COURSE OUTCOMES

BSC – COMPUTER SCIENCE

F. Y. B.Sc.	
SEM-I	
PAPER 1	**Computer Organization Design Course Code: USCS101**
CO1	To learn about how computer system works , to understand the structure, function and characteristics and underlying principles of computer system
CO2	To understand the design of the various functional units and components of computers , the basics of digital electronics needed for computers
PAPER 2	**Programming with Python- I Course Code: USCS102**
CO1	It is designed to provide Basic knowledge of Python. Python programming is intended for software engineers, system analysts, program managers and user support personnel who wish to learn the Python programming language. Learning Outcomes: Problem solving and programming capability
CO2	Master the fundamentals of writing **Python** scripts, Learn **core Python** scripting elements such as variables and flow control structures. Discover how to work with lists and sequence data. Write **Python** functions to facilitate code reuse. Use **Python** to read and write files
PAPER 3	**Free Open Source Software Course Code: USCS103**
CO1	To expose students to free open source software environment and introduce them to use open source packages. Upon completion of this course, students should have a good working knowledge of Open Source ecosystem, its uses, impact and importance. Students will learn some important FOSS tools and techniques for contributing to projects and how to set up their own FOSS projects.
CO2	It help to learn Open Source methodologies, case studies with real life examples since it is powerful and robust. Implement various applications using build systems . Understand the installation of various packages in open source operating systems. Create simple GUI applications. Understand various version control systems. Understand the kernel configuration and virtual environment
PAPER 4	**Database Systems Course Code: USCS104**
CO1	Effectively explains the basic concepts of databases and data models. Explains the features of database management systems, architecture of database systems, and the role of database users. Defines the basics of the relational data model.
CO2	Understand database concepts and structures and query language Understand the E R model and relational model To design and build a simple database system and demonstrate competence with the fundamental tasks involved with modeling, designing, and implementing a DBMS. Understand Functional Dependency and Functional Decomposition. Apply various Normalization techniques Perform PL/SQL programming

PAPER 5	**Discrete Mathematics** **Course code: USCS105**
CO1	To provide overview of theory of discrete objects, starting with relations and partially ordered sets. Perform logical proofs. Apply recursive functions and solve recurrence relation
CO2	Study about recurrence relations, generating function and operations on them. Determine equivalent logic expressions. Describe useful standard library functions, create functions, and declare parameters.
PAPER 6	**Descriptive Statistics Probability** **Course code: USCS106**
CO1	Enable learners to know descriptive statistical concepts. How to calculate and apply measures of location and measures of dispersion -- grouped and ungrouped data cases. How to apply discrete and continuous probability distributions to various business problems
CO2	Calculate probabilities, and derive the marginal and conditional distributions of bivariate random variables. Analyze Statistical data using MS-Excel.
PAPER 7	**Soft Skills Development** **Course code USCS107**
COL1	To know about various aspects of soft skills and learn ways to develop personality
COL2	Understand the importance and type of communication in personal and professional environment.
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	SEM-II
PAPER 1	**Programming with C** **Course Code: USCS201**
CO1	Students should be able to write, compile and debug programs in C language.
CO2	Students should be able to use different data types and object oriented functions in a computer program.
PAPER 2	**Programming with Python– II** **Course Code: USCS202**
CO1	Students should be able to understand how to read/write to files using python libraries.
CO2	Students should be able to catch their own errors that happen during execution of programs and can work on any industrial system to manage database.
PAPER 3	**Linux** **Course Code: USCS203**
CO1	Upon completion of this course, students should have a good working knowledge of Linux operating system, from both a graphical and command line perspective, allowing them to easily use any Linux distribution.
CO2	This course shall help student to learn advanced subjects like Linux Administrative in computer science practically.
PAPER 4	**Data Structures** **Course Code: USCS204**
CO1	Learn about Data structures, its types and significance in computing program.
CO2	Explore about Abstract Data types and its implementation, various function practically.
PAPER 5	**Calculus** **Course code USCS205**
CO1	Understanding of Mathematical concepts like limit, continuity, derivative, integration of functions.
CO2	Ability to appreciate real world applications which uses the concepts of logical mathematics.

PAPER 6	**Statistics Testing of Hypothesis Course code USCS206**
CO1	Enable learners to know descriptive statistical concepts and probability.
CO2	Enable study of probability concept required for Computer learners and manage Data science
PAPER 7	**Green Technologies Course code USCS207**
CO1	Learn about green IT can be achieved in and by hardware, software, network communication and data center operations.
CO2	Understand the strategies, frameworks, processes and management of green IT. **Enlist different concepts of green technologies in a project**
	S. Y. B.Sc.
	SEM-III
PAPER 1	**Theory of Computation Course Code: USCS301**
CO1	Understand and explain the models of computation, including formal languages, grammars and automata, and their connections.
CO2	Learn about Automatic theory and its application in Language Designing.
PAPER 2	**Core JAVA Course Code: USCS302**
CO1	Learn Object oriented programming and concepts of using Java.
CO2	Knowledge of input, its processing ,designing graphical user interface
PAPER 3	**Operating System Course Code: USCS303**
CO1	To program a operating system, its structures and functioning
CO2	Developing and understanding of algorithms used by operating systems for various function.
PAPER 4	**Database Management Systems Course Code: USCS304**
CO1	Learn stored procedure, functions,SQL and triggers and its uses.
CO2	Learn about using PL/SQL for data management
PAPER 5	**Graph Theory Course code: USCS305**
CO1	Understand the combinatory and how combinatorial problems naturally arise in many settings of program
CO2	Understand the combinatorial features in real world situations and Computer Science applications.
APER 6	**IoT Programming Course code: USCS306**
CO1	Enable learners to understand System On Chip Architectures.
CO2	Introduction and preparing Raspberry Pi with hardware and installation.
PAPER 7	**Web Programming Course code: USCS307**
CO1	To design valid, well-formed, scalable, and meaningful pages using emerging technologies.
CO2	Understand the various platforms, devices, display resolutions, viewports, and browsers that render websites
	SEM-IV
PAPER 1	**Fundamentals of Algorithms Course Code: USCS401**
CO1	Understand the concepts of algorithms for designing system program
CO2	Implement algorithms using Python concepts
PAPER 2	**Advanced JAVA Course Code: USCS402**
CO1	Understand the concepts related to Java Technology
CO2	Explore and understand use of Java Server Programming, servlets and applets.
PAPER 3	**Computer Networks Course Code: USCS403**
CO1	Learner will be able to understand the concepts of networking, which are

