**KUMAUN UNIVERSITY NAINITAL**

**DRAFT**

# National Education Policy-2020

## Common Minimum Syllabus for
## All Uttarakhand StateUniversities andColleges

## Fourth Year Undergraduate Programme(FYUP)

# SUBJECT: I.T.

## INFORMATION TECHNOLOGY DEPARTMENT

# EXPERT/SYLLABUS PREPARATION COMMITTEE

| S.N. | Name | Designation | Affiliation |
|---|---|---|---|
| 1 | Prof. M.C. Joshi | Professor & Convener | D.S.B.Campus, Kumaun University, Nainital |
| 2 | Prof. M.P. Thapliyal | Professor | H.N.B.Garwal Central University |
| 3. | Prof. Ashish Mehta | Professor | D.S.B.Campus, Kumaun University, Nainital |
| 3 | Prof. Ashutosh Bhatt | Professor | U.O.U. Haldwani |
| 4 | Dr. Parul Saxena | Assistant Prof. | S.S.J. University, Almora |
| 5 | Dr. Shikha Jain | Assistant Prof. | Kirori Mal College, University of Delhi |
| 6 | Dr. Umang Saini | Assistant Prof. | D.S.B.Campus, Kumaun University, Nainital |
| 7 | Dr. Vikram Bedi | Assistant Prof. (Contractual) | D.S.B.Campus, Kumaun University, Nainital |
| 8 | Dr. Neelam Joshi | Assistant Prof. (Contractual) | D.S.B.Campus, Kumaun University, Nainital |
| 9 | Dr. Prachi Joshi | Assistant Prof. (Contractual) | S.S.J. University, Almora |

## LIST OF ALL PAPERS (DSC and DSE) WITH SEMESTERWISE TITLES IN INFORMATION TECHNOLOGY

| YEAR | SEMESTER | COURSE | PAPER TITLE | THEORY/ PRACTICAL | CREDITS |
|---|---|---|---|---|---|
| *BACHELOR OF INFORMATION TECHNOLOGY WITH HONOURS* | | | | | |
| FOURTH YEAR | VII | I.T. DSC-7 | PROGRAMMING WITH PYTHON | THEORY | 4 |
| | | I.T. DSE-5 | DISCRETE MATHEMATICS | THEORY | 4 |
| | | I.T. DSE-6 | MANAGEMENT INFORMATION SYSTEM | THEORY | 4 |
| | | I.T. DSE-7 | PYTHON LAB | PRACTICAL | 4 |
| | | | ACADEMIC PROJECT/ ENTERPRENURESHIP | | 6 |
| | VIII | I.T. DSC-8 | ADVANCED WEB DESIGNING | THEORY | 4 |
| | | I.T. DSE-8 | RESEARCH METHODOLOGY | THEORY | 4 |
| | | I.T. DSE-9 | DATA WAREHOUSING AND DATA MINING | THEORY | 4 |
| | | I.T. DSE-10 | WEB DESIGNING WITH DHTML AND PHP | PRACTICAL | 4 |
| | | | ACADEMIC PROJECT/ ENTERPRENURESHIP | | 6 |

***Abbreviations:***

***DSC: Discipline Specific Course*** ***DSE: Discipline Specific Electives***

## Program Outcomes (POs) (Undergraduate Program)

- Students will have a firm foundation in the fundamentals and applications of Computer and its uses.
- Students will develop skills in problem solving and programming.
- Students will be able to explore new directions to pursue higher studies in computer education.
- Students will be able to contest and qualify different competitive exams where computer knowledge is essential.
- Students will be able to work as programmer, tester, and web designer etc.

## Program Specific Outcomes (PSOs) (Undergraduate Program)

- Develop a strong foundation in computer fundamentals, including hardware, software, and operating systems, enabling students to understand and operate various computing environments effectively.
- Gain proficiency in PYTHON programming and problem-solving techniques, allowing students to design, implement, and test algorithms to solve real-world problems.
- Gain expertise in discrete mathematics, enhancing the ability to organize, manage, and analyze data efficiently for optimized performance in computational tasks.
- Understand the web designing with advanced tools as DHTML and PHP
- Enhance research mythology skills, enabling students to conduct rigorous research and contribute to academy and industrial advancements.

**SEMESTER - VII**

**I.T. DSC-7:THEORY**

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisites of the course (if any) |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/Practice | | |
| I.T. DSC-7 | 04 | - | - | - | Bachelor in I.T. | Nil |

**BACHELOR OF INFORMATION TECHNOLOGY WITH HONOURS**

| FOURTH YEAR | SEMESTER: SEVENTH | COURSE:I.T.DSC-7 |
|---|---|---|

**SUBJECT:INFORMATION TECHNOLOGY**

**PAPERTITLE:PROGRAMMING WITH PYTHON(THEORY)**

**CREDITS: 4** | **NO OF LAB LECTURES:**

**Course Outcome:** Students will study Python programming language and Setting up path, working with Python, Basic Syntax, Variable and Data Types, Operator, Looping: For, While, Nested loops Control Statements: Break, Continue, and Pass etc.

