INSTITUTE OF MANAGEMENT SCIENCES PESHAWAR

Course Code & Title:		**CSC-302 Application of Information and Communication Technologies**
Credit Hours:		3 (2+1)
Program(s) & Group(s):		BCS, BSSE, BS-Data Science and BS-AI
Academic Calendar Semester:		Fall Semester 1st Semester
Lecture Timing:		As per Timetable
Prerequisites and/or Expectations:		This is a foundational level course, which does not need any prerequisites.
Lab Instructor		Mr. Ali Haider
Website (if any):		
Email		ali.haider@imsciences.edu.com
Office Location:		Ground Floor, Academic Block, IMsciences
Office Contact Hours:		On Appointment
Course Description:		This course, using both lecture and laboratory practice, introduces students to basic computer concepts in hardware, software, networking, computer security, database, decision support systems, and other emerging technologies such as Google applications etc. Students learn techniques to search, evaluate, validate, and cite information found online. Widely used applications including word processing, spreadsheets, databases, presentation, and web development software are studied.
Course Objectives (COs):		Objectives of this course is to able the students to: 1. Understand basic functions of computer hardware and software components including operating system functions. 2. Understand the capabilities and limitations of computers and technology. 3. Appreciate the theoretical foundations of computing that drive future computing and technological advancements. 4. Understand the impact of computing technologies in a societal context. 5. Have a working knowledge of standard computing tools and applications (word processing, presentation software, spreadsheets, database systems, web pages, raster graphics, video and sound editing and introductory computer programming) on multiple computing platforms. 6. Have a working knowledge of basic networking, Internet functionality, and network security on multiple computing platforms along with web development fundamentals.

Course Learning Outcomes (CLOs):	At the end of the course the students will be able to:		**Domain**		**BT Level**
	1. Understand computer hardware components, install and configure an operating system, and demonstrate the ability to use command-line tools and batch scripting for system management tasks. 2. Apply skills in document creation, data analysis, and presentation using software applications like Microsoft Word, Excel, and PowerPoint. 3. Configure and troubleshoot basic networking setups, including IP addressing, file sharing, and remote desktop connections, while understanding network devices and functions. 4. Develop functional and interactive web applications using HTML, CSS, and JavaScript, implementing principles of design and interactivity.		C1 C2 C3 C4		Understand Apply Apply Create
		* BT= Bloom's Taxonomy, C=Cognitive domain, P=Psychomotor domain, A= Affective domain			

Alignment of CLOs and COs		CO-1	CO-2	CO-3	CO-4	CO-5	CO-6
	CLO-1	X	X	X			
	CLO-2		X			X	
	CLO-3		X				X
	CLO-4		X		X	X	

Course Assessment(s):				
	As per IMSciences policy ● Mid-term Exam (30%) ● Assignments/presentations (20%) ● Final-term Exam (50%)			
	S.No.	**CLOs**		**Relevant Assessment Methods**
	1.	1, 2, 3, 4		Mid-term & Final-term Exam
	2.	1, 2, 3		Quizzes and assignments
	3.	3, 4		Group discussion and presentation

Graduate Attributes (GAs)/ Program Learning Outcomes (PLOs)	1.	2. Ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems. (**Engineering Knowledge**). 3. Ability to identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences. (**Problem Analysis**). 4. Ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety,

cultural, societal, and environmental considerations. (**Design/Development of Solutions**).

5. Ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis and interpretation of experimental data, and synthesis of information to derive valid conclusions. (**Investigation**)
6. Ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations. (**Modern Tool Usage**)
7. Function effectively as an individual and as a member or leader in diverse teams and in multi-disciplinary settings (**Individual and Teamwork**)
8. Understand and assess societal, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practice (**Computing Professionalism and Society**)
9. Understand and commit to professional ethics, responsibilities, and norms of professional computing practice (**Ethics**)
10. Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional (**Life-long Learning**)
11. Communicate effectively with the computing community and with society about complex computing activities by being able to comprehend and write effective reports, instructions (**Communication**)

Alignment of CLOs and PLOs/GAs

	PLO-1	PLO-2	PLO-3	PLO-4	PLO-5	PLO-6	PLO-7	PLO - 8	PLO - 9	PLO - 10
CLO-1	X	X			X					
CLO-2					X					X
CLO-3	X	X	X		X					
CLO-4			X		X					X

Course Resources:

Textbooks:

1. Introduction to Computers 6th International Edition, Peter, N. McGraw-Hill
2. Using Information Technology: A Practical Introduction to Computer & Communications, 6th Edition. Williams, S. McGraw-Hills.

