Integral University, Lucknow

Effective from Session:							
Course Code	MT114	**Title of the Course**	MATHEMATICS II	**L**	**T**	**P**	**C**
Year	I	**Semester**	II	3	1	0	4
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	• To provide basic knowledge of Mathematics which will be fruitful for them in their higher studies.						

Course Outcomes	
CO1	Jacobians are used in designing and forging a robot.
CO2	ODE is practically important for engineers to be able to model physical problems using mathematical equations and then solve these equations so that the behavior of the systems concerned can be studied.
CO3	Partial differential equations are used to mathematically formulate, and thus aid the solution of, physical and other problems involving functions of several variables, such as the propagation of heat or sound, fluid flow, elasticity,electrostatics, electrodynamics, etc.
CO4	Probability models are useful anywhere that you cannot model a situation deterministically.
CO5	The third common use of linear regression is estimating the value of one variable corresponding to a particular value of the another variable.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Partial Differentiation and its application	Partial Derivatives, Euler's Theorem on Homogeneous function, Total differentiation, Errors, Jacobins, Curve tracing, Expansion of functions of onevariable and two variables.	8	CO1
2	Ordinary Differential Equation	Order and degree of differential equations, solution of differential equations of firstorder and first-degree variables separable, Linear D.E., Homogenous D.E., Exact D.E., Linear differential equation with constant coefficients: Complementaryfunction, Particular integral, Method of variation of parameters.	8	CO2
3	Partial Differential Equation and Geometry	Introduction of partial Differential Equations, Linear partial differential equation ofsecond order with constant coefficients, Classification of P.D.E. to parabolic, Elliptic and hyperbolic with examples, Straight lines, Circle, Parabola, Ellipse, Hyperbola in two dimensions.	8	CO3
4	Probability and Distributions	Definition of probability, Elementary properties, Conditional Probability, Baye'sTheorems (without proof), Binomial Distribution, Poisson Distribution and Normal Distribution.	8	CO4
5	Statistics	Measures of central Tendency – Mean, Median, Mode, Standard deviation and Variance, correlation – Karl Pearsons correlation coefficients, Rank correlation coefficients, Regression lines, Properties of regression coefficients.	8	CO5

Reference Books:

1. Differential equation by Gupta, Malik and Mittal Pragati Prakashan.
2. Probability theory and random process by S.P. Eugene Xavier, S. Chand & company Pvt.Ltd.
3. Elements of partial Differential Equation by Sneddon McGraw Hill.
4. Mathematics and statistics by Ajay Goyal, Taxman Allied Service Pvt. Ltd.
5. Engineering Mathematics – II by H.K. Dass, S. Chand & company Pvt. Ltd.

e-Learning Source:

1. https://onlinecourses.nptel.ac.in/noc20_ma17/
2. https://nptel.ac.in/courses/111105121

Course Articulation Matrix: (Mapping of COs with POs and PSOs)										
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2
CO1	2	2	2	1	1	1	2	1	2	2
CO2	3	1	2	1	1	1	2	2	2	1
CO3	2	2	2	1	1	1	2	2	1	2
CO4	3	1	2	1	1	1	2	1	2	1
CO5	1	1	2	1	1	1	2	3	1	2

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

Integral University, Lucknow

Effective from Session: 2015-2016							
Course Code	CA113	**Title of the Course**	CYBER CRIME AND CYBER LAW	**L**	**T**	**P**	**C**
Year	I	**Semester**	II	3	1	0	4
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	• The course objective is to provide the fundamental skill to understand cyber laws. • It enables to understand the legal frameworks • It helps the student understand different cyber crimes • It provides overview on Intellectual Property, copy rights, patents rights etc. 5. Given rapid changes in technology and the corresponding changes in crime and the law						

Course Outcomes	
CO1	Understand the various types of traditional and contemporary crime related to World of Cyber Space.
CO2	Understand the threats and affect to information system security and different types of security issues.
CO3	Understand the technological and legal issues in electronic and digital signature and way of handling the same.
CO4	Understand to analyze and assess the fundamentals of Intellectual Property Rights (IPR) and Cyber Law.
CO5	Understand to IT Rules (Intermediaries Guidelines) , Legal Issues and Challenges Globally and find a way how investigate the crime as per law.

