ethical and social issues in the IT field.
PO9	Have impived essence of social service leading to the overall progress of the nation.

Programme Specific Outcome

After crowning with a Bachelor of Science degree in Computer Science, the students would be able to:	
PSO1	Use her knowledge in skills in a given area of career effectively and also exhibit her aptitude overcoming challenges successfully.
PSO2	Shine as a software programmer, coding, testing, scripting and thrive in the software industry.
PSO3	Work as a team leader and a responsible employee whose strengths come from an ability to extract and contribute to divergent teams.
PSO4	Involve in ever growing research activities and develop expertise in innovative software programs.

Course Outcome

FIRST SEMESTER

The Students are able to:

SMCS11	**Part III Core :** Programming in C	**CO1** Obtain knowledge about the structure of the programming language C and to develop the program writing and logical thinking skill **CO2** Develop basic understanding of computers, the concept of algorithm and algorithmic thinking **CO3** Develop the ability to analyse a problem, develops an algorithm to solve it **CO4** Develop the use of the C programming language to implement various algorithms, and develops the basic concepts and terminology of programming in general **CO5** Introduce the more advanced features of the C Language
SMCSP1	**Core 1 : Practical** Programming in C Lab	**CO1** Develop skills in implementing algorithms through the programming Language C and to explore the features of C by applying sample problems **CO2** Acquire logical thinking, Implement the algorithms and analyse their complexity, Identify the correct and efficient ways of solving problems **CO3** Implement real time applications using the power of C language features
SACS11	**Allied 1 : Theory** Discrete Mathematics	**CO1** Apply basic concepts for clear understanding of mathematical principles and to solve practical problems. **CO2** Construct simple mathematical proofs and possess the ability to verify them. **CO3** Skilfully expresses mathematical properties formally via the formal language of propositional logic and predicate logic. **CO4** Specify and manipulate basic mathematical objects such as functions and relations and is able to verify simple mathematical properties that these objects possess.
SACSP1	**Allied 1 : Practical** Computer Basics Lab	**CO1** Develop skills in office automation by applying sample problems **CO2** Create, edit, spread-sheet and present documents using the relevant application software **CO3** Create, edit, format using documents **CO4** Analyse the data using spread sheet **CO5** Create databases, analyse reports, create queries
SEVS11	**Part IV:** Environmental Studies	**CO1** Understand concepts and methods from ecological and physical sciences and their application in environmental problem solving **CO2** Appreciate the ethical, cross-cultural and historical context of environmental issues and the links between human and natural systems **CO3** Understand the transnational character of environmental problems and ways of addressing those including interactions across local to global scales

SECOND SEMESTER

The Students are able to:

SMCS21	**Part III Core :** Object Oriented Programming in C++	**CO1** Gain the basic knowledge of object oriented programming concepts and to understand the detail idea of C++ streams, Inheritance, Overloading of operators, functions, constructors, File Handling and templates concepts of C++ programming. **CO2** Identify importance of object oriented programming and difference between structured oriented and object oriented programming features. **CO3** Able to make use of objects and classes for developing programs. **CO4** Able to use various object oriented concepts to solve different problems.
SMCSP2	**Core 2 : Practical** Programming in C++ Lab	**CO1** Gain knowledge about the object oriented programming concepts and C++ streams, Inheritance, Overloading of operators, functions, constructors, File Handling and templates concepts of C++ programming by implementing sample programs. **CO2** Creating simple programs using classes and objects in C++ **CO3** Implement Object Oriented Programming Concepts in C++ **CO4** Develop applications using stream I/O and file I/O
SACS21	**Allied 2 : Theory** Digital Design	**CO1** Understand the concept of digital systems, to operate on various number systems and simplify Boolean functions and to distinguish logical and combinational circuits. **CO2** Have a thorough understanding of the fundamental concepts and techniques used in digital electronics. **CO3** To understand and examine the structure of various number systems and its application in digital design. **CO4** The ability to understand, analyse and design various combinational and sequential circuits.
SACSP2	**Allied 2 : Practical** Linux Lab	**CO1** Understand and make effective use of Linux utilities and Shell scripting language to solve problems. **CO2** Able to understand the basic commands of Linux operating system and can write shell scripts. **CO3** Able to create file systems and directories and operate them.
SVBE21	**Part IV:** Value Based Education	**CO1** Enable the students to understand the social realities and to inculcate an essential value system towards building a healthy society. **CO2** Understand the importance of value based living. **CO3** Gain deeper understanding about the purpose of their life. **CO4** Understand and start applying the essential steps to become good leaders **CO5** Emerge as responsible citizens with clear conviction to practise values and ethics in life **CO6** Become a value based professional.

