Integral University, Lucknow

Effective from Session: 2015-2016							
Course Code	MT 103	**Title of the Course**	MATHEMATICS I	**L**	**T**	**P**	**C**
Year	I	**Semester**	I	3	1	0	4
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	• To impart basic and key knowledge of trigonometry, complex numbers. • To impart knowledge of theory of matrices, differential calculus, integral calculus, multiple integrals and vector calculus. • The content of course has various applications. After successfully completion of course, the student will able explore subject into their respective dimensions.						

Course Outcomes	
CO1	Students will be able to understand Trigonometry: Trigonometry Functions, Functions of angles of any magnitude, Compound and multiple angles, Inverse circular functions, Complex Numbers: Modulus, Argument of complex number,Complexconjugate, Algebraic operations, De-Moivre's theorem, Roots of a complex number.
CO2	Students will be able to understand different types of matrix, Algebraic operations, Symmetric & skew symmetric matrix, Transpose of matrix, Orthogonal matrices, Rank of matrix, Determinant of a square matrix, Inverse of a square matrix, Solution of Linear Equations by Cramer's Rule and Gauss-Elimination method, Eigen values & Eigen vectors of a square matrix.
CO3	Students will be able to find Limit, Continuity and differentiability of functions. They will also be able to understand Differentiation Rules of functions, Tangent and normal lines, Condition of tangency, Extreme values of functions.
CO4	Students will be able to understand the concept of Indefinite integrals. They will also be able to find Integration by parts,Integration by substitution, Definite integrals, double integration & triple integration. They will able to use definite integral to find Area and Volume.
CO5	Students will be able to understand the concept of vectors in a plane and space, Linear dependence and independence of vectors, Dot and cross-product of vectors, Gradient of vectors, Divergence of vectors, Curl of vectors, Physical interpretation of gradient,Divergence and curl of vectors

Unit No.	**Title of the Unit**	**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1	Trigonometry and Complex Numbers	Trigonometry: Trigonometry Functions, Functions of angles of any magnitude,Compound and multiple angles, Inverse circular functions. Complex Numbers: Modulus, Argument of complex number, Polar form, vectorform, Complex conjugate, Algebraic operations, De-Moivre's theorem, Roots of a complex number	8	CO1
2	Differential Calculus	Definition of different types of matrix, Algebraic operations, Symmetric & skew symmetric matrix, Transpose of matrix, Orthogonal matrices, Rank of matrix,Determinant of a square matrix, Inverse of a square matrix, Solution of Linear Equations by Cramer's Rule and Gauss-Elimination method, Eigen values & Eigen vectors of a square matrix	7	CO2
3	Differential Calculus	Limit, Continuity and differentiability of functions, Differentiation Rules,Differentiation of functions (Algebraic, Trigonometric, Logarithmic, Exponential and Inverse trigonometric functions), Tangent and normal lines, Condition oftangency, Extreme values of functions.	8	CO3
4	Integral Calculus	Indefinite integrals, Basic formulae, Integration by parts, Integration by substitution, Definite integrals, Properties of definite integrals, Evaluation of double integration & triple integration, Application of definite integral to find Area and Volume.	8	CO4
5	Vector Calculus	Vectors in a plane, Linear dependence and independence of vectors, Vectors in space, Dot and cross-product of vectors, Gradient of vectors, Divergence of vectors, Curl of vectors, Physical interpretation of gradient, Divergence and curl of vectors.	9	CO5

Reference Books:

1. 12th N.C.E.R.T. Book
2. Differential calculus by Shanti Narayan, S. Chand.
3. Integral Calculus by M. Roy & S. S. Seth, Sivalal Agarwala & Company.
4. Introduction to Engineering Mathematics I by H.K. Dass, S. Chand.

e-Learning Source:

1. https://nptel.ac.in/courses/111108157
2. https://nptel.ac.in/courses/102101003

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

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

Integral University, Lucknow

Effective from Session: 2015-2016							
Course Code	LN104	**Title of the Course**	ESSENTIAL PROFESSIONAL COMMUNICATION	**L**	**T**	**P**	**C**
Year	I	**Semester**	I	3	1	0	4
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	• Developing the art of communication and learning language though literature. • Knowledge of Professional, cultural and cross-cultural communication. • Basic concept of structural and functional grammar; meaning and process of communication, verbal and nonverbal communication. • Knowledge of reading and comprehension of general and technical articles, precise writing, summarizing, abstracting. • Basic concepts of group discussion, organizing seminars and conferences. Development of Reading and Writing skills						