Unit No.	**Title of the Unit**	**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1	Nature and Scope of Cyber Crime	World of Cyber Space and Cyber Crime, Cybercrime and Jurisdiction, Cyber Crime Impact and International Action, Ethical Issues in Data and Software Privacy, Cyber Terrorism and Pornography, Documents Tampering, Data Privacy and Protection, Software Security Crime, Ethical Hacking. Internet Security Threats: Hacking, Cracking, Sneaking, Stalking with Case Study.	8	CO1
2	Information System Threats	Threats and Affect to Information System Security, Unauthorized Access: Spoofing and Sniffing, Denial of Services; Computer Virus: Trojan horse, Worms; Theft: Physical Theft, Data Theft, Identity Theft; Malicious Code and Logic Bombs, Sabotage, Vandalism, Accidents; Distinction between Cyber Crime and Conventional Crime.	8	CO2
3	Electronic and Digital Signatures	Types of Digital Signature and its Working, Technical Issues, Legal Issues, Electronic Records, Crime based on Biometric Security Digital Forensics: Concept of Digital Forensics, Digital Forensic Life Cycle: Preparation, Collection, Transporting, Investigation, Analysis and Interpretation, Reporting and Testifying.	8	CO3
4	Intellectual Property Rights and Law	Trade mark, Patent, Copyright, Neighboring Rights, Integrated Circuits, Industrial Design, Geographical Indication, Trade Secret and its Issues and Challenges; Copyright Law and Patent Law in India. Fundamentals of Cyber Law: Evolution of Law related to Cyber Crime, Genesis and Necessity of IT Act 2000, Object and Scope of the IT Act 2000, Various Authorities under ITAct and their powers; Penalties & Offences, Various Amendments.	8	CO4
5	IT Rules (Intermediaries Guidelines)	IT Rules 2011 Vs IT Rules 2021, Major Changes and Benefits in IT Rules 2021, Safety Enhancement to Woman and Children, Intermediaries Actions and its Time Frame, Case Study. Legal Issues and Challenges in India, USA and EU: Data Protection and Cyber Security, Legal recognition of Digital Evidence, Recognition of liability in the digital world, Jurisdiction Issues in Transnational Crimes.	8	CO5

Reference Books:

1. Dr. R.K. Chaubey, 'An Introduction to Cyber Crime and Cyber Law', Kamal Law House.
2. Dr. J.P. Mishra, An Introduction to Cyber Laws, Central Law Publications.
3. Harish Chander, 'Cyber Law and IT Protection', PHI Publication
4. Rohatgi and Karkare, 'Guide to Cyber Law & Crimes', 3rd edition. Whytes& Co.

e-Learning Source:

1. https://www.youtube.com/playlist?list=PLf8YqCm9HoI6fb4LdoY2tFgJfM0PrgInS
2. https://nptel.ac.in/courses/106106129

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	1	3	2	1	1	1	1	1					2	1				
CO2	3	2		1	1	2	1						2	1				
CO3	1	2	1	1	2	1	3						1	1				
CO4	1	1	1	2		2	1						1	2				
CO5	2	1	2	2	1	1	2	1					2	1				

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

Integral University, Lucknow

Effective from Session: 2023-2024							
Course Code	LN131	**Title of the Course**	EFFECTIVE COMMUNICATION AND MEDIA STUDIES IN ENGLISH	**L**	**T**	**P**	**C**
Year	I	**Semester**	II	**3**	**1**	**0**	**4**
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	The students will be able to: • Developing the art of communication and learning basic skills of conversation. • Knowledge of Professional and Media Skill Development, Career enhancement tips and goal oriented learning. • Basic concept of Phonetics, Voice and Accent. • Students will learn academic learning and descriptive writing.						

