Integral University, Lucknow

Effective from Session: 2017-18							
Course Code	DCS-401	**Title of the Course**	Object Oriented Programming with C++	**L**	**T**	**P**	**C**
Year	2nd	**Semester**	4th	**3**	**1**	**0**	
Pre-Requisite		**Co-requisite**					
Course Objectives	1.To make students familiar with program language and its related terminologies 2.Study of different types of programming module along with their functionality 3.To Understand the basic Concept of Programming Language						

Course Outcomes	
CO1	Use various programming constructs of object-oriented language
CO2	Apply principles of object-oriented programming to model/design real world problems.
CO3	Use exception handling mechanism to develop fault tolerant applications.
CO4	Analyze the concepts of multi-threaded programming and synchronization.
CO5	Use GUI controls and event handling mechanism to develop interactive window/desktop applications.

Unit No.	Title of the Unit		Contact Hrs.	Mapped CO
1	Introduction and Features	Fundamentals of object-oriented programming – procedure oriented programming Vs. object-oriented programming (OOP). Object oriented programming concepts –Classes, reusability, encapsulation, inheritance, polymorphism, Abstraction.	8	CO1
2	Language Constructs	Review of constructs of C used in C++: variables, types and type declarations, user defined data types; increment and decrement operators, relational and logical operators; if then else clause, conditional expressions, input and output statement, loops, switch case.	8	CO2
3	Classes and Objects in C++	**Classes and Objects: -** Class creation, Object accessing class members, Private Vs Public, Constructor and Destructor Objects. **Member Functions: -** Method definition, Inline functions implementation, Constant member functions, Friend Functions, Overloading, operator overloading, function overloading, constructor overloading.	8	CO3
4	Inheritance	Definition of inheritance, Types of inheritance, protected data, private data, public data, inheriting constructors and destructors, constructors and destructors of derived classes, virtual functions.	8	CO4
5	Polymorphism and Virtual Functions in C++	Polymorphism and Virtual Functions: - Polymorphism, Types of Polymorphism, Virtual functions, pure virtual functions, different operation on the file, creation of file streams, stream classes, header files, updating a file, opening and closing a file.	8	CO5

References Books:

1- Singh Gurupkar, Object Oriented Programming using C ++.

2- John R. Hubbard, Schaum's Outline of Programming with C++.

e-Learning Source:

1- https://www.geeksforgeeks.org/object-oriented-programming-in-cpp/

2- https://www.edx.org/learn/object-oriented-programming

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	2	1	-	-	-	-	-	-	-	-
CO2	-	2	-	1	1	-	-	-	1	-	-
CO3	-	2	-	3	-	-	-	-	1	1	-
CO4	-	2	2	-	-	-	-	-	1	-	-
CO5	-	2	-	3	-	-	-	-	-	-	-

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2017-18							
Course Code	DCS-402	**Title of the Course**	Wireless And Mobile Network	**L**	**T**	**P**	**C**
Year	2nd	**Semester**	4th	**3**	**1**	**0**	
Pre-Requisite		**Co-requisite**					
Course Objectives	1.Learn the fundamental concepts and challenges of wireless communication systems. 2.Understand the architecture and working of wireless networks such as cellular networks, WLAN, and ad hoc networks. 3 Study the evolution of mobile communication technologies, including 2G, 3G, 4G, LTE, and 5G.						

Course Outcomes	
CO1	Students become familiar with Wireless and mobile network and their terminologies.
CO2	Knowledge of evolution of mobile network through various generations.
CO3	Become familiar with the cellular concepts and various handoff techniques.
CO4	Develop understanding of Mobile IP and the concept of data packet delivery in Mobile IP.
CO5	Introduced with different types of random-access protocols and controlled access protocols and other wireless technologies.