Course Outcomes	
CO1	Basic Understanding of Communication and Professional Communication
CO2	Basic knowledge of structural and functional grammar. Learning Language through literature
CO3	Basic tools of communication and improvement in communicative competence
CO4	Understanding the basic grammar and basic structure of language
CO5	Enhancement of writing skills in English i.e. writing application, report and various types of letters

Unit No.	**Title of the Unit**	**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1	Professional Communication	Professional Communication: Its Meaning and Importance, Essentials of Effective Communication, Barriers to Effective Communication. The Cross Cultural Dimensions of Professional Communication.	8	CO1
2	Language through Literature	Essays: 1. The Effect of Scientific Temper on Man by Bertrand Russell, 2. The Aim of Science and Humanities by Moody E Prior. B. Short Stories: 1. The Meeting Pool by Ruskin Bond, 2. The Portrait of a Lady by Khushwant Singh	8	CO2
3	Basic Vocabulary	Euphemism, One-word Substitution, Synonyms, Antonyms, Homophones, Idioms and Phrases, Common Mistakes, Confusable Words and Expressions, Portmanteau Words, Foreign Words and Expressions.	8	CO3
4	Basic Grammar	Articles, Prepositions, Tenses, Concord, (Subject-Verb agreement), Modal Auxiliaries, Verbs: its Kinds and uses, Degrees of Comparison, Punctuation	8	CO4
5	Basic Composition	Report Writing: What is report? Kinds and Objectives of reports, writing reports, Business Letter writing; Introduction to Business Letters, Layout of Business letters, Letters of Enquiry/Complaint Proposal writing	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.
3. Raina , Roshan Lal, Iftikhar Alam, and Faizia Siddiqui, Professional Communication. Himalaya Publication House 2012.
4. Agarwal, Malti. Professional Communication. Krishna's Educational Publishers. 2016.

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

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

Integral University, Lucknow

Effective from Session: 2015-16							
Course Code	CA110	**Title of the Course**	COMPUTER FUNDAMENTALS AND C PROGRAMMING	**L**	**T**	**P**	**C**
Year	I	**Semester**	I	3	1	0	4
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	• To learn basics of Computer fundamentals, Networks, Internet and operating system • To understand the basics of programming paradigms and C Programming. • To be able to develop logics in order to create programs and applications using C language. • To learn decision-making statements in order to solve problems. • To understand the use of functions and pointer in C programming. • To learn and implement the concept of arrays, structure & union. • After learning the C programming, they can easily switch over to any other language.						

Course Outcomes	
CO1	Understand the basic knowledge of Computer fundamental and its application in computers.
CO2	Understand the basic concepts of C programming language and able to identify the need and use of programming in real world environment.
CO3	Design and develop various programming problems using basic concepts of C programming.
CO4	Implement concept of functions, pointers, array and string to resolve real world problems.
CO5	Understand advance C programming concepts like structure, union and enumeration etc.

Unit No.	**Title of the Unit**	**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1	Introduction to Computer Systems	Introduction and History of Computers, Generations of Computers, Types of Computer, Basic Block Diagram and Functions of Various Components of Computer, Concept of Hardware and Software, Types of Software, Compiler and Interpreter, Memory and its Types, Elementary Concept of Operating System, Basics of Networks and Internet.	8	CO1
2	Introduction of C Language	Introduction and History of C Programming Language, Salient features of C, Structure of C Programs, Execution and Compilation of C programs. Fundamentals of C Language: Character Set, C Tokens, Keywords, Identifiers, Modifiers, Variables: Declaration and Initialization of Variables, Scope of Variables, Data Types, Error, Types of Error.	8	CO2
3	Operators & Expressions	Types of Operators: Unary and Binary Operators, Assignment, Arithmetic, Relational & Logical Operators, Increment and Decrement Operators, Conditional Operators, sizeof() Operator, Comma Operator, Conditional Operator & Bit wise operators, Type Conversion, Types of Expression. Control Structures: Simple statements, Decision Making Statements, Looping statements, Nesting of Control Structures, Break and Continue statement, goto Statement	8	CO3
4	Functions	Built-in and User-Defined Function, Types of User Defined Function, Function Prototype Declaration, Function Call, and Function Definition, Nesting of Functions, Recursive Functions, Macros and C Preprocessor, Storage Classes. Pointers: Introduction toPointer Operators (&,*), Pointer Arithmetic, Parameter Passing: Call by Value, Call by Reference, Pointer to Pointer, Dynamic Memory Allocation, calloc() and malloc() Functions.	8	CO4
5	Arrays & String	Defining Array, Types of Array, Declaration and Initialization of Linear and Multidimensional Arrays, Array and Functions, Passing Arrays to Functions, Character Arrays, Arrays and Strings, String Manipulation, String Functions. Structure and Union: Defining Structure and Union, Declaration and Initialization of Structure and Union Variables, Differences between Structure and Union, Enumeration.	8	CO5