Reference Books:

1. Computers, Communications & information: A user's introduction, Sarah E. Hutchinson. Stacey, C. Swayer.
2. Fundamentals of Information Technology, Alexis L Mathewsleon Leon Press

Course Teaching Methodology:

Mode of Instruction:

The course will be based on the following teaching and learning activities:
· Lectures covering the theoretical part using PowerPoint presentations

		· Practical Class & Lab activities
Course Assignment/Quizzes /Presentation:		● Students are required to submit written assignments online in google classroom. ● Students will present different topics covering the latest trends and innovations on the Applications of information and communication technologies either individually or in a group. ● There will be multiple quizzes during the semester which can either be announced in advance or can be surprised.
Attendance Policy		As per the IMSciences policy students will not be allowed to sit in the final-Term exam if they fail to attend less than 75% of the total classes. Attendance will be marked after 15 minutes of the class starts. If a student comes into the class after 15 minutes, he/she may sit in the class, but their attendance will not be marked for that class. In case of emergencies or unavoidable circumstances students have to report me directly or e-mail.
General Policies and Behavioral Expectations:		During the class sessions students are expected to. ● Ensure timely arrival in class and remain present throughout the class session. ● Participate in class discussions and engage in any individual or group tasks. ● Adhere to institute attendance policy and general code of conduct. ● Maintain and update record of all class notes, handouts, and relevant materials. ● Adhere to basic principles of academic integrity with regards to exams and assignments ● Use the lab equipment properly and carefully. ● Students are not allowed to play games or use any offline/online application or other media (news, social media, movies etc.) in computer labs/classroom. ● Students must follow all the cyber laws and maintain other's privacy while working in computer labs

Grades to be Assigned

Grade	Marks (%)	Grade Points		Remarks
A+	91-100	4.0		Outstanding
A	87-90	4.0		Excellent
B+	80-86	3.5		Very Good
B	72-79	3.0		Good
C+	66-71	2.5		Satisfactory
C	60-65	2.0		Pass
F	Below 60	0		Fail

COURSE PLAN

LAB WORK

LAB NO #	Weekly Distribution of Course Contents	CLOS
Lab 1	**Exploring Computer Hardware Components** • Basic Computer Assembly and Disassembly	CLO-1
Lab 2	**OS Installation (Windows)** • Introduction to Windows • Windows Basic Configuration & Setup • User Accounts • Control Panel • Computer Management • Device Manager • Hostname	CLO-1
Lab 3	**Working with Windows CMD** • CMD Basic Commands: • dir, cd, mkdir, rmdir, copy, move, del, cls, exit etc...	CLO-1
Lab 4	**CMD Navigation:** • Using absolute and relative paths. • Navigating through directories. • Introduction to Batch Scripting • Creating a Batch Script	CLO-1

Lab 5	**Microsoft Word: I** • Text Basics: • Typing and editing text. • Font formatting (font style, size, color). • Paragraph formatting (alignment, line spacing, indentation). • Using the Clipboard (copy, cut, paste). • Document Formatting: • Page setup (margins, orientation, size). • Adding page numbers and headers/footers. • Creating and applying styles (e.g., Heading styles).	CLO-2
Lab 6	**Microsoft Word: II** • Working with Lists and Bullets • Inserting Objects • Creating and formatting tables. • Adding and editing table content. • Creating and formatting tables. • Adding and editing table content.	CLO-2
Lab 7	**MS PowerPoint: I** • Introduction to Microsoft PowerPoint • Creating Slides • Inserting Content • Text Formatting • Slide Transitions • Working with Objects	CLO-2

	• Grouping and ungrouping objects. • Arranging objects (bring forward, send backward). • Aligning and distributing objects. • Multimedia and Animation • Embedding videos and audio. • Adding animation to objects and text. • Custom animation effects.	
Lab 8-9-10	**MS Excel Fundamentals** • Entering & Editing Text Formulas • Working with Basic Excel Functions • Modifying Excel Sheets • Formatting Data in an Excel Sheet • Printing and Excel Sheet • Excel Data Validation • Importing and Exporting Data in Excel • Excel Conditional Functions	CLO-2
Lab 11-12-13	**Computer Network Basics** • Network Devices & Their Functions • Network Switches & Network Routers • Wireless Access Points • IP Addressing • Format of IP Address • Network ID & Host ID • Classes of IP Address	CLO-3

	• IP Address Assignment in Windows • Ping Tool • Building a small Network (LAN & WLAN)	
Lab 14-15-16	**File & Folder Sharing on Network** • Network Drives • Printer Installation and Printer Sharing • Remote Desktop Connection	CLO-3
Lab 17-18	**Introduction to the course** • Web development basics • Setting up a development environment • HTML Fundamentals • Creating the first web page • HTML structure • Headings, Paragraphs, Basic text formatting	CLO-4
Lab 19	**HTML Lists and Links** • Creating ordered and unordered lists • Creating hyperlinks.	CLO-4
Lab 20	**HTML Forms** • Creating forms • Input types (text, radio, checkbox) • Form attributes.	CLO-4
Lab 21-22	**CSS Fundamentals** • Introduction to CSS • Inline, Internal, and External CSS • Styling text and fonts.	CLO-4

	• CSS Box Model • Margin, Padding, Border, and understanding the box model	
Lab 23-24	**CSS Layout** • Introduction to layout techniques, including the display property and CSS grids. • CSS Positioning - Positioning elements using relative, absolute, fixed, and static positioning.	CLO-4
Lab 25	**Putting HTML & CSS All together** • Designing a 3 Column Layout	CLO-4
Lab 26-27	**JavaScript Basics** • Introduction to JavaScript • Fundamentals of JavaScript, variables, data types, and basic operators • JavaScript Functions and Control Structures - Writing functions, conditional statements, and loops. • Document Object Model (DOM) - Accessing and manipulating HTML elements using JavaScript.	CLO-4
Lab 28-29	**DOM Events - Handling user interactions and events in JavaScript.** • HTML Form Validation using JavaScript	CLO-4
Lab 30-31	**Web Development Project** • Students work on a small web project combining HTML, CSS, and JavaScript • Project Presentation and Review	CLO-4