Unit No.	Title of the Unit		Contact Hrs.	Mapped CO
1	Introduction to Wireless and Mobile Networks	Introduction, Difference between wireless and mobile. Brief introduction Generation of mobile (1G/2G/3G/4G), familiar to basic terms like Base station, handoff, MSC, Co-channel Interference, Forward Channel and Reverse channel, Half and full duplex system, handover.	8	CO1
2	Cellular Mobility	Cellular concepts, Frequency reuse, channel assignment strategies, Handoff strategies (soft and hard handover), Co-channel interference and system capacity, channel planning, Adjacent channel interference, Improving coverage and capacity in cellular systems (Cell Splitting, Sectoring, Microcell Concept).	8	CO2
3	Mobility IP	MOBILE IP-Goal, Requirement, Entities and Terminology, IP packet delivery, agent Discovery, Registration, Optimization, Tunneling and Reverse Tunneling.	8	CO3
4	Access Technology	Aloha, carrier Sense Multiple Access (CSMA/CD), Carrier Sense Multiple Access with collision Avoidance (CSMA/CA), Reservation, polling, token pass, Introduction to Wi-Fi, WI-Max, Bluetooth, ATM, NFC, Paging, GSM and CMDA (basic only).	8	CO4
5	Cryptography and Security	Introduction to Cryptography. Security Attacks. Security Mechanism, Introduction to DES and AES (basic only). concept of public key and private key. Overview of IP security, digital signature, introduction to virus, worm, logic bomb, rootkit Flooders, Trojan horse, backdoor, spammer program	8	CO5

References Books:

1- Wireless Communication Principles and Practices: Theodore S. Rappaport Pearson Publication.

2- Mobile Communications: JOCHEN SCHILLER, Pearson Education

e-Learning Source:

1- https://www.geeksforgeeks.org/wireless-mobile-computing-technologies/

2- https://www.w3schools.in/cyber-security/wireless-security

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	2	1	-	-	-	-	-	-	-	-
CO2	-	2	-	1	1	-	-	-	1	-	-
CO3	-	2	-	3	-	-	-	-	1	1	-
CO4	-	2	2	-	-	-	-	-	1	-	-
CO5	-	2	-	3	-	-	-	-	-	-	-

1-l ow Correlation; 2- Moderate Correlation; 3- Sul

Name & Sign of Program Coordinator	Sign & Seal of HoD

Integral University, Lucknow

Effective from Session: 2017-18							
Course Code	DCS-403	**Title of the Course**	Computer Architecture & Microprocessor	**L**	**T**	**P**	**C**
Year	2nd	**Semester**	4th	**3**	**1**	**0**	
Pre-Requisite		**Co-requisite**					
Course Objectives	1.To make students familiar with program language and its related terminologies 2.Study of different types of programming module along with their functionality 3.To Understand the basic Concept of Programming Language						

Course Outcomes	
CO1	Introduction to Microprocessors and Comprehending the Basic Organization of Modern Computer Systems
CO2	Analyze an instruction-set architecture, propose a suitable data path and control unit implementation.
CO3	Analyze the operation of fixed- and floating-point arithmetic units
CO4	Understand and apply the internal working flow of 8086microprocessor.
CO5	Apply assembly language programming in design of microprocessor-based system

Unit No.	Title of the Unit		Contact Hrs.	Mapped CO
1	Introduction of Computer Architecture	Introduction: Digital computer generation, computer types and classifications, CPU and ALU. Introduction to general register organization, bus, memory and Stack organization.	8	CO1
2	Memory and I/O System	Memory: Types of memory, RAM & ROM. Input / Output Devices: Introduction, I/O ports, Interrupts: Hardware & Software. Serial Communication: Synchronous & asynchronous communication, standard communication interfaces.	8	CO2
3	Microprocessor Fundamentals	Introduction to Microprocessor, Evolution of Microprocessors, Address bus, Data Bus, Control Bus, Bus Structure. The 8085 Microprocessor Unit, Architecture & Description	8	CO3
4	8085 Instruction Set	Pin Diagram of 8085, Addressing Modes of 8085, Data Transfer operations (MOV, MVI, OUT, IN), Arithmetic operations (ADD, ADI, SUB, SUI, INR, DCR), Logic Operations (ANA, ANI, ORA, ORI, XRA, XRI), Branch operation (JMP, CALL, RESTART), Writing assembly language programs.	8	C04
5	8085 Programming	Programming: -Programs: 8-bit Addition, 16-bit Addition, 8-bit Subtraction, 16-bit subtraction, Subtraction with carry, Multiplication & Division.	8	CO5

