

Course Title: Introduction to Web Technologies Course Code: BCA-DSC-1 (Maj)-101	
Course Outline	This is an introductory course that helps the students acquire the basic knowledge of Website development process.
Course Outcome	CO1: Get familiar with the terms related to World Wide Web. CO2: Use the front-end web site developing technologies like HTML and CSS CO3: Know about the basics of Java Script. CO4: Use Dreamweaver for creating Web Pages
Student Learning Outcomes	<ul style="list-style-type: none"> • On completion of this course, the students will be able to: Understand the concepts Web Pages and Website. • Acquire knowledge to create a basic website using HTML and CSS. • Capable to understand the validation concepts for the data entered in the form by user using Client-Side Script using Java Script • Able to work on GUI Web development tool Dreamweaver for creating and editing the website.
Course content/Syllabus	<p style="text-align: center;">As prescribed by Panjab University</p> <p style="text-align: center;">UNIT - I</p> <p>Basic Terminology: Web Server; Web Client/Browser, understanding how a Browser communicates with a Web Server, Website, Webpage, Static Website, Dynamic Website, Internet, Intranet, Extranet, WWW, URL</p> <p>HTML: Structure of an HTML program, Paragraph Breaks, Line Breaks; Emphasizing Material in a Web Page (Heading Styles, Drawing Lines); Text Styles (Bold, Italics, Underline); Other Text Effects (Centering (Text, Images etc.)</p> <p>Lists: Unordered List, Ordered Lists, Definition lists</p> <p>Adding Graphics to HTML Documents using the Border, Width, Height, Align, ALT Attributes</p> <p>Tables: Caption Tag, Width, Border, Cell padding, Cell spacing, BGCOLOR, COLSPAN and ROWSPAN Attributes.</p> <p style="text-align: center;">UNIT - II</p> <p>Linking Documents: Anchor tag, External Document References, Internal Document References and Image Maps</p> <p>Frames: Introduction to Frames: The <FRAMESET> tag, The <FRAME> tag, Targeting Named Frames</p> <p>Cascading Style Sheets (CSS): Style tag, Link tag, Types of CSS: In-Line, Internal, External</p> <p>Forms: Attributes of Form element, Input element, The Text Element, Password, Button, Submit Button, Reset Button, The Checkbox, Radio, TextArea, Select and Option.</p> <p style="text-align: center;">UNIT - III</p> <p>Java Script: Features, tokens, data types, variables, operations, control constructs, strings arrays, functions, core language objects, client-side objects, event handling. Applications related to client-side form validation.</p> <p>Other Built-In Objects in JavaScript: The String Object, The Math Object, The Date Object, User Defined Objects: Creating a User Defined Object, Instances, Objects within Objects.</p> <p style="text-align: center;">UNIT - IV</p>

	Creating Web Pages using Dreamweaver: Introduction to Dreamweaver, Understanding Workspace Layout, Managing Websites, creating a Website, Using Dreamweaver Templates, Adding New Web Pages, Text and Page Format, Inserting Tables, Lists, Images, Adding Links.
Required Text	<ol style="list-style-type: none"> 1. Wanger & Wyke: Java Script Unleashed, Pearson Education, New Delhi. 2. Bayross, Ivan: HTML, DHTML, Java Script by BPB, Latest reprint 3. Schildt, Herbert: The Complete Reference Java 2, TMH, Latest reprint 4. Joseph Lowery: Adobe Dreamweaver CS5 Bible Paperback
Suggested Text, readings and Materials	<ol style="list-style-type: none"> 1. Thomas Powell: HTML & CSS: The Complete Reference 2. John Pollock: JavaScript, A Beginner's Guide 3. Janine C. Warner: Dreamweaver CS5 For Dummies Paperback Edition 4. David Powers: The Essential Guide to Dreamweaver CS4
Pedagogy for Course Delivery	Lectures, Practical implementations, discussions, Assignments
Evaluation Criteria	5 marks will be internal assessment based on the Mid-Semester Test, Academic Activity (Seminar, Project & Assignments) and Attendance. 45 marks will be external assessment based on performance in examinations conducted by Panjab University.