Course Outcomes	
CO1	Students will be able to develop Formal and Informal Spoken skills, learn career development skills and learn to have clear idea of goal setting.
CO2	Students will learn about the importance and usage of mass media and ways to develop their media skills.
CO3	Academic Writing will help students to format and structure the content they create which will help them to be professional writers and bloggers.
CO4	The unit will help students to learn and develop better conversation skills in formal and informal setup. They will learn the proper usage and pronunciation in various accent enabling them to converse in competitive environment.
CO5	The unit enables students to put all the theoretical knowledge to practice, assuring complete learning and implementation.

Unit No.	**Title of the Unit**	**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1	Communication in Practice	Do's and Don'ts of Formal and Informal Communication Tips on Career Management- Setting Clear Goals, Skill Development, Network Building and Professional Relationship Etiquette, Knowing Aptitude and Values. Classroom Practice- JAM (Just A Minute) Extempore, Rebuttal, Forum, Role Play.	8	CO1
2	Mass Communication and Journalism	Introduction to Mass Communication. Types of Mass Communication/ Mass Media Impact of Globalization on Mass Media Socio Political Impact of Digital Media Advertisement- Ethical and Unethical Advertisement, Jingles Tag Lines, Punch Lines, Media Writing	8	CO2
3	Fundamentals of Academic Writing	The four main types of academic writing- Descriptive, Analytical, Persuasive and Critical. Writing Book Review, Introduction to Descriptive Writing Techniques and Features of Descriptive Writing - Character, Place and Travel Description, Event, Movie and Food description.	8	CO3
4	Conversation Skills	Phonetics- Learning Speech Mechanism (Voice and Accent) Introduction- Self and Other-Guest Speaker / Colleague Polite Conversational Etiquette Varieties of English Language; their difference in terms of Pronunciation, Vocabulary and Spelling: British, American	8	CO4
5	Academic Project	Creating News Bytes Writing News Report Creating Jingles and Tag Lines for Famous Brands. Writing Editorial on a Topical Subject Writing Film Reviews Travelogue	8	CO5

Reference Books:

1. Kumar, Sanjay and Pushp Lata. Communication Skills. Oxford University Press, Oxford 2011.
2. Raman, Meenakshi, and Sangeeta Sharma. Technical Communication: Principals and Practice.Second Edition, Oxford University Press, 2012.Raina, Roshan Lal, Iftikhar Alam, and Faizia Siddiqui. Professional Communication. Himalaya Publication House 2012.
3. Agarwal, Malti. Professional Communication. Krishna's Educational Publishers. 2016.
4. Carnegie, Dale. How to Win Friends and Influence People in the Digital Age. Simon and Schuster. 2012.
5. Covey, Stephen R. The Seven Habits of Highly Successful People. Free Press. 1989.
6. Verma, KC. The Art of Communication. Kalpaz. 2013.
7. Alred, G. J., Brusaw, C. T., & Oliu, W. E. (2011). Handbook of Technical Writing, Tenth Edition (10th ed.). St. Martin's Press
8. Sherman, Barbara.(2014). Skimming and Scanning Techniques. Liberty University Press.
9. Barker, Alan. (2011). Improve Your Communication Skills. Kogan Page Pub. [later edited version to be added if any]
10. Seely, John. (1998). The Oxford Guide to Effective Writing and Speaking. Oxford UP.

e-Learning Source:

1. http://www.uptunotes.com/notes-professional-communication-unit-i-nas-104...
2. https://www.docsity.com/en/subjects/professional-communication/

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	3	1	1	2	2	1	2	3	3	1	2	2	3	2	2	3	2	3
CO2	3	3	2	2	2	2	2	1	2	2	2	3	2	2	3	3	3	3
CO3	3	2	2	3	2	3	3	2	2	3	2	3	2	3	3	3	3	3
CO4	2	3	1	2	3	1	2	2	3	3	3	3	3	3	2	2	2	2
CO5	3	2	2	1	2	3	3	3	2	3	2	2	3	2	2	3	3	2