References Books:

1- Carl Hamacher, ZvonkoVranesic and SafwatZaky, “Computer Organization”, Fifth Edition, Tata McGraw Hill, 2002

2- Microprocessor Architecture Programming & Application with 8085: R.S. Gaonkar, Penram Publication

e-Learning Source:

1-https://www.spiceworks.com/tech/tech-general/articles/what-is-computer-architecture/

2-https://www.geeksforgeeks.org/introduction-of-microprocessor/

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	2	1	-	-	-	-	-	-	-	-
CO2	-	2	-	1	1	-	-	-	1	-	-
CO3	-	2	-	3	-	-	-	-	1	1	-
CO4	-	2	2	-	-	-	-	-	1	-	-
CO5	-	2	-	3	-	-	-	-	-	-	-

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	Sign & Seal of HoD

Integral University, Lucknow

Effective from Session: 2017-18							
Course Code	DCS-404	**Title of the Course**	Data Communication & Network	**L**	**T**	**P**	**C**
Year	2nd	**Semester**	4th	**3**	**1**	**0**	
Pre-Requisite		**Co-requisite**					
Course Objectives	1.To make students familiar with program language and its related terminologies 2.Study of different types of programming module along with their functionality 3.To Understand the basic Concept of Programming Language						

Course Outcomes	
CO1	To understands the terminology and concepts of OSI reference model and the TCP/IP reference model and functions of each layer.
CO2	To identify the different types of network typologies, protocols, network devices and their functions within a network
CO3	To master the concepts of protocols, networks interfaces, and design/performance issues in LAN and WAN
CO4	To understand and building the skills of sub netting and routing mechanisms, familiarity with basic protocols of computer networks and how they can be used to assist in network design and implementation
CO5	To understand the concept of network connectivity, network connecting devices and wireless networking

Unit No.	Title of the Unit		Contact Hrs.	Mapped CO
1	Introduction of Networking	Networks Basics: - What is network, Network Criteria, Peer-to –peer Network, Client-Server Network, LAN, MAN and WAN, Topologies, Transmission media.	8	CO1
2	OSI Model	OSI Model: - Standards, OSI Reference Model, OSI Physical layer concepts, OSI Data-link layer concepts, OSI Networks layer concepts, OSI Transport layer concepts, OSI Session layer concepts, OSI presentation layer concepts, OSI Application layer concepts.	8	CO2
3	TCP/IP and Network Architecture	Introduction to TCP/IP: - TCP/IP Protocols, Concept of physical and logical addressing, Different Classes of IP addressing, Subnetting and super netting, IPV4 vs. IPV6. Network Architecture: - Ethernet Specification and Standardization: 10 mbps (Traditional Ethernet), 100 mbps (Fast Ethernet) and 1000 mbps (Gigabit Ethernet), Concept of Leased Lines and Backbone Lines, Channel allocation	8	CO3
4	Network Connectivity and Devices	Network Connectivity: - Network connectivity Devices, NICs, Hubs, Repeaters, Multiplexers, Modems, Routers and Protocols, Firewall, ATM, VOIP, Remote Procedure Call, Connection Management.	8	CO4
5	Application Layer and Wireless Networking	Application Layer, File transfer, Data access management, Virtual Private Network, Virtual Terminal, internet and public network. Wireless Networking: - Basics of Wireless, Wireless LAN, Wi-Fi, WiMAX and Broadband Wireless and Bluetooth technology, Email.	8	CO5

References Books:

1- B. A. Forouzan - Data Communication and Networking (3 Ed.) -TMH

2- W. Stallings - Data and Computer Communication (5 Ed.) -Pearson Education/ PHI

e-Learning Source:

1- https://igitsarang.ac.in/assets/documents/coursematerial/4th_etc_dccn_1702714591.pdf

2- https://dpvipracollege.in/wp-content/uploads/2023/01/Data-Communications-and-Networking-By-Behrouz-A.Forouzan.pdf