Course Title: Practical Based on BCA-DSC-1 (Maj)-101 Course code: BCA-DSC-1 (Maj)-101 P	
Course Outline	This is an introductory course that helps the students acquire the practical knowledge of Website development process with different types of development tools and techniques.
Course Outcome	CO1: The objective of the paper is to build the practical skill for building and publishing the website using various tools – HTML, CSS, JavaScript, DHTML and Dreamweaver.
Student Learning Outcomes	<p>On completion of this course, the students will be able to:</p> <ul style="list-style-type: none"> • Design the simple Web Pages and Website with the help of HTML. • Student will be able to enhance the appearance of the web page and website using CSS and apply standardisation for appearance of the content on website. • Capable to validate the data entered in the form by user using Client-Side Script using Java Script • Able to create and edit the website using GUI Web development tool Dreamweaver
Course content/Syllabus	<p style="text-align: center;">As prescribed by Panjab University</p> <p style="text-align: center;">UNIT - I</p> <p>Basic Terminology: Web Server; Web Client/Browser, understanding how a Browser communicates with a Web Server, Website, Webpage, Static Website, Dynamic Website, Internet, Intranet, Extranet, WWW, URL</p> <p>HTML: Structure of an HTML program, Paragraph Breaks, Line Breaks; Emphasizing Material in a Web Page (Heading Styles, Drawing Lines); Text Styles (Bold, Italics, Underline); Other Text Effects Centering (Text, Images etc.)</p> <p>Lists: Unordered List, Ordered Lists, Definition lists</p> <p>Adding Graphics to HTML Documents using the Border, Width, Height, Align, ALT Attributes</p> <p>Tables: Caption Tag, Width, Border, Cell padding, Cell spacing, BGCOLOR, COLSPAN and ROWSPAN Attributes.</p> <p style="text-align: center;">UNIT - II</p> <p>Linking Documents: Anchor tag, External Document References, Internal Document References and Image Maps</p> <p>Frames: Introduction to Frames: The <FRAMESET> tag, The <FRAME> tag, Targeting Named Frames</p> <p>Cascading Style Sheets (CSS): Style tag, Link tag, Types of CSS: In-Line, Internal, External</p> <p>Forms: Attributes of Form element, Input element, The Text Element, Password, Button, Submit Button, Reset Button, The Checkbox, Radio, TextArea, Select and Option</p> <p style="text-align: center;">UNIT - III</p> <p>Java Script: Features, tokens, data types, variables, operations, control constructs, strings arrays, functions, core language objects, client-side objects, event handling. Applications related to client-side form validation.</p>

	<p>Other Built-In Objects in JavaScript: The String Object, The Math Object, The Date Object, User Defined Objects: Creating a User Defined Object, Instances, Objects within Objects.</p> <p style="text-align: center;">UNIT - IV</p> <p>Creating Web Pages using Dreamweaver: Introduction to Dreamweaver, Understanding Workspace Layout, Managing Websites, creating a Website, Using Dreamweaver Templates, Adding New Web Pages, Text and Page Format, Inserting Tables, Lists, Images, Adding Links.</p>
Required Text	<p>1 Wanger & Wyke: Java Script Unleashed, Pearson Education, New Delhi. 2 Bayross, Ivan: HTML, DHTML, Java Script by BPB, Latest reprint 3 Schildt , Herbert : The Complete Reference Java 2, TMH, Latest reprint 4 Joseph Lowery : Adobe Dreamweaver CS5 Bible Paperback Edition</p>
Suggested readings and Materials	<ul style="list-style-type: none"> • https://www.w3schools.com/html/html_examples.asp • https://www.cs.uct.ac.za/mit_notes/web_programming.html • https://www.thesitewizard.com/dreamweaver/dreamweaver-cs5-tutorial-1.shtml • https://www.w3resource.com/html/HTML-tutorials.php • https://www.w3resource.com/css/CSS-tutorials.php • https://www.w3resource.com/javascript/javascript.php
Pedagogy for Course Delivery	<p>Practical Demonstration of the various tools, Practical Lab assignments to cover the topics, Quiz</p>
Evaluation Criteria	<p>50 marks will be external assessment based on performance in practical examinations conducted by Panjab University.</p>

Course Title : Fundamentals of Mathematical Statistics Course Code: BCA-DSC-1 (Maj)-102	
Course Outline	To teach the students the basic techniques of Statistical analysis. After completing this course students will be able to solve various Financial, Scientific and Engineering fields' problems.
Course Outcome	On completion of this course, the students will be able to: CO1: Understand the Basic of Data Collection and Statistical CO1: Techniques CO2: Use and calculate various measures of central tendency, mean, median, mode, range, deviation. CO3: Understand the Basic of correlation, measuring techniques and its type. CO4: Gain an insight into regression analysis, its type and methods of calculation.
Student Learning Outcomes	1. Describe and discuss the key terminology, concepts tools, and techniques used in business statistical analysis. 2. Solve a range of problems using the techniques covered. 3. Conduct basic statistical analysis of data. 4. Enhance data-driven decision-making and analytical skills for computing and business contexts. 5. Interpret and assess relationships between variables through correlation analysis.
Course content/Syllabus	<p style="text-align: center;">As prescribed by Panjab University</p> <p style="text-align: center;">UNIT - I</p> <p>Basic Statistics: Types of Statistics, Different Statistical Techniques, Steps in Statistical Investigation, Uses and Limitations of statistics, Collection of Data: Sources of collecting primary and Secondary Data, limitations of Secondary Data, Criteria of evaluating secondary data, Organization of data, Graphs of Grouped Frequency Distribution, Tabulation of Data, Parts of Table</p> <p>Measures of Central Tendency: Kinds of measures of central tendency (statistical averages or averages):</p> <p>Arithmetic Mean: Simple Arithmetic Mean, Methods of calculating Simple Arithmetic Mean, Arithmetic Mean in case of Individual Series, Discrete series and continuous series, Weighted Arithmetic Mean, Combined Arithmetic Mean.</p> <p>Geometric Mean: Simple Geometric Mean, Methods of calculating Simple Geometric Mean, Geometric Mean in case of Individual Series, Discrete series and continuous series, Weighted Geometric Mean, Combined Geometric Mean.</p> <p>Harmonic Mean: Simple Harmonic Mean, Methods of calculating Simple Harmonic Mean, Harmonic Mean in case of Individual, Discrete series and continuous series, Weighted Harmonic Mean, Combined Harmonic Mean.</p> <p>UNIT – II</p> <p>Median: Methods of Calculating Median in case of Individual, Discrete series and continuous series Partition Value: Quartile, Quintiles, Hexiles, Septiles, Octiles, Deciles, Percentiles</p>

