COURSE OUTCOMES: BSC (COMPUTER SCIENCE)

F. Y. B.Sc.		
SEM-I		
PAPER 1	**Course Title: Computer Organization Design**	**Course Code: USCS101**
CO1	To learn about how computer systems, work and underlying principles	
CO2	To understand the basics of digital electronics needed for computers	
PAPER 2	**Course Title: Programming with Python- I**	**Course Code: USCS102**
CO1	Students should be able to understand the concepts of programming before actually starting to write programs.	
CO2	Students should be able to develop logic for Problem Solving.	
PAPER 3	**Course Title: Free Open Source Software**	**Course Code: USCS103**
CO1	Upon completion of this course, students should have a good working knowledge of Open Source ecosystem, its use, impact and importance.	
CO2	This course shall help student to learn Open Source methodologies, case studies with real life examples	
PAPER 4	**Course Title: Database Systems**	**Course Code: USCS104**
CO1	Students should be able to evaluate business information problem and find the requirements of a problem in terms of data.	
CO2	Students should be able to design the database schema with the use of appropriate data types for storage of data in database.	
PAPER 5	**Course Title: Discrete Mathematics**	**Course code: USCS105**
CO1	To provide overview of theory of discrete objects, starting with relations and partially ordered sets.	
CO2	Study about recurrence relations, generating function and operations on them.	
PAPER 6	**Course Title:** Descriptive Statistics Probability	**Course code: USCS106**
CO1	Enable learners to know descriptive statistical concepts	
CO2	Enable study of probability concept required for Computer learners	
PAPER 7	**Course Title:** 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.	
PRACTICAL: USCSP101	**Course Title:** USCS101 + USCS102	**Course Code:** USCSP101
CO1	To perform logic gates we need UML Tool	
CO2	Python we need Python Compiler	
PRACTICAL: USCSP102	**Course Title:** USCS103+USCS104	**Course Code:** USCSP102
CO1	Student should Install SQL server	
CO2	Install RED HAT for Open Source	
PRACTICAL: USCSP103	**Course Title:** USCS105+USCS106	**Course Code:** USCSP103
CO1	. Concept of searching, inserting and deleting	

CO2	Implement using R tools	
F. Y. B.Sc.		
SEM-II		
PAPER 1	**Course Title:** 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 in a computer program.	
PAPER 2	**Course Title:** Programming with Python– II	**Course Code: USCS202**
CO1	Students should be able to understand how to read/write to files using python.	
CO2	Students should be able to catch their own errors that happen during execution of programs.	
PAPER 3	**Course Title:** Linux	**Course Code: USCS203**
CO1	Upon completion of this course, students should have a good working knowledge of Linux, 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 in computer science practically.	
PAPER 4	**Course Title:** Data Structures	**Course Code: USCS204**
CO1	Learn about Data structures, its types and significance in computing	
CO2	Explore about Abstract Data types and its implementation	
PAPER 5	**Course Title:** 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 these concepts	
PAPER 6	**Course Title: Statistics Testing of Hypothesis**	**Course code USCS206**
CO1	Enable learners to know descriptive statistical concepts	
CO2	Enable study of probability concept required for Computer learners.	
PAPER 7	**Course Title:** 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	
PRACTICAL: Course Title: Course Title: USCS201 + USCS202		**Course Code: USCSP201**
CO1	Student should install Turbo C	
CO2	understand the basic data types and I/O.	
CO3	show draw shapes & GUI controls. Program to create server-client and exchange basis	
CO4	send email & read contents of URL.	
PRACTICAL: Course Title: Course Title: USCS203 + USCS204		**Course Code: USCSP202**
CO1	Install your choice of Linux distribution e.g. Ubuntu, Fedora, Debian.	

CO2	Try different installation media like CD/DVD, USB Drive to install.	
CO3	t Linear Search to find an item in a list	
CO4	binary search to find an item in an ordered list	
PRACTICAL: Course Title: Course Title: USCS205 + USCS206		**Course Code: USCSP203**
CO1	Derivative of functions	
CO2	Calculation of Partial derivatives of functions	
CO3	Plotting pdf, cdf, pmf, for discrete and continuous distribution	
CO4	t test, normal test, F test	
S. Y. B.Sc.		
SEM-III		
PAPER 1	**Course Title: Theory of Computation**	**Course Code: USCS301**
CO1	Understand Grammar and Languages	
CO2	Learn about Automata theory and its application in Language Design	
PAPER 2	**Course Title: Core JAVA**	**Course Code: USCS302**
CO1	Object oriented programming concepts using Java.	
CO2	Knowledge of input, its processing and getting suitable output.	
PAPER 3	**Course Title: Operating System**	**Course Code: USCS303**
CO1	To provide a understanding of operating system, its structures and functioning	
CO2	Develop and master understanding of algorithms used by operating systems for various purposes.	
PAPER 4	**Course Title: Database Management Systems**	**Course Code: USCS304**
CO1	Master concepts of stored procedure and triggers and its use.	
CO2	Learn about using PL/SQL for data management	
PAPER 5	**Course Title: Graph Theory**	**Course code: USCS305**
CO1	Appreciate beauty of combinatorics and how combinatorial problems naturally arise in many settings	
CO2	Understand the combinatorial features in real world situations and Computer Science applications.	
APER 6	**Course Title: 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	**Course Title: Web Programming**	**Course code: USCS307**
COL1	To design valid, well-formed, scalable, and meaningful pages using emerging technologies.	
COL2	Understand the various platforms, devices, display resolutions, viewports, and browsers that render websites	
PRACTICAL:	**Course Title: USCS302+USCS303+USCS304**	**Course Code: USCSP301**
CO1	To perform java program install jdk tool	
CO2	Student will do practical on GUI based application	
CO3	producer–consumer problem using shared memory.	
CO4	DO Practical on RMI Invocation	