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	2	1	-	-	-	-	-	-	-	-
CO2	-	2	-	1	1	-	-	-	1	-	-
CO3	-	2	-	3	-	-	-	-	1	1	-
CO4	-	2	2	-	-	-	-	-	1	-	-
CO5	-	2	-	3	-	-	-	-	-	-	-

1-Low Correlation; 2- Moderate Corre lation; 3- Substantial Correlation

Name & Sign of Program Coordinator	Sign & Seal of HoD

Integral University, Lucknow

Effective from Session: 2017-18							
Course Code	DCS-451	**Title of the Course**	Oops with C++ Lab	**L**	**T**	**P**	**C**
Year	2nd	**Semester**	4th	**0**	**0**	**2**	
Pre-Requisite		**Co-requisite**					
Course Objectives	1.To make students familiar with program language and its related terminologies 2.Study of different types of programming module along with their functionality 3.To Understand the basic Concept of Programming Language						

Course Outcomes	
CO1	Students become familiar with Operating System, its main components and its functionalities.
CO2	Students will learn the complete process involved in installation of an OS
CO3	Students are familiarized with the concept of process and various CPU scheduling algorithms. Familiarized with the concept of paging and various Page replacement algorithms
CO4	Learn the concept of disk scheduling and its various algorithms.
CO5	Develop the ability to compare between Linux, Unix and Windows OS.

Unit No.	Title of the Unit		Contact Hrs.	Mapped CO
1	EXPERIMENT 1	Write General Program in C++Write General Program in C++	2	CO1
2	EXPERIMENT 2	Write Program using if, else if, nested if and switch case in C++	2	CO2
3	EXPERIMENT 3	Write Program using Looping Statement in C++	2	CO3
4	EXPERIMENT 4	Write Program using if, else if , nested if and switch case in C++	2	CO1
5	EXPERIMENT 5	Write Program using overloading of various operators in C++	2	CO2
6	EXPERIMENT 6	Write Program using constructor and various types of constructors in C++	2	CO3
7	EXPERIMENT 7	Write Program using various forms of Inheritance in C++	2	CO4
8	EXPERIMENT 8	Write Program using virtual functions, virtual Base Class in C++	2	CO4 C
9	EXPERIMENT 9	Write Program using function overloading in C++	2	CO5
10	EXPERIMENT 10	Write Program using Friend, Inline, default arguments in C++	2	CO5

References Books:

1-Oops with C++ Lab by Walter Savitch

2-Oops with C++ Lab by Ashok N. Kamthane

e-Learning Source:

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	2	1	-	-	-	-	-	-	-	-
CO2	-	2	-	1	1	-	-	-	1	-	-
CO3	-	2	-	3	-	-	-	-	1	1	-
CO4	-	2	2	-	-	-	-	-	1	-	-
CO5	-	2	-	3	-	-	-	-	-	-	-

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	Sign & Seal of HoD

Integral University, Lucknow

Effective from Session: 2017-18							
Course Code	DCS-452	**Title of the Course**	Wireless & Mobile Network Lab	**L**	**T**	**P**	**C**
Year	2nd	**Semester**	4th	**0**	**0**	**2**	
Pre-Requisite		**Co-requisite**					
Course Objectives	1.To make students familiar with program language and its related terminologies 2.Study of different types of programming module along with their functionality 3.To Understand the basic Concept of Programming Language						

Course Outcomes	
CO1	Students become familiar with basic concepts of Wireless mobile network and wireless generations.
CO2	Students learn the importance and implementation of Ping command.
CO3	Develop the understanding to select a set of wireless technologies to suit a given application, Mobile IP and the concept of data packet delivery in
CO4	Learn the ideology, implementation and requirement behind different topologies.
CO5	Ability to plan a wireless communication system for a given environment in which it is to be deployed.