	<p>Mode: Methods of Calculating Mode in case of Individual Series, Discrete series and continuous series</p> <p>Range: Computation of Range, Inter Quartile Range, Computation of Inter Quartile Range, Percentile Range and Computation of Percentile Range. Mean Deviation, Computation of Mean Deviation, Standard Deviation, Calculation of Standard Deviation, Variance, Calculation of Standard Deviation for individual Series, Discrete Series and Continuous Series, Coefficient of Standard Deviation and coefficient of variation, Combined Standard Deviation, Correcting incorrect Standard Deviation.</p> <p style="text-align: center;">UNIT – III</p> <p>Correlation Analysis: Correlation Analysis: Definition, Types of Correlation: Positive, Negative, Simple, Multiple, Partial, Total, Linear and Non-Linear. Need of Correlation Analysis, Correlation and Causation, Techniques for Measuring Correlation: Scatter Diagram Method, Graphic Method, Karl Pearson’s Coefficient of Correlation: Correcting incorrect coefficient of correlation, calculating Karl Pearson’s coefficient of correlation in case of grouped series, Probable Error, Coefficient of Determination, Spearman’s coefficient of Correlation (Rank correlation): Calculation of Correct Coefficient of rank correlation, Difference between Rank Coefficient and Karl Pearson’s coefficient of coefficient, Coefficient of concurrent deviation.</p> <p style="text-align: center;">UNIT – IV</p> <p>Regression Analysis (Linear Regression): Definition, Difference between Correlation and Regression, Types of Regression Analysis: Simple, Multiple, Partial, Total, Linear and Non-Linear, Objectives of Regression Analysis, Methods of obtaining regression analysis: Regression Lines, Regression Equations. Methods of obtaining regression equations: Normal Equations and Regression Coefficient, Properties of Regression Coefficient, Standard Error of Estimate, Regression Coefficient in case of Grouped Data, Uses of Regression Analysis and Limitations of Regression Analysis.</p>
Required Text	Fundamentals of Mathematical Statistics by V.K. Global Publications
Suggested Text, readings and Materials	<ol style="list-style-type: none"> 1. Business Statistics by Mr. R. S. Bharadwaj, Excel Book. 2. Business Statistics by Richard Levin. 3. Business Statistics by Ken Black, Tata Macgraw Hill. 4. Schaum’s Series for problem practice. 5. Mathematical Statistics by Ray, Sharma, and Choudhary. 6. Business Statistics by V. K. Kapoor, S. Chand.
Pedagogy for Course Delivery	Using real-world examples and hands-on activities to make statistics relevant and engaging. Encourage active participation and critical thinking to deepen understanding.
Evaluation Criteria	<p>The Course-Level assessment includes continuous internal assessment having a weightage of 10 marks. These 10 Marks evaluated through mid-semester tests, classroom participation and assignments.</p> <p>90 marks will be external assessment based on performance in examinations conducted by Panjab University.</p>

Course Title: Problem Solving Through C Course code: BCA-DSC-1 (Min)-103	
Course Outline	The objective of this course is to make the student understand programming language concepts, mainly control structures, reading a set of data, stepwise refinement, function and arrays. After completion of this course, the student is expected to analyse the real-life problem and write programs in 'C' language to solve problems. The main emphasis of the course is on problem solving aspect.
Course Outcome	CO1: Express the logical flow used in Programming CO2: Design algorithms for solving various real-life problems CO3: Implement programme in C and introducing its various concepts
Student Learning Outcomes	1. After completion of the course student will be able to develop the logic for the real-life problem 2. Capable to design the algorithm and flow charts for the said problem. 3. Able to write the code of the C Language to solve a specific problem for which algorithm or follow chart developed
Course content/Syllabus	<p style="text-align: center;">As prescribed by Panjab University</p> <p style="text-align: center;">UNIT - I</p> <p>Programming Process: Steps in developing of a program, Data Flow Diagram, Algorithm development, Flowchart, Testing and Debugging.</p> <p>Fundamentals of C Languages: History of C, Character Set, Identifiers and Keywords, Constants, Types of C Constants, Rules for Constructing Integer, Real and character Constants, Variables, Data Types, rules for constructing variables.</p> <p>Operators and Expressions: C Instructions, Arithmetic operators, Relational operators, Logical operators, Assignment Operators, Type Conversion in Assignments, Hierarchy of Operations, Standard and Formatted Statements, Structure of a C program, Compilation and Execution.</p> <p style="text-align: center;">UNIT - II</p> <p>Decision Control Structure: Decision making with IF-statement, IF-Else and Nested IF Else, The else if Clause.</p> <p>Loop Control Structure: While and do-while, for loop and nested for loop</p> <p>Case Control Structure: Decision using switch, The goto statement.</p> <p>Functions: Library functions and user defined functions, Global and Local variables, Function Declaration, Calling and definition of function, Methods of parameter passing to functions, recursion, Storage Classes in C.</p> <p style="text-align: center;">UNIT - III</p> <p>Arrays: Introduction, Array declaration, Accessing values in an array, Initializing values in an array, Single and Two Dimensional Arrays, Initializing a 2-Dimensional Array, Memory Map of a 2-Dimensional Array, Passing array elements to a function: Call by value and call by reference, Arrays of characters, Insertion and deletion operations, Searching the elements in an array, Using matrices in arrays, Passing an Entire Array to a Function.</p>