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

Integral University, Lucknow

Effective from Session:2015-2016							
Course Code	CA106	**Title of the Course**	COMPUTER ORGANIZATION	**L**	**T**	**P**	**C**
Year	I	**Semester**	II	3	1	0	4
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	• To understand the concepts of number system, k maps and complements. • To learn the importance of combinational logic phenomena in different circuit analysis with the help of architectures and protocols. • To learn about sequential circuits in asynchronous and synchronous modes and to understand the basic organization of CPU. • To study the memory organization consisting of PLA and PAL. • To know about the I/O devices, interface and Handshaking phenomena.						

Course Outcomes	
CO1	With a new advancement in technology, a student shall be able to and analyze base concept of different number systems. A student can also understand the concept of logical design in K map and with the help of Boolean expressions.
CO2	Using connotational logic one can establish a strong circuit for parallel and serial addition using different combinational circuits. A student should understand the importance of Flip Flop, registers and counters to design asynchronous and synchronous circuits using state diagrams.
CO3	A student should be able to understand the facts of CPU architecture, their implementation for providing a basic concept regarding addressing modes and BUS architecture
CO4	He/she should be able to know the duties regarding Memory Hierarchy. A student should be aware of the fact when to use PAL and when to use PLA.
CO5	A student should gain knowledge of Asynchronous data transfer, serial and parallel communication.

Unit No.	**Title of the Unit**	**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1	Digital Logic Circuit	Number System: Binary, Octal, Hexadecimal, Character codes (BCD, ASCII, EBCDIC), Logic gates, Boolean Algebra, K-map simplification. Combinational logic design: Half adder, Full adder, Subtractor, Carry look ahead adder, Decoder, Encoder, Multiplexer, De-multiplexer.	8	CO1
2	Sequential Circuits	Flip-Flops, Excitation tables, Flip-Flop input equation, State table, State diagram, Registers, Counters (synchronous and asynchronous), Complements: (r-1)'s complement, r's complement. Fixed point representation, Floating point representation, Gray codes.	8	CO2
3	BASIC Organization	Von Neumann machine (IAS computer), Instruction formats, Instruction cycle, Organization of Central Processing Unit, General Register Organization, Stack Organization, Addressing Modes, Data transfer and manipulation, BUS Architecture, Hard-wired and micro programmed control unit.	8	CO3
4	Memory Organization	Memory hierarchy, Main Memory, Types of RAM & ROM, Auxiliary memory, Associative memory, Cache memory, Memory mapping (Direct, Associative, Set associative), Virtual memory, Memory management hardware.	8	CO4
5	I/O Organization	Peripheral devices, I/O interface, Synchronous data transfer, Asynchronous data transfer, Strobe control, Handshaking, Mode of Data transfer: Program Driven I/O, Interrupt Driven I/O, Priority interrupt, Direct memory access, Input output processor, Serial communication, Parallel communication.	8	CO5

Reference Books:

1. M. Morris Mano, "Computer System Architecture" PHI.
2. B. Ram, "Computer Fundamental Architectures Organization", New Age.
3. Tannenbaum, "Structured Computer Organization", PHI.
4. Willam Stelling, "Computer Organizations Architecutre" Pearson Education.

e-Learning Source:

1. https://nptel.ac.in/courses/106105163
2. https://www.javatpoint.com/computer-organization-and-architecture-tutorial

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	3	2	1	1		1							2	2				
CO2	1	3	1		1		1						2	1				
CO3	2	1	2			1	1						2	1				
CO4	1	2	1	1		2	1						1	1				
CO5	1	2	1	1		3							2	1				