Unit No.	Title of the Unit		Contact Hrs.	Mapped CO
1	EXPERIMENT 1	Study of Addressing in TCP/IP.	2	CO1
2	EXPERIMENT 2	Study of PING Command.	2	CO1
3	EXPERIMENT 3	To study and Implement Stop and Wait protocol.	2	CO2
4	EXPERIMENT 4	To study and Implement Data Encryption and Decryption.	2	CO2
5	EXPERIMENT 5	Study of PC-to-PC communication using IEEE 802.3.	2	CO4
6	EXPERIMENT 6	Study the performance of CSMA/CD (Carrier Sense Multiple Access with Collision Detection) Protocol through simulation.	2	CO4
7	EXPERIMENT 7	Study the performance network with CSMA/CA protocol and compare with CSAMA/CD protocol.	2	CO3
8	EXPERIMENT 8	Study of Distance Vector Routing algorithm.	2	CO3
9	EXPERIMENT 9	Study of Link state routing/Dijkstra's algorithm.	2	CO5
10	EXPERIMENT 10	Study of Data Encryption and Decryption technique.	2	CO5

References Books:

1-Wireless Sensor Networks by Kazem Sohraby, Daniel Minoli, Taieb Znati

e-Learning Source:

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	2	1	-	-	-	-	-	-	-	-
CO2	-	2	-	1	1	-	-	-	1	-	-
CO3	-	2	-	3	-	-	-	-	1	1	-
CO4	-	2	2	-	-	-	-	-	1	-	-
CO5	-	2	-	3	-	-	-	-	-	-	-

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	Sign & Seal of HoD

Integral University, Lucknow

Effective from Session: 2017-18							
Course Code	DCS-453	**Title of the Course**	Computer Architecture & Microprocessor Lab	**L**	**T**	**P**	**C**
Year	2nd	**Semester**	4th	**0**	**0**	**2**	
Pre-Requisite		**Co-requisite**					
Course Objectives	1.To make students familiar with program language and its related terminologies 2.Study of different types of programming module along with their functionality 3.To Understand the basic Concept of Programming Language						

Course Outcomes	
CO1	Introduction of registers
CO2	Show the interaction between CPU, memory and I/O ports by implementing programs
CO3	Program a microprocessor using instruction set of 8086. Addition and Subtraction of two 8-bit operands.
CO4	Multiplication and Division of two 16-bit operand
CO5	Demonstrate is clear understanding of the interaction for data transfer between CPU, memory and I/O port

UnitNo.	Title of the Unit		ContactHrs.	MappedCO
1	EXPERIMENT 1	To perform addition of two 8 bit numbers using 8085.	2	CO1
2	EXPERIMENT 2	To perform subtraction of two 8 bit numbers using 8085.	2	CO1
3	EXPERIMENT 3	To perform multiplication of two 8 bit numbers using 8085.	2	CO3
4	EXPERIMENT 4	To perform logic AND operation of two 8 bit numbers.	2	CO3
5	EXPERIMENT 5	To perform logic NAND operation of two 8 bit numbers.	2	CO2
6	EXPERIMENT 6	To perform logic OR operation of two 8 bit numbers.	2	CO5
7	EXPERIMENT 7	To perform logic NOR operation of two 8 bit numbers.	2	CO3
8	EXPERIMENT 8	To perform the division of two 8 bit numbers using 8085.	2	CO4

References Books:

1- Computer Architecture and Microprocessor Lab by Ramesh S. Gaonkar

e-Learning Source:

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	2	1	-	-	-	-	-	-	-	-
CO2	-	2	-	1	1	-	-	-	1	-	-
CO3	-	2	-	3	-	-	-	-	1	1	-
CO4	-	2	2	-	-	-	-	-	1	-	-
CO5	-	2	-	3	-	-	-	-	-	-	-

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2017-18							
Course Code	DCS-454	**Title of the Course**	Data Communication & Network Lab	**L**	**T**	**P**	**C**
Year	2nd	**Semester**	4th	**0**	**0**	**2**	
Pre-Requisite		**Co-requisite**					
Course Objectives	1.To make students familiar with program language and its related terminologies 2.Study of different types of programming module along with their functionality 3.To Understand the basic Concept of Programming Language						

Course Outcomes	
CO1	Identification of various types of cables such as co-axial and twisted pair cables
CO2	Concepts of switch and hubs and estimation of a LAN. Use of protocols in establishing LAN
CO3	Implementation of troubleshooting of networks.
CO4	Installation of network device drivers and installation of networks.
CO5	Installation of proxy server and broadband wireless and blue tooth technology.