Reference Books:

1. V. Rajaraman, "Fundamentals of Computers", PHI
2. Peter Norton's, "Introduction to Computers", TMH
3. Hahn, "The Internet complete reference", TMH
4. Gottfried, "Programming in C", Schaum's Series, Tata McGraw Hill.

e-Learning Source:

1. https://onlinecourses.swayam2.ac.in/cec19_cs06/preview
2. https://onlinecourses.nptel.ac.in/noc22_cs40/preview

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

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

Integral University, Lucknow

Effective from Session: 2015-2016							
Course Code	CA112	**Title of the Course**	INFORMATION SYSTEM ANALYSIS AND DESIGN	**L**	**T**	**P**	**C**
Year	I	**Semester**	I	3	1	0	4
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	• To learn about the information system environment. • To study different types of information technologies. • To learn about the modern approach to system analysis and design. • To learn use tools for structured analysis and design. • To learn system testing, implementation, maintenance and quality assurance with proper risk management.						

Course Outcomes	
CO1	Implement different types of information system in an organization like MIS, DSS, ESS.
CO2	To implement the information system technologies in an organization.
CO3	Develop and understand the implementation of SDLC and CASE tools.
CO4	To use the information system analysis and design tools for data representation.
CO5	Identify the techniques in testing phase for better quality assurance.

Unit No.	**Title of the Unit**	**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1	System Concepts and Information Systems Environment	Definition and Concepts, Elements of a System; Characteristics of a System; Types of Systems: Physical and Abstract System, Open and Closed Systems, Man-Made System and Computer based Information System. Introduction to Information Systems: Types of Information Systems, Effectiveness and Efficiency Criteria in Information System. Transaction Processing System (TPS), Office Automation System (OAS), Management Information System (MIS), Decision Support System (DSS), Executive Support System (ESS).	8	CO1
2	Information Technology used for Information System	Security and Ethical Challenges, Enterprise Resource Planning (ERP), Supply Chain Management (SCM), Customer Relationship Management (CRM).	8	CO2
3	A Modern Approach to System Analysis and Design	Systems Development Life Cycle, Improving IS Development Productivity, Identifying and Selecting System Development Projects, Corporate Information Systems Planning, Analytical, Technical, Management & Interpersonal Skills for Information generation and System Analysts, Components of CASE tools and its usage.	8	CO3
4	The Tools of Structured Analysis	Process Modeling, Conceptual Data Modeling and E-R Model, Data Flow Diagram (DFD), Business Rules. Logic Modeling, Structured English, Decision Tables, Decision Trees. System Design: Module Specifications, Module Coupling and Cohesion, Top-Down and Bottom-Up Design; Logical and Physical Design, Structured Design.	8	CO4
5	Information System Implementation, Testing and Maintenance	Organizational issues in System Implementation, Testing, Implementation and Maintaining Information Systems, Joint Application Development, Rapid Application Development, Quality Assurance, System Evaluation and Performance, Maintenance Activities and Issues, System Security, Security Threats, Risk Analysis, Control measures, System Audit, Disaster Recovery Planning.	8	CO5

Reference Books:

1. Elis Awad, "System Analysis & Design", Galgotia Pub.
2. Jeffrey A. Hoffer; Joey F. George; Joseph S. Valacich, "Modern Systems Analysis and Design", Sixth Edition, Prentice Hall, 2011
3. Perry Edwards, "System Analysis & Design", Mc Graw Hill
4. Whitten, Bentaly and Barlow, "System Analysis and Design Methods", Galgotia Publication.

e-Learning Source:

1. https://nptel.ac.in/courses/106108102
2. https://nptel.ac.in/courses/106108103

	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	3	3		2	3	2					2	2				
CO2	1	3	2	2	1	3	2	2					2	2				
CO3	2	3	3	3		1	3	3					3	1				
CO4	2	3	3	3	1	3	3	3					2	2				
CO5	1	2	2	2	1	2	2	3					2	1				

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

Integral University, Lucknow

Effective from Session:							
Course Code	ES 115	**Title of the Course**	FUNDAMENTALS OF ENVIRONMENTAL SCIENCE	**L**	**T**	**P**	**C**
Year	I	**Semester**	I	3	1	0	4
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	• To study about the Environment and ecosystem • To study about the Natural Resources. • To study about Biodiversity and Conservation. • To study Environmental pollution, its policies and practices. • To study Human Population and Environmental Ethics.						

Course Outcomes	
CO1	To study about the Environment and the Ecosystem.
CO2	To study about the Natural Resources.
CO3	To study about Biodiversity and Conservation.
CO4	To study Environmental pollution, its policies and practices.
CO5	To study Human Population and Environmental Ethics.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to Environment and Ecosystems	Environment, its components and segments, Multidisciplinary nature of Environmental studies Scope and Importance, Concept of Sustainability and sustainable development, Environmental movements (Chipko and Bishnois etc.), Ecosystem, Structure, Function and types, Energy flow in the Ecosystem, Food chains, Food webs, Ecological Pyramids and Ecological Succession.	8	CO1
2	Energy Resources:	Renewable and non renewable energy sources, Soil erosion and desertification, Deforestation its causes and impacts, Impact of Modern Agriculture activities on Environment, Impact of Mining Activities on Environment, Water: Use and over exploitation of surface and ground water, Impacts of large Dams (Advantages and Disadvantages), Case studies.	8	CO2
3	Biodiversity and Conservation	Levels of biological diversity (Genetic, Species and Ecosystem diversity), Hot spots of biodiversity (Indian /Global), India as a Mega Diversity Nation, Endangered and endemic species of India, Threats to Biodiversity: Habitat Loss, Poaching of Wildlife, Man-Wildlife Conflicts, Conservation of Biodiversity: In-situ and Ex-situ conservation of biodiversity, Ecosystem and biodiversity services (Ecological, Consumptive, Productive, Social, Ethical, Aesthetic, National and Option values).	8	CO3
4	Environmental Pollution, Policies and Practices	Environmental pollution: types, causes, effects and controls, Solid waste management (urban and industrial waste), Ill effects of fireworks, Climate change, Ozone layer depletion, acid rain and impacts on human communities and Environment, Environmental Laws: Environment Protection Act, Air (Prevention & Control of pollution)Act, Water (Prevention & Control of pollution)Act, Wildlife protection Act, Forest conservation Act, International agreements: Montreal and Kyoto protocols and convention on Biological Diversity (CBD), Tribal rights, Human wildlife conflicts in Indian context.	8	CO4
5	Human Population and the Environment	Human population growth: Impacts on environment, human health and welfare, Resettlement and rehabilitation of project affected persons, case studies, RR, EIA, Environmental ethics: Role of Indian and other religions and cultures in environmental conservation, Environmental communication and public awareness, case studies.	8	CO5

Reference Books:

1. Agarwal, K.C. 2001 Environmental; Biology, Nidi Pub. Ltd.Bikaner.
2. Bharucha Erach, the Biodiversity of India, Mapin Pub. Pvt. Ltd., Ahemdabad-380, India.
3. Brunner R.C. 1989. Hazardous waste incineration, Mc Graw Hill.
4. Clark R.S. Marine Pollution, Clanderon Press Oxford (TB).
5. Cunningham W.P.2001.Cooper, T.H. Gorhani, E & Hepworth, Environmental encyclopedia, Jaicob Publication House, Mumbai.

e-Learning Source:

1. https://www.biologydiscussion.com/ecosystem/ecosystem-its-structure-and-functions-with-diagram/6666
2. https://youmatter.world/en/definition/definitions-biodiversity-what-is-it-definition-protection-loss-and-csr-commitments/
3. https://www.conserve-energy-future.com/environmental-ethics.php

	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	1	1	1	3	2	1	1					3	1				
CO2	1	1	1	1	2	2	1	1					2	1				
CO3	1	1	1	1	3	2	1	1					2	1				
CO4	1	1	1	1	2	2	1	1					2	1				
CO5	1	1	1	1	3	2	1	1					2	1				

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

Integral University, Lucknow

Effective from Session: 2015-2016							
Course Code	CA103	**Title of the Course**	C PROGRAMMING LAB	**L**	**T**	**P**	**C**
Year	I	**Semester**	I	0	0	3	2
Pre-Requisite	NONE	**Co-requisite**	CA110				
Course Objectives	• To implement the basic concepts and programming techniques of the C programming language. • To implement the types of data types (characters, strings, integers, floats), and special symbols in the C programming language. • To implement the decision-making control statements and different types of loops in the C programming language. • To implement the functions and pointers in the C programming language. • To implement the various operations on arrays, structures, and unions in the C programming language.						

Course Outcomes	
CO1	To identify the needs and uses of programming languages in a real-world environment.
CO2	Implementing the basic data types, variables, and arithmetic operations in the C programming language.
CO3	To develop a program using decision-making statements and different types of loops in the C programming language.
CO4	Able to design a program using functions and pointers in the C programming language.
CO5	To develop programs using arrays, structures, and unions in the C programming language.

Experiment No.	**Title of the Experiment**	**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1	Basic Programming	Basic Introduction to C program and turbo C setup (Compile/Run program) Simple program using scanf/printf Program using if/else/if-else/nested if-else Program using operators (++,--, %, &,|, etc.) Switch case programs	3	CO1
2	Control Statement and Functions	Programs of loops (while loop, do…while loop) Program of Nested loops (patterns using for loop) Programs using goto statements Program of Functions (no parameter, no return value) Program of Functions (parameter, no return value)	3	CO2
3	Advanced features of the functions and Arrays	Program of Functions (no parameter, return a value) Program of Functions (parameter, return value) Program for scope of functions (global, local, static, register) Simple program of one-Dimensional array (searching, sorting) Programs of two-dimensional array (addition/multiplication of matrix)	3	CO3
4	Function with array and pointer	Program of array and function String Programs (using string function) String Programs (without using string function) Simple program using pointer (display value and its address) Program of pointer and array	3	CO4
5	Functions and pointers	Program of pointer using function Simple program of structure (read values and display the values) Program of structure using functions Program of structure using pointers Simple program of union (read values and display the values)	3	CO5

Reference Books:

1. V. Rajaraman, "Fundamentals of Computers", PHI
2. Peter Norton's, "Introduction to Computers", TMH

e-Learning Source:

1. https://onlinecourses.swayam2.ac.in/cec19_cs06/
2. https://onlinecourses.nptel.ac.in/noc22_cs40/

	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	3	2	3		1	3	3					3	1				
CO2	2	2	2	2	1		3	3					2	2				
CO3	2	3	3	3		3	3	3					1	2				
CO4	1	2	2	2	1		3	3					2	1				
CO5	2	2	2	2	1	2	3	3					2	2				

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

Integral University, Lucknow

Effective from Session: 2015-2016							
Course Code	CA104	**Title of the Course**	COMPUTER APPLICATION LAB	**L**	**T**	**P**	**C**
Year	I	**Semester**	I	0	0	3	2
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	• The main objective is to introduce Programming in a simple language to all undergraduate students, regardless of their specialization. • Understanding the concept of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming • The focus of the subject is on introducing skills relating to computer basics, computer applications, programming, interactive Medias, Internet basics etc						

Course Outcomes	
CO1	Understands the concept of Computer's Input/output devices, the concept of dynamic memory, data types, loops, functions, array, pointers, string, structures and files.
CO2	Accomplish creating basic documents, worksheets, presentations with their properties.
CO3	Be able to identify computer hardware and peripheral devices
CO4	Utilize the Internet Web resources and evaluate on-line e-business system. Identify categories of programs, system software and applications. Describe various types of networks network standards and communication software.
CO5	To understand and make effective use of Linux utilities and shell scripting language to solve problems. Students will be able to understand the basic commands of Linux operating system and can write shell scripts.