	<p>Pointers: Pointer declaration, Address operator “&”, Indirection operator “*”, Pointer and arrays, Pointers and 2-Dimensional Arrays, Pointer to an Array, Passing 2-D array to a Function, Array of Pointers.</p> <p style="text-align: center;">UNIT - IV</p> <p>String Manipulation in C: Declaring and Initializing string variables, Reading and writing strings, String Handling functions (strlen(), strcpy(), strcmp(), strcat()).</p> <p>Structures and Unions: Declaration of structures, Structure Initialization, Accessing structure members, Arrays of structure, Nested structures, Structure with pointers, Union.</p> <p>Files in C: Introduction, Opening and Closing files, Basic I/O operation on files.</p>
Required Text	1. Yashavant P. Kanetkar: Let us C, BPB Publications, New Delhi.
Suggested Text, readings and Materials	<ol style="list-style-type: none"> 1. Salaria, R.S.: Test Your Skills in C, Salaria Publications, New Delhi. 2. C. Balaguruswami: Programming with C Language, Tata McGraw Hill, New Delhi. 3. Byron S. Gottfried: Programming in C, McGraw Hills Publishers, New York. 4. M.T. Somashekara: Programming in C, Prentice Hall of India
Pedagogy for Course Delivery	Interactive theory sessions, assignment and projects, discussions, Seminars, class presentation by groups of students, self-study sessions.
Evaluation Criteria	5 marks will be internal assessment based on the Mid-Semester Test, Academic Activity (Seminar, Project & Assignments) and Attendance. 45 marks will be external assessment based on performance in examinations conducted by Panjab University.

Course Title: Practical Based on BCA-DSC-1 (Min)-103 Course code: BCA-DSC-1 (Min)-103P	
Course Outline	The objective of this course is to enhance the skill of student using practical implementation of programming language concept and train the student to work on C Compiler. After completion of this course, the student is expected to analyse the real-life problem and write programs in 'C' language to solve problems. The main emphasis of the course is on problem solving aspect.
Course Outcome	CO1: Provide the training about the use of C Compiler for execution of the programme CO2: Implement and execute the programme in C with the use of various constructs of structured programming
Student Learning Outcomes	1. After completion of the course student will be able to execute the programme on C Compiler 2. Capable to Execute the programme with various types of constructs and able to test the developed programme with difference test cases.
Course content/Syllabus	<p style="text-align: center;">As prescribed by Panjab University</p> <p style="text-align: center;">UNIT - I</p> <p>Programming Process: Steps in developing of a program, Data Flow Diagram, Algorithm development, Flowchart, Testing and Debugging. Fundamentals of C Languages: History of C, Character Set, Identifiers and Keywords, Constants, Types of C Constants, Rules for Constructing Integer, Real and character Constants, Variables, Data Types, rules for constructing variables. Operators and Expressions: C Instructions, Arithmetic operators, Relational operators, Logical operators, Assignment Operators, Type Conversion in Assignments, Hierarchy of Operations, Standard and Formatted Statements, Structure of a C program, Compilation and Execution.</p> <p style="text-align: center;">UNIT - II</p> <p>Decision Control Structure: Decision making with IF-statement, IF-Else and Nested IF Else, The else if Clause. Loop Control Structure: While and do-while, for loop and nested for loop Case Control Structure: Decision using switch, The goto statement. Functions: Library functions and user defined functions, Global and Local variables, Function Declaration, Calling and definition of function, Methods of parameter passing to functions, recursion, Storage Classes in C.</p> <p style="text-align: center;">UNIT - III</p> <p>Arrays: Introduction, Array declaration, Accessing values in an array, Initializing values in an array, Single and Two Dimensional Arrays, Initializing a 2-Dimensional Array, Memory Map of a 2-Dimensional Array, Passing array elements to a function: Call by value and call by reference, Arrays of characters, Insertion and deletion operations, Searching the elements in an array, Using matrices in arrays, Passing an Entire Array to a Function.</p>

	<p>Pointers: Pointer declaration, Address operator “&”, Indirection operator “*”, Pointer and arrays, Pointers and 2-Dimensional Arrays, Pointer to an Array, Passing 2-D array to a Function, Array of Pointers.</p> <p style="text-align: center;">UNIT - IV</p> <p>String Manipulation in C: Declaring and Initializing string variables, Reading and writing strings, String Handling functions (strlen(), strcpy(), strcmp(), strcat()).</p> <p>Structures and Unions: Declaration of structures, Structure Initialization, Accessing structure members, Arrays of structure, Nested structures, Structure with pointers, Union.</p> <p>Files in C: Introduction, Opening and Closing files, Basic I/O operation on files.</p>
Required Text	1. Yashavant P. Kanetkar: Let us C, BPB Publications, New Delhi.
Suggested Text, readings and Materials	1. Salaria, R.S.: Test Your Skills in C, Salaria Publications, New Delhi.
Pedagogy for Course Delivery	Interactive Lab sessions and Demonstration, Practical assignment and projects.
Evaluation Criteria	50 marks will be external assessment based on performance in examinations conducted by Panjab University.