2

Unit No.	Title of the Unit		Contact Hrs.	Mapped CO
1	EXPERIMENT 1	Identification of various networks components- connections, BNC, RJ- 45, Cables: Co-axial, twisted pair, UTP- NIC (network interface card).	2	CO1
2	EXPERIMENT 2	Switch, hub	2	CO1
3	EXPERIMENT 3	Preparing of networks	2	CO3
4	EXPERIMENT 4	Establishment of a LAN	2	CO3
5	EXPERIMENT 5	Use of protocols in establishing LAN	2	CO2
6	EXPERIMENT 6	Trouble shooting of networks	2	CO5
7	EXPERIMENT 7	Installation of network device drivers	2	CO3
8	EXPERIMENT 8	Installation of networks (Peer to Peer Networking, client server interconnection)	2	CO4
9	EXPERIMENT 9	Use/installation of proxy server	2	CO5
10	EXPERIMENT 10	Broadband Wireless and Bluetooth technology, Email	2	CO5

References Books:

1- Data Communication and Networking Lab- William Stallings

e-Learning Source:

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	2	1	-	-	-	-	-	-	-	-
CO2	-	2	-	1	1	-	-	-	1	-	-
CO3	-	2	-	3	-	-	-	-	1	1	-
CO4	-	2	2	-	-	-	-	-	1	-	-
CO5	-	2	-	3	-	-	-	-	-	-	-

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	Sign & Seal of HoD

Integral University, Lucknow

Effective from Session: 2017-18							
Course Code	DCS-455	**Title of the Course**	Web Technology and Multimedia Lab	**L**	**T**	**P**	**C**
Year	2nd	**Semester**	4th	**0**	**0**	**2**	
Pre-Requisite		**Co-requisite**					
Course Objectives	1.To make students familiar with program language and its related terminologies 2.Study of different types of programming module along with their functionality 3.To Understand the basic Concept of Programming Language						

Course Outcomes	
CO1	Apply various HTML tags used to design static web pages.
CO2	To learn and understand technical aspect of Multimedia Systems.Apply CSS and JavaScript Constructs to perform Client side validation and designing of dynamic web pages
CO3	Apply various PHP construct to develop server side applications and also familiar of transporting data among applications using XML
CO4	Understand how to configure Web servers and deployment of applications. Design server side; Database and MVC based applications using Servlet, JSP and JDBC
CO5	Understand Handling of asynchronous requests using AJAX programming

Unit No.	Title of the Unit		Contact Hrs.	Mapped CO
1	EXPERIMENT 1	Understand Handling of asynchronous requests using AJAX programming	2	CO1
2	EXPERIMENT 2	Development of different Websites using different tools.	2	CO1
3	EXPERIMENT 3	Installing and use of various multimedia devices, i. Scanner,ii. Digital camera, web camera iii. Mic and speakers iv. Touch screen v. Plotter and printers vi. DVD vvii. Audio CD and Video CD	2	CO3
4	EXPERIMENT 4	Reading and writing of different format on a frame CD Reading and writing of different format on a frame CD	2	CO3
5	EXPERIMENT 5	Transporting audio and video files	2	CO2
6	EXPERIMENT 6	Using various features of Director	2	CO5
7	EXPERIMENT 7	Using various features of Flash	2	CO3
8	EXPERIMENT 8	Using various features of Photo-shop	2	CO4
9	EXPERIMENT 9	Making multimedia presentations combining Director, Flash, Photo- shop, such as department Profile, lesson presentation, games and project presentations	2	CO5

References Books:

1- Web Technology and Multimedia Lab by Elisabeth Robson, Eric Freeman

e-Learning Source:

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	2	1	-	-	-	-	-	-	-	-
CO2	-	2	-	1	1	-	-	-	1	-	-
CO3	-	2	-	3	-	-	-	-	1	1	-
CO4	-	2	2	-	-	-	-	-	1	-	-
CO5	-	2	-	3	-	-	-	-	-	-	-