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

Integral University, Lucknow

Effective from Session:2015-2016							
Course Code	CA107	**Title of the Course**	DATA STRUCTURE USING C	**L**	**T**	**P**	**C**
Year	I	**Semester**	II	3	1	0	4
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	• To learn basic knowledge about data structure and arrays. • To learn how to create and use linked list and its applications. • To learn the importance of static and dynamic use of stack and queues. • To learn the basic terminology of trees. • To learn basics of sorting and searching techniques						

Course Outcomes	
CO1	Able to understand basics of C programming language and arrays.
CO2	Able to understand basic concepts of linked list.
CO3	To understand the basic concepts of stack and queues through array and linked list.
CO4	To understand the basic knowledge of trees and graph.
CO5	Able to understand the concepts of sorting and searching techniques.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction	Introduction to Data Structure, Efficient use of memory, Elementary Data Organization, Structure operations, Time and space complexity of algorithms and asymptotic notations. Array Definition and Representation, Single and Multidimensional Arrays, Address calculation, Application of arrays, Character String in C, Character string operation, Array as Parameters	8	CO1
2	Linked list	Representation and Implementation of Singly Linked List, Traversing and Searching of Linked List, Overflow and Underflow, Insertion and deletion to/from Linked Lists, Insertion and deletion Algorithms, doubly linked list and dynamic storage management, Circular Link List, Garbage Collection and Compaction.	8	CO2
3	Stacks & Queues	Introduction to Stack, Array Representation and Implementation of stack, Operations on Stacks: Push & Pop, Linked Representation of Stack, Application of stack: Postfix and Prefix conversions, Evaluation of expressions using stack. Introduction to Queue, Array and linked representation and implementation of queues, Operations on Queue: Create, Add, Delete, Full and Empty, Circular queues and De-queue, Priority Queues.	8	CO3
4	Trees & Graph Theory	Basic terminology, Binary Trees, Binary tree representation and Traversal, Algebraic Expressions, Complete Binary Tree, Threaded Binary trees, Binary Search Tree (BST), Height balanced tree and various Rotations. Graph Theory: Terminology & Representations, Traversal- BFS and DFS, Dijkstra's algorithm for shortest path, Prim's and Kruskal's Algorithm for Minimal Spanning tree	8	CO4
5	Searching & Sorting	Sequential search, Binary search, and Hash search, Comparison and analysis. Sorting: Insertion Sort, Selection Sort, Bubble Sort, Quick Sort, Two Way Merge Sort and Heap Sort.	8	CO5

Reference Books:

1. Horowitz and Sahani, "Fundamentals of data Structures", Galgotia Publication Pvt. Ltd., New Delhi
2. M. Tenenbaum, "Data Structures using C & C++", Prentice-Hall of India Pvt. Ltd., New Delhi.

e-Learning Source:

1. https://archive.nptel.ac.in/courses/106/103/106103069/
2. https://nptel.ac.in/courses/106105085

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	3	1	1		1								2	1				
CO2	2	2	1		1		1						2	1				
CO3	2	1	2		2		1						3	1				
CO4	3	1	1	1		1	1						2	1				
CO5	2	1		1		2	1						2	1				

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

Integral University, Lucknow

Effective from Session: 2015-2016							
Course Code	CA108	**Title of the Course**	DATA STRUCTURE LAB	**L**	**T**	**P**	**C**
Year	I	**Semester**	II	0	0	3	2
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	• To impart the basic concepts of data structures and algorithms. • To understand concepts about searching and sorting techniques. • To understand basic concepts about stacks, queues, lists trees and graphs. • To understand the algorithms and step by step approach in solving problems with the help of fundamental data structures. • To strengthen the ability to identify and apply the suitable data structure for the given real-world problem.						

Course Outcomes	
CO1	Able to analyze the time and space efficiency of the data structure and Identity the appropriate data structure for given problem.
CO2	Able to understand basic concepts of linked list and Implement operations like searching, insertion, and deletion, traversing mechanism etc. on various data structures.
CO3	Able to understand the basic concepts of stack and queues through array and linked list.
CO4	Able to understand the basic knowledge of trees and graph.
CO5	Implement appropriate sorting/searching technique for given problem.