<p>Course Title: E-Commerce</p> <p>Course Code: CSA-MDC 101/201/301</p>	
Course Outline	The objective of this course is to understand the process of electronic commerce and familiarize students with the technology involved in it
Course Outcome	<p>CO1: Know about the Basic of E-commerce, its type, EDI, its structure and components</p> <p>CO2: Understand the basics of Web Based E-Commerce, Web Site Development and online promotion tools and techniques.</p> <p>CO3: Gain an insight into electronic payment systems, mobile commerce and various applications of e-commerce along with some case studies.</p>
Student Learning Outcomes	<p>On the successful completion of this course, the students should be able to</p> <ol style="list-style-type: none"> 1. Students will be able to define key concepts such as E-commerce and E-business, differentiate between them, and describe the challenges faced by traditional business systems. 2. Students will classify and explain different types of E-commerce, including B2B, B2C, C2C, B2G, G2H, and G2C, and discuss the operational and strategic benefits associated with each type. 3. Students will explain the components, benefits, and legal aspects of Electronic Data Interchange (EDI) and compare traditional document exchange with EDI-enabled systems. 4. Students will outline the steps involved in setting up an online business, including domain registration, website development, and hosting, while considering key online promotion tools and techniques. 5. Students will assess different electronic payment systems, such as E-cash, E-purses, and online third-party verified payments, and explain the functionality and benefits of these systems. 6. Students will define mobile commerce, discuss its benefits, and analyze the framework and issues associated with mobile commerce. 7. Students will explore real-world applications of E-commerce in sectors like retail, banking, and e-governance through case studies and analyze the impact of these technologies. 8. Students will identify types of cyber-crimes, understand the role of cyber forensics, and apply the legal frameworks, including the IT Act 2000, to address cyber-crimes in E-commerce.
Course content/Syllabus	<p style="text-align: center;">As prescribed by Panjab University.</p> <p style="text-align: center;">UNIT - I</p> <p>An Overview of E-Commerce: Definitions: E-commerce, E-business, difference between E-commerce and E-business, Problems with Traditional business systems, Aims of E-commerce, Types of E-commerce: B2B, B2C, C2C, B2G, G2H, G2C, Operational & Strategic benefits of E-commerce, Issues & Challenges in E-commerce.</p> <p>Electronic Data Interchange (EDI): Definition; Traditional versus EDI enabled system for document exchange; Components of EDI: EDI Standards, EDI Software, Communication Networks; EDI Message Structure; EDI Notification Structure; EDI in India; EDI enabled procurement process; Benefits of EDI: Direct Benefits, Strategic Benefits; EDI Implementation issues; Legal Aspects</p>

	<p style="text-align: center;">UNIT - II</p> <p>Web based E-Commerce: Definition; Need for web based business, Steps in setting up business on Internet: Selection & registration of domain name, Website development: Planning a website, Steps for creating a website, Elements of a webpage, web authoring tools, Hosting a website: Website hosting considerations.</p> <p>Online Promotion tools & techniques: Getting links to your site, banner advertisements & measuring advertisement effectiveness; Web Traffic Analysis: Hits, View pages, Visits and Other web-reporting tools, various measures, What is Search Engine optimization</p> <p style="text-align: center;">UNIT - III</p> <p>Electronic Payment Systems: E-cash: Purchasing & using of e-cash; Electronic Purses their loading with cash and use; E-cheque payment system; Online Third Party Verified Payment System through Credit & Debit Cards; ATM based cash disbursement system; Electronic Bill Payment System; Interbank clearing system.</p> <p style="text-align: center;">UNIT - IV</p> <p>Mobile Commerce: Definition, Benefits of Mobile Commerce, Issues in Mobile Commerce, Mobile Commerce Framework</p> <p>Applications of E-Commerce & Case Studies: Applications of e-commerce, Case studies in Retailing, Banking and e-governance; Cyber Crimes: Types, Cyber Forensics, Cyber crimes and IT Act - 2000</p> <p>Web Hosting: Understanding Domain Name & Web Space, Getting a Domain Name & Web Space (Purchase or Free), Uploading the Website to Remote Server, Introduction to Open Source Third party FTP Tools.</p>
Required Text	<ol style="list-style-type: none"> 1. Bhasker, Bharat: Electronic Commerce: Framework, Technologies and Applications; Tata McGraw- Hill. 2. Bajaj, Kamlesh & Nag, Debjani: E-Commerce-The Cutting Edge of Business; Tata McGraw- Hill. 3. Young, Margaret Levine : The Complete Reference: Internet; Tata McGraw Hill. 4. KalaKota, Ravi & Whinston, Andrew B.: Frontiers of Electronic Commerce; Addison Wesley..
Suggested Text, readings and Materials	<ol style="list-style-type: none"> 1. Stallings, William: Network Security Essentials: Applications & Standards; Pearson Education. 2. Minoli, Daniel & Minoli, Emma: Web Commerce Technology Handbook; Tata McGraw Hill. 3. Murthy CSV: e-Commerce: Concepts, Models, Strategies; Himalayas Publishing House. 4. Kosiur, David: Understanding E-Commerce; Microsoft Press
Pedagogy for Course delivery	Lectures, discussions, Assignment
Evaluation Criteria	75 marks will be an external assessment based on performance conducted by Panjab University.