CO5	Student should Install SQL server AND Perform PLSQL	
PRACTICAL: Course Title: USCS305+USCS306+USCS307		**Course Code: USCSP302**
CO1	Solving problems using Kruskal's Algorithm	
CO2	Light the LED with Python	
CO3	Design a webpage that makes use of different tags	
CO4	Student learn PHP in web Programming	
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SEM-IV		
PAPER 1 : Course Title: Fundamentals of Algorithms		**Course Code: USCS401**
CO1	Understand the concepts of algorithms for designing good program	
CO2	Implement algorithms using Python	
PAPER 2 Course Title: Advanced JAVA		**Course Code: USCS402**
CO1	Understand the concepts related to Java Technology	
CO2	Explore and understand use of Java Server Programming and applets.	
PAPER 3 U Course Title: 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 Course Title: Software Engineering		**Course Code: USCS404**
CO1	The Nature of Software, Software Engineering, The Software Process, Generic Process Model	
CO2	Types of testing.	
PAPER 5 Course Title: 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 Course Title: .NET Technologies		**Course code USCS406**
CO1	Understand the .NET framework	
CO2	Develop a proficiency in the C# programming language	
PAPER 7 Course Title : Android Developer		**Course code USCS407**
CO1	Understand the requirements of Mobile programming environment.	
CO2	Learn about basic methods, tools and techniques for developing Apps	
PRACTICAL: Course Title: USCS401+ USCS402+ USCS403		**Course Code: USCSP401**
CO1	Student Perfom Sorting Algorithm using Python	
CO2	Install netbeans for Advance java	
CO3	Student have basic knowledge of HTML	
CO4	Student Install CISCO Packet for Computer Network	
CO5	Install wireshark tool for Packet Analysis	
PRACTICAL: Course Title: USCS405+ USCS406+ USCS407		**Course Code: USCSP402**
CO1	Python tool install for Linear algebra	

CO2	Student Install Microsoft tool for .NET	
CO3	Install Android Studio for Android Programming	
T. Y. B.Sc.		
SEM-V		
PAPER 1	**Course Title: Artificial Intelligence**	**Course Code: USCS501**
CO1	After completion of this course, learner should 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	**Course Title:** 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	**Course Title: 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	**Course Title: 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	**Course Title: 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	**Course Title: 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	**Course Title: Game Programming**	**Course code: USCS5507**
COL1	Learner should study Graphics and gamming concepts with present working style of developers where everything remains on internet and they need to review it	
COL2	understand it, be a part of community and learn.	
PRACTICAL:	**Course Title: Practical of Elective-I**	**Course Code: USCSP501**
CO1	To perform AI program install PYTHON IDE	
CO2	Selenium tool install for testing	
PRACTICAL:	**Course Title** : **Practical of Elective-II**	**Course Code: USCSP502**
CO4	Student Install Netbeans for Webservices	

CO5	To perform IOT IC required for Student	
PRACTICAL: Course Title: Practical of Skill Enhancement Course Code: USCSP503		
CO1	Setup DirectX 11, Window Framework and Initialize Direct3D Device	
CO2	Buffers, Shaders and HLSL (Draw a triangle using Direct3D 11)	
T. Y. B.Sc.		
SEM-VI		
PAPER 1 Course Title: Wireless Sensor Networks and Mobile Communication Course Code: USCS601		
CO1	Understand the concepts of algorithms for designing good program	
CO2	Implement algorithms using Python	
PAPER 2 Course Title: Cloud Computing Course Code: USCS602		
CO1	Understand the concepts related to Java Technology	
CO2	Explore and understand use of Java Server Programming and applets.	
PAPER 3 Course Title: 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'.	
CO2	Useful to proceed with industrial requirements and International vendor certifications.	
PAPER 4 Course Title: Information Retrieval Course Code: USCS604		
CO1	The Nature of Software, Software Engineering, The Software Process, Generic Process Model	
CO2	Types of testing.	
PAPER 5 Course Title: Digital Image Processing Course code USCS605		
CO1	Appreciate the relevance of linear algebra in the field of computer science.	
CO2	Understand the concepts through program implementation	
PAPER 6 Course Title: Data Science Course code USCS606		
CO1	Understand the .NET framework	
CO2	Develop a proficiency in the C# programming language	
PAPER 7 Course Title: Ethical Hacking Course code USCS607		
CO1	Understand the requirements of Mobile programming environment.	
CO2	Learn about basic methods, tools and techniques for developing Apps	
PRACTICAL: Course Title: Practical of Elective-I Course Code: USCSP601		
CO1	software tools like INET Framework for OMNeT++, NetSim , TOSSIM, Cisco packet tracer 6.0 and higher version.	
CO2	Forensic Image using FTK Imager/Encase Imager :	
PRACTICAL: Course Title: Practical of Elective-II Course Code: USCSP602		
CO1	Practical need to be performed using Scilab under Linux or Windows	
CO2	Practical of Data collection, Data curation and management for Unstructured data	
CO3	Practical shall be performed using R	
PRACTICAL: Course Title: Skill Enhancement Course Code: USCSP604		

CO1	CrypTool to encrypt and decrypt passwords using RC4 algorithm	
CO2	Use Cain and Abel for cracking Windows account password	
CO3	Perform ARP Poisoning in Windows	