	important for them to be known as a 'networking professionals'.
CO2	Useful to proceed with industrial requirements and International vendor certifications.
PAPER 4	**Software Engineering** **Course Code: USCS404**
CO1	The Nature of Software, Software Engineering, The Software Process, Generic Process Model
CO2	Types of testing, different models to develop software using different designing model.
PAPER 5	**Linear Algebra using Python** **Course code USCS405**
CO1	Appreciate the relevance of linear algebra in the field of computer science.
CO2	Understand the concepts through program implementation
PAPER 6	**.NET Technologies** **Course code USCS406**
CO1	Understand the .NET framework
CO2	Develop a proficiency in the C# programming language
PAPER 7	**Android Developer** **Course code USCS407**
CO1	Understand the requirements of Mobile programming environment.
CO2	Learn about basic methods, tools and techniques for developing Apps
T. Y. B.Sc.	
SEM-V	
PAPER 1	**Artificial Intelligence** **Course Code: USCS501**
CO1	After completion of this course, learner get a clear understanding of AI and different search algorithms used for solving problems.
CO2	The learner should also get acquainted with different learning algorithms and models used in machine learning.
PAPER 2	**Linux Server Administration** **Course Code: USCS502**
CO1	Demonstrate proficiency with the Linux command line interface, directory & file management techniques, file system organization, and tools commonly found on most Linux distributions.
CO2	Effectively operate a Linux system inside of a network environment to integrate with existing service solutions.
PAPER 3	**Software Testing and Quality** **Course Code: USCS503**
CO1	To provide learner with knowledge in Software Testing techniques
CO2	To understand how testing methods can be used as an effective tools in providing quality assurance concerning for software.
PAPER 4	**Information and Network Security Course Code: USCS504**
CO1	Understand the principles and practices of cryptographic techniques. Understand a variety of generic security threats and vulnerabilities, and identify & analyze particular security problems for a given application.
CO2	Understand various protocols for network security to protect against the threats in a network
PAPER 5	**Architecting of IoT** **Course code: USCS505**
CO1	Learners are able to design & develop IoT Devices.
CO2	They should also be aware of the evolving world of M2M Communications and IoT analytics.
PAPER 6	**Web Services** **Course code: USCS506**
CO1	Emphasis on SOAP based web services and associated standards such as WSDL
CO2	Design SOAP based / RESTful / WCF services Deal with Security and QoS

	issues of Web Services
PAPER 7	**Game Programming** **Course code: USCS5507**
CO1	Learner should study Graphics and gamming concepts with present working style of developers where everything remains on internet and they need to review it
CO2	Understand and learn to develop Andriod applications.
T. Y. B.Sc.	
SEM-VI	
PAPER 1	**Wireless Sensor Networks and Mobile Communicatio**n **Course Code: USCS601**
CO1	Understand the concepts of algorithms for designing mobile programming, networking program
CO2	Implement algorithms using Python libraries for networking
PAPER 2	**Cloud Computing** **Course Code: USCS602**
CO1	Understand the concepts related to Java Technology to create cloud computing concepts
CO2	Explore and understand use of Java Server Programming and learn to develop cloud server.
PAPER 3	**Cyber Forensics** **Course Code: USCS603**
CO1	Learner will be able to understand the concepts of networking, which are important for them to be known as a 'networking professionals' which will be used for security.
CO2	Understand to Analysis data to identify evidence, Technical Aspects & Legal Aspects related to cyber crime.
PAPER 4	**Information Retrieval** **Course Code: USCS604**
CO1	Understand common text compression algorithms and their role in the efficient building and storage of inverted indices
CO2	Become familiar with difference between Information retrieval and data Base Management Systems. Students will be able to learn different indexing techniques to apply data Base systems. students will be able to understand various searching techniques to retrieve data from databases and ware houses.
PAPER 5	**Digital Image Processing** **Course code USCS605**
CO1	Understand the need for image transforms different types of image transforms and their properties, develop any image processing application.
CO2	understand the need for image compression and to learn the spatial and frequency domain techniques of image compression.
PAPER 6	**Data Science** **Course code USCS606**
CO1	Students will **develop relevant programming abilities**. Students will demonstrate proficiency with statistical analysis of data. Students will develop the ability to build and assess data-based models.
CO2	Students will execute statistical analyses with professional statistical software.
PAPER 7	**Ethical Hacking** **Course code USCS607**
CO1	Understand Identify footprinting techniques and tools. Recognize the characteristics of the enumeration phase of an attack and effective countermeasures. .
CO2	Learn to Determine the techniques and tools used in system **hacking**. Describe the characteristics of trojans, worms, and malware.