Course Title: AEC–I: Language Skills: Listening and Speaking Course Code: AEC-1-101	
Course Outline	The subject aims at providing in-depth knowledge of grammar, structural English, effective writing, and how language varies over time, across social situations and social groups.
Course Outcome	<ol style="list-style-type: none"> 1. Creating an emotive association with the spirit of language. 2. To be proficient in articulating thoughts and communicating ideas in English language 3 To participate in debates and discussions where ideas are tested and sharpened and honing the skill of public speaking 4 Students should be able to hold meaningful conversations 5 Student should be able to effectively use English language to meet professional and personal goals.
Student Learning Outcomes	<ol style="list-style-type: none"> 1. Understanding of grammatical constructions. 2. Understanding of Language in various perspectives. 3. Developing the students' taste for writing good and correct English.
Course content/Syllabus	<p>As Prescribed by Panjab University</p> <p>Unit I: Sounds of English (Text: English Language Skills: A Practical Approach, Cambridge).</p> <p>Unit 2: Language Use in Various Situations (Text: English Language Skills: A Practical Approach, Cambridge).</p> <p>Unit 3: Art of Public Speaking (Text: Communication Skills by Sanjay Kumar & Pushp Lata. OUP 2023) a. Group Discussion b. Interview</p>
Required Text	<p>(Text: English Language Skills: A Practical Approach, Cambridge)</p> <p>(Text: Communication Skills by Sanjay Kumar & Pushp Lata. OUP 2023)</p>
Suggested Text, readings and Materials	<p>Fluency in English Part II, Oxford University Press.</p> <ul style="list-style-type: none"> • A Textbook of Phonetics for Indian Students, T. Balasubramian, Macmillan. • Business English, Pearson • Language, Literature and Creativity, Orient BlackSwan. • Language through Literature, Gauri Mishra, Ranjana Kaul, Brati Biswas (Eds), Primus Books. • English Communication, Macmillan Education. <ul style="list-style-type: none"> • Enrich Your English, S.R. Inthira and V. Saraswathi, Oxford University Press. • Communication and Language Skills, Sanghita Sen, et al, Cambridge University Press. • English and Communication Skills I, Tasneem Shahnaaz, C. Savitha and Cheryl Rao, Cambridge University Press. • Practical English, K.K. Singh, APH Publishing Corporation.
Pedagogy for Course Delivery	<ol style="list-style-type: none"> a) The paper requires 4 hours of practical per week during which students will be taught and explained the theory of communication through practical and hands-on training in various aspects of communication. b) The practical evaluation, which carries 15 marks, will be done by an external examiner either from the same institution/department or from outside.

Evaluation Criteria	05 marks will be internal assessment based on the Mid-Semester Test, Academic Activity (Seminar, Project & Assignments) and Attendance. Practical examination will be of 15 marks. 30 marks will be based on performance in examinations conducted by Panjab University.
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Course Title: Computer Fundamentals and Personal Computing Software Course code: CSA-SEC 101/201/301	
Course Outline	One can't imagine any economy without support of IT. There is now hardly any activity which is done without support of IT. The objective of this course is to familiarize students with complete Fundamentals and the packages commonly used in computing software.
Course Outcome	CO1: To understand the fundamental concepts of computer/information technology and its usage in the various field of business CO2: To enable the practical skill of basic computer operations CO3: To make the students able to understand the functionality of word processor, spreadsheet package CO4: To enable the student to develop business presentation using PowerPoint
Student Learning Outcomes	1. Student can identify the basic parts of computer and able to decide what type of computer should be used to fulfil the business needs. 2. Able to operate the computer and perform basic functions on computer using operating system and preinstalled Apps. 3. Can write resume, business letter electronically and also can create basic ads or posters etc. 4. Able to manage basic business data, perform calculation on data and graphically represent information electronically 5. Able to create attractive business presentation to promote business
Course content/Syllabus	<p style="text-align: center;">As prescribed by Panjab University</p> <p style="text-align: center;">UNIT - I</p> <p>Computer Appreciation: Introduction to computers, characteristics of computer; History of computers; Classification of computers on size: (Micro, Mini, Mainframe and super computers), Working Principles, Generations; Applications of computers; commonly used terms–Hardware, Software, Firmware. Basic Computer Organization: Block diagram of computer system, Input unit, Processing Unit and Output Unit; Description of Computer</p> <p>input devices: Keyboard, Mouse, Trackball, Pen, Touch screens, Scanner, Digital Camera</p> <p>Output devices: Monitors, Printers, Plotters.</p> <p>Computer Memory: Representation of information: BIT, BYTE, Memory, Memory size; Units of measurement of storage; Main memory: Storage evaluation criteria, main memory organization, RAM, ROM, PROM, EPROM; Secondary storage devices: Sequential Access Memory, Direct Access Memory Magnetic Tapes, Magnetic disks, Optical disks: CD, DVD; Memory storage devices: Flash Drive, Memory card; Types of software: System and Application software; Programming Languages: Generation of Languages; Translators - Interpreters, Compilers, Assemblers and their comparison.</p> <p style="text-align: center;">UNIT - II</p> <p>Understanding Operating System using DOS: Introduction to operating systems and its functions, DOS and versions of DOS, booting sequence; Warm and Cold Boot; Concepts of files and directories, redirecting command input and output using pipes, Wildcard characters, Types of DOS commands: Internal and External;</p>