Experiment	**Title of the Experiment**	**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1	Array	Find the Maximum and Minimum value in an array, concatenate two strings, without using library function	2	CO1
2	Stack	Array implementation of Stack and perform Push and Pop operations, Evaluation of a Postfix expression	2	CO2
3	Queue	Array implementation of Linear Queue and perform Insertion and Deletion, Circular Queue and perform Insertion and Deletion, Singly Link List and perform Insertion, Deletion and Traversal	2	CO3
4	Doubly Link List	Implementation of Doubly Link List and perform Insertion, Deletion and Traversal operations, Binary Tree and perform In order, Preorder, and Post order Traversals	2	CO4
5	Searching and sorting	Searching of element in array using Linear Search, Binary Search and Sorting of elements in array using Bubble Sort	2	CO5

Reference Books:

1. Horowitz and Sahani, “Fundamentals of data Structures”, Galgotia Publication Pvt. Ltd., New Delhi. 2. M. Tenenbaum, “Data Structures using C & C++”, Prentice-Hall of India Pvt. Ltd., New Delhi.
2. Horowitz and Sahani, “Fundamentals of data Structures”, Galgotia Publication Pvt. Ltd., New Delhi. 2. M. Tenenbaum, “Data Structures using C & C++”, Prentice-Hall of India Pvt. Ltd., New Delhi.

e-Learning Source:

1. https://archive.nptel.ac.in/courses/106/103/106103069/
2. https://nptel.ac.in/courses/106105085

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	2	3	1	2	1		1						1	2				
CO2	3	1	2		1	1							2	1				
CO3	2	1	2		1		1						1	1				
CO4	3	1	1	1		1							2	1				
CO5	1	1	3	1		2	1						2	2				

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

Integral University, Lucknow

Effective from Session: 2015-2016							
Course Code	CA109	**Title of the Course**	COMPUTER ORGANIZATION LAB	**L**	**T**	**P**	**C**
Year	I	**Semester**	II	0	0	2	2
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	• Understanding the behavior of Logic Gates, Adders, Decoders, Multiplexers and Flip-Flops. • Understanding the behavior of ALU, RAM, STACK and PROCESSOR from Working modules andthe modules designed by the student as part of the experiment. • To enable the students to understand the functionality and implementation of computer system. • To familiarize with the various instruction codes and formats of different CPUs. • Knowledge of the internal working of main memory, cache memory, associative memory andvarious modes of data transfer.						

Course Outcomes	
CO1	Analyze the behavior of logic gates
CO2	Design combinational circuits for basic components of computer system and Applications.
CO3	Analyze the operational behavior and applications of various flip-flop
CO4	Design Arithmetic logic units and different types of memory blocks.
CO5	Ability to understand the functionality, organization and implementation of computer system.

Exp. No.	**Title of the Experiment**	**Content of Experiment**	**Contact Hrs.**	**Mapped CO**
1	Experiment-1	Study and Bread Realization of Logic Gates, K-Map, Flip-Flop equation, Realization of characteristic and excitation table of various Flip Flops	3	CO1
2	Experiment-2	Implementation of Half Adder, Full Adder and Subtractor.	3	CO2
3	Experiment-3	Implementation of Ripple Counters and Registers.	3	CO3
4	Experiment-4	Implementation of Decoder and Encoder circuits.	3	CO4
5	Experiment-5	Implementation of Multiplexer and De-Multiplexer circuits.	3	CO4
6	Experiment-6	Study of 8085 and 8086.	3	CO5
7	Experiment-7	Assembly language Programming for 8086. Addition, Subtraction Find greatest numbers	3	CO5

Reference Books:

1. M. Morris Mano, “Computer System Architecture” PHI.
2. B. Ram, “Computer Fundamental Architectures Organization”, New Age.
3. Tannenbaum, “Structured Computer Organization”, PHI.
4. Willam Stelling, “Computer Organizations Architecture” Pearson Education.