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	Sign & Seal of HoD

Integral University, Lucknow

Effective from Session: 2017-18							
Course Code	DCS-405	**Title of the Course**	Web Technology & Multimedia	**L**	**T**	**P**	**C**
Year	2nd	**Semester**	4th	**3**	**1**	**0**	
Pre-Requisite		**Co-requisite**					
Course Objectives	1.To make students familiar with program language and its related terminologies 2.Study of different types of programming module along with their functionality 3.To Understand the basic Concept of Programming Language						

Course Outcomes	
CO1	WEB TECHNOLOGY: HTML:Elements of HTML, HTML sources & Rules of nesting, syntax conventions, HTML Categories, text tags, Formatting WebPages by using Styles, adding pictures, image attribute , Introduction to forms, tables and models, advantages & limitations of tables, frames, links. SS cascading style sheets, XHTML, XML, Client Side Scripting, Server Side Scripting, Managing data with SQL. DYNAMIC WEB PAGES: The need of dynamic web pages; an overview of DHTML, Cascading Style Sheet (CSS), Comparative studies of different technologies of dynamic page creation.
CO2	To learn and understand technical aspect of Multimedia Systems.Apply CSS and JavaScript Constructs to perform Client side validation and designing of dynamic web pages
CO3	Apply various PHP construct to develop server side applications and also familiar of transporting data among applications using XML
CO4	Understand how to configure Web servers and deployment of applications.
CO5	Design server side; Database and MVC based applications using Servlet, JSP and JDBC.

Unit No.	Title of the Unit		Contact Hrs.	Mapped CO
1	Introduction	Fundamentals of object-oriented programming – procedure oriented programming Vs. object-oriented programming (OOP). Object oriented programming concepts –Classes, reusability, encapsulation, inheritance, polymorphism, Abstraction.	8	CO1
2	JavaScript in web development	JSP:JSP architecture, JSP servers, JSP tags, understanding the layout in JSP, declaring variables, methods in JSP, inserting java expression in JSP, processing request from user and generating dynamic response for the user, inserting applets and java beans into JSP, using include and forward action, comparing JSP and CGI program, comparing JSP and ASP program; Creating ODBC data source name, introduction of JDBC, prepared statement and callable statement. JAVA SCRIPTS: What is a Java Scripts, adding, Java scripts to documents, embedding java scripts, linking java scripts, creating a page program with scripts?	8	CO2
3	Multimedia Sphere	Introduction to multimedia, Evolution of Multimedia, Objects of Multimedia, hypertext, hyper graphics, animation, Scope of Multimedia in Business, Multimedia H/W & S/W.	8	CO3
4	Media Technologies	Multimedia Hardware: OCR, touch-screen, scanners, digital cameras, speakers, printers, plotters, optical disks and drives as CD-ROM and DVD. Multimedia networks, text, sound (MIDI), Audio, and Video. Image and sound file formats, multimedia file formats, compression, standards and techniques, Macromedia products, Basic drawing techniques, multimedia operating systems.	8	CO4
5	Multimedia authoring tools and processes.	Multimedia Authoring Tools: - Types of Authoring programmes –Icon based, Time-based, object-oriented working in macromedia flash, exploring interface using selection of PEN tools. Working with drawing and painting tools, applying colour viewing and manipulating time line, animating, processing, guiding layers, importing and editing sound and video clips in flash.	8	CO5

References Books:

1- Patrick Naughton &Herbert Schildt - The Complete Reference Java 2 (Third Edition) -TMH

2- William Casanova and Molina, Multimedia An Introduction; Prentice Hall of India, New Delhi

e-Learning Source:

1- https://ahsec.assam.gov.in/wp-content/uploads/2022/03/Multimedia -and-Web-Technology-1.pdf

2- https://cbseacademic.nic.in/web_material/Curriculum17/SrSecondary/16%20Multimedia%20and%20web%20%20technology.pdf

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	2	1	-	-	-	-	-	-	-	-
CO2	-	2	-	1	1	-	-	-	1	-	-
CO3	-	2	-	3	-	-	-	-	1	1	-
CO4	-	2	2	-	-	-	-	-	1	-	-
CO5	-	2	-	3	-	-	-	-	-	-	-

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	Sign & Seal of HoD

Integral University, Lucknow