Semester – III

The Students are able to:

SMCS31	**Part III Core :** Java Programming	**CO1** Understand the basic programming constructs of Java Language and to explore the features of Java by applying to solve problems. **CO2** Read and understand Java-based software code of medium-to-high complexity. **CO3** Use standard and third party Java's API's when writing applications. **CO4** Understand the basic principles of creating Java applications with graphical user interface (GUI).
SMCSP3	**Core 3 : Practical** Java Programming Lab	**CO1** Develop skills in implementing algorithms through the programming Language JAVA and to explore the features of JAVA by applying sample problems. **CO2** Implement front end and back end of an application. **CO3** Implement classical problems using java programming
SMCS32	**Part III Core :** Computer Architecture	**CO1** Gain knowledge about the architecture of computer and to understand the concepts of CPU, ALU Design, I/O Instruction format and different processors. **CO2** Design basic and intermediate RISC pipelines, including the instruction set, data paths, and ways of dealing with pipeline hazards.
SMCS33	**Part III Core :** Data Structures	**CO1** To understand the concepts of basic data structures such as stack, Queues and Linked list. **CO2** To have general understanding of the network structures through trees and graph. **CO3** To make the students to understand the basic algorithms for sorting.
SACS31	**Allied 3 : Theory** Web Technology	**CO1** Impart knowledge about the web technologies and their applications and to understand the basics of web designing. **CO2** History and development of the World Wide Web and associated technologies. **CO3** Formats and languages used in modern web-pages: HTML, XHTML, CSS, XML, XSLT, JavaScript. **CO4** Good design, universal design, multi-platform web applications.
SACSP3	**Allied 3 : Practical** Web Design using HTML Lab	**CO1** Highlight the basic concepts of HTML and help the student to equip with the programming skills in implementing and developing web based applications. **CO2** Able to use the HTML programming language. **CO3** Able to use the design programs.
SSCS3A	**Skilled Based Core - I** Programming with PHP & MySQL	**CO1** Write PHP scripts to handle HTML forms. **CO2** Write regular expressions including modifiers, operators, and meta characters. **CO3** Create PHP programs that use various PHP library functions and that manipulate files and directories. **CO4** Analyze and solve various database tasks using the PHP language. **CO5** Analyze and solve common Web application tasks by writing PHP programs.

SNCS3B	**Non Major Elective I** NME – Basic Programming Design	**CO1** Study the basic concepts of Programming and understand the structures of programming constructs. **CO2** Study how to write algorithms and draw flowcharts. **CO3** Study about the generation of programming languages, evolution of internet and relationship between software and hardware.
SYOG3A	**Part – IV:** Yoga	**CO1** Enable the student to have good health. **CO2** Practice mental hygiene. **CO3** Possess emotional stability. **CO4** Integrate moral values. **CO5** Attain higher level of consciousness.

Semester – IV

The Students are able to:

Course Code	Course Name	Course Outcome
SMCS41	**Part III Core :** Visual Basic	**CO1** Visual Basic Programming introduces event-driven Windows programming, data types, operators, objects and properties, menus, procedures, control structures, and database file processing **CO2** Apply and synthesize knowledge of user interface design **CO3** Demonstrate understanding and application of a modern Integrated Development Environment (IDE) **CO4** Prepare various projects by helping visual programming.
SMCSP4	**Core 4 : Practical** Visual Basic	**CO1** Highlight the basic concepts of HTML and help the student to equip with the programming skills in implementing and developing web based applications **CO2** Understand the concepts of Visual Basic K2 CO2 Learn the advantages of Controls in VB. **CO3** Design and develop the event- driven applications using Visual Basic framework. **CO4** Apply the knowledge of database methods.
SMCS42	**Part III Core :** Information Security	**CO1** Information security focuses on the overview of information security, the tools and techniques used to secure information and the procedures and practices that must be followed by organizations ti ensure information security. **CO2** Knowledge of cryptography and network security **CO3** Knowledge of security management and incident response **CO4** Knowledge of privacy and data protection **CO5** Knowledge of security in software and operating systems **CO6** Knowledge of security in software and operating systems
SMCS43	**Part III Core :** Relational Database Management Systems	**CO1** Learn the fundamental data models and conceptualize and depict a database system using ER diagram **CO2** Make a study of SQL and relational database design using Oracle **CO3** Describe the fundamental elements of relational database management systems. **CO4** Design ER-models to represent simple database application scenarios. **CO5** Improve the database design by normalization.
SACS41	**Allied 3 : Theory** E-Commerce	**CO1** Impart knowledge about the web technologies and their applications and to understand the basics of web designing. **CO2** Understand the basic concepts and technologies used in the field of management information systems. **CO3** Have the knowledge of the different types of management information systems. **CO4** Understand the processes of developing and implementing information systems. **CO5** Be aware of the ethical, social, and security issues of information systems.