Internal Commands: DIR, MD, CD, CLS, COPY, DATE, DEL, PATH, PROMPT, REN, RD, TIME, TYPE, VER, VOL

External Commands: XCOPY, ATTRIB, BACKUP, RESTORE, FIND, SYS, FORMAT, CHKDSK, DISKCOPY, LABEL, MOVE, TREE, DELTREE, DEFRAG, SCANDISK, UNDELETE. Batch Files: Introduction to simple batch files; Introduction to CONFIG.SYS and AUTOEXEC.BAT files.

Understanding Graphical User Interface using Windows: Fundamentals of Windows, Types of Windows, Anatomy of windows, Icons, Recycle bin, Operations on Folders, Registry of Windows: Basics, Editing; Control panel.

UNIT - III

Word Processing Package: Opening, saving and closing an existing document; renaming and deleting files; Using styles and templates: Introduction to templates and styles; applying, modifying and creating new (custom) styles; using a template to create a document, creating a template, editing a template, organizing templates, examples of style use, Changing document views, Moving quickly through a document, Working with text: select, cut, copy, paste, find and replace, inserting special characters, setting tab stops and indents, Checking spelling and Grammar, Autocorrect, Using built-in language tools, word completion, Auto text, Formatting text: Using Styles, formatting paragraphs, formatting characters, autoformatting, creating lists; Formatting pages: Using layout methods, creating headers and footers, Numbering pages, Changing page margins, Adding comments to a document, Creating a table of contents, Creating indexes and bibliographies, Printing a document, Using mail merge, Tracking changes to a document, Using fields, Linking to another part of a document, Using master documents, Creating fill-in forms.

UNIT - IV

Spreadsheet Package: Introduction to Spreadsheets, sheets and cells; Opening and saving spreadsheet files; Working with sheets: inserting new sheet, deleting and renaming sheets, Viewing a spreadsheet: freezing rows and columns, splitting screen, Entering data: cell referencing, formatting cells, entering numbers, entering numbers as text, entering formulae, entering date and time, deactivating automatic changes, Speeding up data entry: using fill tool, fill series, defining fill series, Validating cell contents, Formatting data: formatting text, numbers, cells, Auto formatting cells and sheets, defining new auto format, Using conditional formatting, Hiding and showing data, Sorting records, Printing a spreadsheet document: using print ranges, page formats, inserting page breaks, headers and footers; Working with Graphs and Charts : Creating Embedded Chart, formatting chart: Changing chart types, adding Titles, Legends and Gridlines, Printing Charts; Adding database functions: defining database ranges, sorting, filtering and grouping database ranges; Evaluating data: using DataPilot; Functions and Macros: using and editing existing macro, Creating Macros, Recording Macros, Running Macros.

	Presentation Packages: Basics of creating a presentation, Parts of main window, workspace views, creating a presentation, Incorporation of Animation.
Required Text	1. Basandra, S.K.: Computers Today, Galgotia.
Suggested Text, readings and Materials	<ol style="list-style-type: none"> 1. Sinha P.K. & Sinha Priti: Computer Fundamentals, BPB Publications 2. Mathur Rajiv, 1995: DOS 6.2 Quick Reference, Galgotia. 3. Authors Team: Getting Started with OpenOffice.org 3.3, Friends of OpenDocument 4. Singleton, Roderick G.: OpenOffice.org User Guide.
Pedagogy for Course Delivery	Interactive theory sessions, assignment and projects, Seminars, class presentation by groups of students, self-study sessions.
Evaluation Criteria	75 marks will be external assessment based on performance in examinations conducted by Panjab University.