Experiment No.	**Title of Experiment**	**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1	Basics of Windows and MS-DOS	Basic Windows elements File management through Windows Use of Pop-up windows & Menu bar Introduction to MS-DOS Internal and External commands, Autoexec.bat & Config.sys	2	CO1
2	Introduction to MS-Word	Basic functionality of Microsoft Word. Working with tables, paragraphs and columns. Reviewing (track changes, adding comments etc.) and proof reading a document i.e. spells check and grammar etc. Working with page layout, page setup and Mail merge. Creating bulleted and numbered lists.	2	CO2
3	Introduction to MS-Excel	Creation of Excel sheet with multiple functionalities. Working with formulae and functions. Sorting and filtering data (auto and advanced filter). Working with charts (2D and 3D). Adding comments, password protection to the workbook.	2	CO3
4	Introduction to MS- Powerpoint	Creating and formatting slides in a presentation. Create a master slide with a logo, footer, and font. Add notes to each slide and implementing background. Insert a graphic or picture and transitions for each slide. Applying various effects (custom animation and transitional effects) in a presentation.	2	CO4
5	Introduction to Internet	Basic knowledge of World Wide Web, browsers and search engines. Basic Communication over the Internet (Email, Browsing and Searching) Downloading and Storing Data. Safe Surfing Tips and Techniques (Firewall, Antivirus). Basics of E-Commerce.	2	CO5

Reference Books:

1. V. Rajaraman, "Fundamentals of Computers", PHI
2. Peter Norton's, "Introduction to Computers", TMH

e-Learning Source:

1. https://onlinecourses.swayam2.ac.in/cec19_cs06/
2. https://onlinecourses.nptel.ac.in/noc22_cs40/

	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	2			1	1						2	1				
CO2	1	2	1	1	1		1						2	2				
CO3	3	2	2	1		1							1	2				
CO4	3	1	2	1	1								2	1				
CO5	2	1	2	1	2		1						1	1				

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

Integral University, Lucknow

Effective from Session: 2015-16							
Course Code	LN152	**Title of the Course**	BASIC PROFESSIONAL COMMUNICATION LAB	**L**	**T**	**P**	**C**
Year	I	**Semester**	I	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 communication, verbal and nonverbal communication will be focused. Basic Understanding of communication and Professional/Business Communication will be provided. They will also learn & practice how to introduce oneself in professional setting & how to manage speaking anxiety. .
CO2	Corrections in basic English sounds and correct pronunciations will be practiced by various Listening exercises & word games to help them become better conversationalist.
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	Phonetic Alphabet and Phonetic Transcriptions will be taught & practiced to improve vocal clarity & pronunciation. Understanding the structural and functional grammar and basic structure of language.
CO5	Intonation & Stress 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	Introduction	Difference between Introduction and Description, SWOT Analysis	6	CO1
2	Software -I	Listening exercises, Pronunciation improvement through self- testing, Vocabulary improvement through word games	6	CO2
3	Software – II	Conversational skills, Exercises based on Language Skills/ Small talk, Cultural movies	6	CO3
4	Phonetics	Phonetic Alphabet and Phonetic Transcriptions	6	CO4
5	Non-verbal communication	Intonation and Stress	6	CO5

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.
5. Murphy, Raymond. *English Grammar in Use*. Cambridge University Press, 2019.
6. Kumar, Sanjay and Pushp Lata., Communication Skills. Oxford University Press, Oxford 2011.
7. Raman, Meenakshi, and Sangeeta Sharma. Technical Communication: Principals and Practice. Second Edition, Oxford University Press, 2012.
8. Gerson, Sharon J. *Technical Communication: Process and Product* (9th edition). Longman Pub., 2016.

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	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	3	3	3	3	3						3	1				
CO2	3	3	3	3	3	3	3						2	2				
CO3	3	3	2	3	3	3	3						2	2				
CO4	3	3	2	3	3	3	3						3	1				
CO5	3	3	3	3	3	3	3						2	1				

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