SACSP4	**Allied 3 : Practical** Python Lab	**CO1** Learn to program in Python and understand programming paradigms brought in by Python Expressions. **CO2** Interpret the mathematical results in physical and other forms. **CO3** Identify, formulate and solve the Linear Differential Equations. **CO4** Classify and solve the contour integration of complex functions.
SSCS4A	**Skilled Based Core - II** Android Programming	**CO1** Learn the fundamentals of Android Programming using the Android SDK. **CO2** Understand the purpose different development tools for Android. **CO3** Utilize Android Studio to create simple and complex applications. **CO4** Plan, prepare and build an original Android from concept to working program. **CO5** Publish an application to the Android Market.
SNCS4A	**Non Major Elective II** NME – HTML	**CO1** Study the basic concepts of Web design using HTML. **CO2** Learn the various tags used in HTML. **CO3** Make use of Dynamic HTML.
SCDE4A	**Part – IV:** Computers for Digital Era	**CO1** Create the awareness about the digital India among the student community. **CO2** Make the student to understand the role of computer in the day to day living. **CO3** Create the awareness about the e-learning and security issues.

Semester – V

The Students are able to:

SMCS51	**Part III Core :** Software Engineering and Testing	**CO1** Understand the concepts of analysis, design and implementation of a software product. **CO2** Have general understanding about object-oriented software engineering. **CO3** Make students to get experience and be ready for the large scale projects in IT Industry.
SMCS52	**Part III Core :** Data Communication and Computer Networks	**CO1** Understand the concepts of data communication. **CO2** Get through understanding of different topologies. **CO3** Study the function of different layers. **CO4** Get familiarized with different protocols and network components.
SMCS53	**Part III Core :** Dot Net Technologies	**CO1** Highlight the features of ASP.NET and apply it to develop various applications. **CO2** Understand the concepts of .Net framework as a whole and the technologies that constitutes the frame work. **CO3** Make the students to get experience and be ready for the large scale projects in IT industry.
SMCSP5	**Core 5 : Practical** Dot Net Lab	**CO1** Learn to program in Dot Net and to develop web pages using ASP.NET **CO2** Create user interactive web pages using ASP.Net. **CO3** Create simple data binding applications using ADO.Net connectivity. **CO4** Performing Database operations for Windows Form and web applications.
SMCSP6	**Core 6 : Practical** Data Structures Lab	**CO1** Develop skills in implementing data structure algorithms **CO2** Able to design and analyse the time and space efficiency of the data structure. **CO3** Capable to identity the appropriate data structure for given problem. **CO4** Have practical knowledge on the applications of data structures.
SMCS5P	**Mini Project** Web Programming with PHP & MySQL	**CO1** Understand the concepts of open sources. **CO2** Learn and use open source database management system MySQL. **CO3** Create dynamic web pages and websites. **CO4** Connect web pages with database.
SECS5C	**Core : Theory – Elective II** Cloud Computing	**CO1** Understand core concepts of cloud computing. **CO2** Learn the fundamental concepts about data centers to understand the tradeoffs in power, efficiency and cost. **CO3** Understand use of cloud storage in storage systems.
SCSB5A	**Part IV : Common** Personality Development	**CO1** Develop, exhibit and accurate sense of self. **CO2** Develop and nurture a deep understanding of personal Motivation. **CO3** Learn to balance confidence with humility. **CO4** Assert strengthened personal character and further an enhanced ethical sense.

Semester – VI

The Students are able to:

SMCS61	**Part III Core :** Operating Systems	**CO1** Acquire the fundamental knowledge of the operating system architecture and components and to know the various operations performed by the operating system. **CO2** Understand the basic working process of an operating system. **CO3** Understand the importance of process and scheduling. **CO4** Understand the issues in synchronization and memory management.
SMCS62	**Part III Core :** Computer Graphics and Visualization	**CO1**Develop skills and knowledge about computer graphics and Visualization and to understand 2D, 3D transformations. **CO2** Get through understanding of different topologies. **CO3** Study the function of different layers. **CO4** Get familiarized with different protocols and network components.
SMCS63	**Part III Core :** Data Warehousing and Data Mining	**CO1**Understand and implement classical models and algorithms in data warehousing and data mining **CO2** Analyze the data, identify the problems, and choose the relevant models and algorithms to apply. **CO3** Assess the strengths and weaknesses of various methods and algorithms and to analyze their behavior.
SMCSP7	**Core 7 : Practical**Computer Graphics and Multimedia Lab	**CO1**Acquire skills in programming computer graphics. **CO2** Acquire skills in multimedia concepts.
SMCSP8	**Core 8 : Practical** Oracle Lab	**CO1** Acquire skills in SQL statements with various constructs. **CO2** Acquire skills in PL/SQL Programming.
SMCS6P	**Major Project**	**CO1** Encourage group discussion. **CO2** Problem Identification. **CO3** Developing a model for solving a problem. **CO4** Data Flow Diagram / Structure Chart / E-R Diagram. **CO5** Consolidated Report Preparation.
SECS6A	**Core : Theory – Elective III** Internet of Things	**CO1** Learn how the Internet of Things (IOT) has the potential to alleviate some of the world's most significant problems **CO2** Learn IOT technology and architecture.

P.S. 3/7/17

HOD Signature

Head of the Department of
Computer Science
Annai Hajira Women's College,
Melapalayam.

Principal Signature

02/07/17

PRINCIPAL
ANNAI HAJIRA WOMEN'S COLLEGE
MELAPALAYAM - 627 005