Course Title: Punjabi Course code: PUN-COMPL-1 101	
Course Outline	<ul style="list-style-type: none"> • ਇਸ ਕੋਰਸ ਰਾਹੀਂ ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਬਾਰੇ ਗਿਆਨ ਪ੍ਰਾਪਤ ਕਰਨਗੇ। • ਇਸ ਕੋਰਸ ਰਾਹੀਂ ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਨਾਲ ਸੰਬੰਧਿਤ ਵਿਭਿੰਨ ਰਵਾਇਤਾਂ ਦਾ ਗਿਆਨ ਪ੍ਰਾਪਤ ਕਰਨਗੇ। • ਇਸ ਕੋਰਸ ਰਾਹੀਂ ਵਿਦਿਆਰਥੀ ਵਿਹਾਰਕ ਪੰਜਾਬੀ ਬਾਰੇ ਡੂੰਘਾਈ ਨਾਲ ਜਾਣ ਸਕਣਗੇ।
Student Learning Outcomes	<ul style="list-style-type: none"> • ਇਸ ਕੋਰਸ ਰਾਹੀਂ ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਸੰਬੰਧੀ ਭਰੋਸੇਯੋਗ ਸਮਝ ਪੈਦਾ ਕਰਨ ਦੇ ਸਮਰੱਥ ਹੋਣਗੇ। • ਇਸ ਅਧਿਐਨ ਰਾਹੀਂ ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਜਨ ਜੀਵਨ ਦੀਆਂ ਬਰੀਕੀਆਂ ਸਮਝ ਸਕਣਗੇ। • ਵਿਹਾਰਕ ਅਧਿਐਨ ਰਾਹੀਂ ਵਿਦਿਆਰਥੀ ਆਮ ਜੀਵਨ ਵਿਚ ਪੰਜਾਬੀ ਦੀ ਵਰਤੋਂ ਦੇ ਸਮਰੱਥ ਹੋ ਸਕਣਗੇ।
Course content/Syllabus	<p>Unit-I: ਪੁਸਤਕ:- ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ- ਲੇਖਕ ਡਾ. ਵਿਸ਼ਵਨਾਥ ਤਿਵਾੜੀ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪੰਜਾਬ ਯੂਨੀਵਰਸਿਟੀ ਚੰਡੀਗੜ੍ਹ</p> <p>(ੳ) ਕਿਸੇ ਇਕ ਨਿਬੰਧ ਦਾ ਵਿਸ਼ਾ ਵਸਤੂ ਅਤੇ ਸਾਰ (ਅ) ਨਿਬੰਧਾਂ ਵਿਚੋਂ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਨਾਲ ਸੰਬੰਧਿਤ ਪ੍ਰਸ਼ਨ (ੲ) ਪ੍ਰਸ਼ਨਾਂ ਦੱਸ ਕੇ ਵਿਆਖਿਆ ਕਰਨੀ</p> <p>Unit-II: ਵਿਹਾਰਕ ਪੰਜਾਬੀ</p> <p>(ੳ) ਤਕਨੀਕੀ ਸ਼ਬਦਾਵਲੀ-ਨਿਰਧਾਰਤ 50 ਸ਼ਬਦ (ਅ) ਅਖਾਣਾਂ ਦੀ ਵਾਕਾਂ ਵਿਚ ਵਰਤੋਂ (ੲ) ਚਿੱਠੀ ਪੱਤਰ- ਵਪਾਰਕ ਅਤੇ ਦਫ਼ਤਰੀ (ਸ) ਸੰਖੇਪ ਰਚਨਾ ਬਣਾਉਣੀ</p>
Required Text	ਲੋਕ ਸਭਿਆਚਾਰ, ਕ੍ਰਿਪਾਲ ਕਜ਼ਾਕ, ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ
Suggested Text, readings and Materials	ਸਭਿਆਚਾਰ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ, ਗੁਰਬਖ਼ਸ਼ ਸਿੰਘ ਫਰੈਂਕ, ਪੰਜਾਬੀ ਰਾਈਟਰਜ਼ ਕੋਅ-ਸੁਸਾਇਟੀ, ਲੁਧਿਆਣਾ ਪੰਜ-ਆਬ, ਭੁਪਿੰਦਰ ਸਿੰਘ ਖਹਿਰਾ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪੰਜਾਬ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ
Pedagogy for Course Delivery	Interactive theory sessions, assignment, self-study sessions.
Evaluation Criteria	50 marks will be external assessment based on performance in examinations conducted by Panjab University.

Course Title: History and Culture of Punjab Course code: HCP COMPL-1-101	
Course Outline	The paper will equip the students with the basic understanding of History Culture of Punjab.
Course Outcome	1.To familiarize the students with history and culture of Punjab under Harrapan and Vedic times. 2. To familiarize the students with devotional movements in ancient an medieval times. 3. To familiarize the students with emergence of Sikhism.
Student Learning Outcomes	1. Describe Harappan and Vedic socio-economic and religious life. 2. Explain the rise of Jainism, Buddhism, and the Bhakti movement in Punjab. 3. Understand Guru Nanak’s teachings and early Sikh institutions. 4. Trace key events in the transformation of Sikhism and the creation of Khalsa.
Course content/Syllabus	As prescribed by Panjab University UNIT I Harappan Civilization: extent and town planning and socio-economic life; Life in Vedic Age: socio-economic and religious, Growth and impact of Jainism and Buddhism in Panjab; Bhakti movement: Main features; prominent saints and their contribution. UNIT II Evolution of Sikhism: teaching of Guru Nanak; Institutional Development- Manji, Masand, Sangat and Pangat; Transformation of Sikhism: Martyrdom of Guru Arjan; New policy of Guru Hargobind, martyrdom of Guru Tegh Bahadur, Institution of Khalsa: New baptism; significance
Required Text	1. Joshi, L.M (ed.): History and Culture of the Punjab, Part-I, Publication Bureau, Punjabi University, Patiala, 1989 (3rd edn.)
Suggested Text, readings and Materials	1. Joshi, L.M and Singh, : History and Culture of the Punjab, Vol. I, Punjabi University, Fauja (ed.) Patiala, 1977 2. Prakash, Buddha : Glimpses of Ancient Punjab, P.U., Patiala, 1983 3. Thapar, Romila : A History of India, Vol. I, Penguin Books, 1966 4. Basham, A.L : The Wonder That was India, Rupa Books, Calcutta (18th rep.),1992
Pedagogy for Course Delivery	Interactive theory sessions, assignment, self-study sessions.
Evaluation Criteria	45 marks will be external assessment based on performance in examinations conducted by Panjab University.