e-Learning Source:

1. https://nptel.ac.in/courses/106106166
2. https://nptel.ac.in/courses/106105163

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	2	3	2	2	3	2	1	3					2	3				
CO2	2	3	2	2	3	2	1	3					2	2				
CO3	2	3	2	2	3	2	2	1					2	3				
CO4	2	3	2	2	3	2	2	1					2	2				
CO5	2	3	2	2	3	2	1	2					2	1				

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

Integral University, Lucknow

Effective from Session: 2020-21							
Course Code	LN153	**Title of the Course**	ADVANCED PROFESSIONAL COMMUNICATION LAB II	**L**	**T**	**P**	**C**
Year	I	**Semester**	II	0	0	2	1
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	• The course aims to educate the students in both the artistry and utility of the English language for professional purposes through the study of language and literature. • The key component of the various types of professional communication is basically communication in the English language which is now a global language. • The Department of Languages caters to the needs of the students aspiring for training, expertise and excellence in professional communication with a marked emphasis on English for Specific/Special Purposes (ESP). • Students will be given new insights into the concepts of soft skills & professional communication to boost their confidence which will help them choose and build a better career which depends not only on the hard skills, but on one's soft skills & professional ethics also. • The course will help them overcome their fear & anxiety of public speaking & guide them to be a good & effective communicator whom people love to hear.						

Course Outcomes	
CO1	Students will be introduced to the basic understanding of communication and Professional Communication. Knowledge of Professional, cultural and cross-cultural communication will be imparted. Meaning and process of Question Formation will be taught. Basic Understanding of questions will be provided. They will also learn & practice how to introduce oneself in professional setting & how to manage speaking anxiety.
CO2	Understanding of basics of Group Discussion and Presentation. The activities will be practiced by various Listening exercises & word games to help them become better presenter.
CO3	Basic tools of communication and improvement in communicative competence. Improvement in communicative competence will be done by using various software applications, showing them cultural movies & involving them in exercises like small & situational talk.
CO4	Negotiation and art of negotiation will be taught & practiced to improve vocal clarity & pronunciation. Understanding the structural and functional grammar and basic structure of language.
CO5	Interview skills will be practiced to make them learn how paralinguistic features dramatically affect meaning & how it can help one in becoming a persuasive & engaging speaker.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Framing Questions	Yes/No Questions, Why-Questions, Question tags, Rhetorical Questions	2	CO 1
2	Group Discussion and Group Presentation	Theory and practice sessions, visual aids When does the GD take place? What does the GD test? Difference between GD and Debate Some Do's and Don'ts of GD	2	CO 2
3	Situational Conversation	Social language, Emergency situation, seeking help, Inquiries and Communicating Bad News	2	CO 3
4	Negotiation	Common fears about negotiations, Building Momentum, bargaining with more powerful opponents, Opening Tactics, Countering your opponent's moves	2	CO 4
5	Mock Interview Exercises	Mock Interview Exercises	2	CO 5

Reference Books:

1. Gerson, Sharon J. Technical Writing: Process and Product (5th edition). Prentice Hall, 2005.
2. K. Floyd, Interpersonal Communication: The Whole Story. McGraw Hill, 2009.
3. Greenbaum, Sidney and Nelson Gerald, An Introduction to English Grammar. Routledge, 2009.
4. Swan, Michael, Practical English Usage. OUP, 2005.

e-Learning Source:

1. https://ndl.iitkgp.ac.in./
2. https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=9RA537jM1m7VD3VCoav4lQ==

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	**PO-**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	3	3	3	3	3							3	3			
CO2	3	3	3	3	3	3	3							3	3			
CO3	3	3	2	3	3	3	3							3	3			
CO4	3	3	2	3	3	3	3							3	3			
CO5	3	3	3	3	3	3	3							3	3			

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