| UNIT | TOPICS | NO OF LAB LECTURES |
|---|---|---|
| I | Introduction: History Features, Setting up path, working with Python, Basic Syntax, Variable and Data Types, Operator. | 12 |
| II | Conditional Statements: If, if- else, nested if-else<br>Looping: For, While, Nested loops<br>Control Statements: Break, Continue, and Pass. | 12 |
| III | String Manipulation: Accessing Strings, Basic Operations, String slices, Function and Methods<br>Tuple: Introduction, Accessing tuples, Operations, Working, Functions and Methods<br>Dictionaries: Introduction, Accessing values in dictionaries, working with dictionaries, Properties, Functions. | 12 |
| IV | Functions: Defining a function, calling a function, Types of functions, Function Arguments, Anonymous functions, Global and local variables.Modules: Importing module, Math module, Random module, Packages, Composition. | 12 |
| V | Input-Output: Printing on screen, Reading data from keyboard, Opening and closing file, Reading and writing files, Functions<br>Exception Handling: Exception, Exception Handling, except clause. Try-finally clause User Defined Exceptions. | 12 |

**SUGGESTED READINGS:**

The Complete Reference Python by Martin C. Brown

**Suggested Continuous Evaluation Methods:**

Assignment /Practical/ Viva Voce/ Test / Quiz (MCQ) / Seminar/ Presentations/ Research orientation ofstudents.Overall performance throughout the Semester (includes Attendance, Behaviour, Discipline andParticipationin Different Activities)

**SEMESTER - VII**

**I.T. DSE-5:THEORY**

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisites of the course (If any) |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/Practice | | |
| I.T. DSE-5 | 04 | - | - | - | Bachelor in I.T. | Nil |

| BACHELOR OF INFORMATION TECHNOLOGY WITH HONOURS | | |
|---|---|---|
| FOURTH YEAR | SEMESTER: SEVENTH | COURSE:I.T.DSE-5 |
| SUBJECT:INFORMATION TECHNOLOGY | | |
| PAPER TITLE:DISCRETE MATHEMATICS (THEORY) | | |
| CREDITS: 04 | NO OF LAB LECTURES: | |

**CourseOutcome:** By the end of this course, students should be able to demonstrate a strong understanding of fundamental mathematical concepts.Apply mathematical principles to solve problems related to I.T. Analyse and interpret mathematical models relevant to I.T. applications.

| UNIT | TOPICS | NO OF LAB LECTURES |
|---|---|---|
| I | Sets, Relations, and Functions :Set theory and operations, Relations and functions: properties and types, Equivalence relations and partitions. | 12 |
| II | Mathematical logic: Logic operators, Truth tables, Theory of inference and deduction, mathematical calculus, predicate calculus, predicates and qualifiers. | 12 |
| III | Basic of counting, permutation combination, circular permutation, power set, basic identities, partition and cross partition, pigeonhole principle, Pascal triangle, binomial theorem, n-Ary operation, semi group, homomorphism and isomorphism of semi groups, monoid, Addition, multiplication Modulo m & p, property and postulates of group, cosets. | 12 |
| IV | Lattices & Boolean Algebra: Axiomatic definition of Boolean algebra as algebra as algebraic structures with two operations, basic results truth values and truth tables, the algebra of propositional functions, Boolean algebra of truth tables. | 12 |
| V | Graph, definition, incidence and degree, order of graph, sub-graph, removal and addition of vertex and edge, operation of graphs complement and connect of graph, cycle, path, wheel, bipartite graph, isomorphism, forest and operation, tree, spanning tree, rooted tree, binary tree, height balance binary tree, planar graph, Eulers graph and Hamiltonian graph, digraph. | 12 |

**SUGGESTED READINGS:**

"Discrete Mathematics and Its Applications" by Kenneth H. Rosen.

"Linear Algebra and Its Applications" by David C. Lay

**Suggested Continuous Evaluation Methods:**

Assignment /Practical/ Viva Voce/ Test / Quiz (MCQ) / Seminar/ Presentations/ Research orientation ofstudents.Overall performance throughout the Semester (includes Attendance, Behaviour, Discipline andParticipationin Different Activities)

**SEMESTER - VII**

**I.T. DSE-6:THEORY**

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisites of the course (if any) |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/Practice | | |
| I.T. DSE-6 | 04 | - | - | - | Bachelor in I.T. | Nil |

| BACHELOR OF INFORMATION TECHNOLOGY WITH HONOURS | | |
|---|---|---|
| FOURTH YEAR | SEMESTER: SEVENTH | COURSE:I.T.DSE-6 |
| SUBJECT:INFORMATION TECHNOLOGY | | |
| PAPER TITLE:MANAGEMENT INFORMATION SYSTEM (THEORY) | | |
| CREDITS: 04 | NO OF LAB LECTURES: | |

**Course Outcome:** By the end of this course, students should be able to demonstrate a strong understanding of fundamental mathematical concepts. Apply mathematical principles to solve problems related to I.T. Analyse and interpret mathematical models relevant to I.T. applications.

| UNIT | TOPICS | NO OF LAB LECTURES |
|---|---|---|
| I | The meaning and role of MIS : What is MIS decision support systems, systems approach, the systems view of business, MIS organization within the company, Managers view of Information systems, Contemporary Approaches to information systems, How Information Systems Impact Organizations and Business Firms. | 12 |
| II | Conceptual system design: Define the problems, set system objectives, establish system constraints, determine information needs, determine information sources, develop alternative conceptual designs and select one, document the system concept, prepare the conceptual; design report. Organizing data and information: Datawarehouses , Datamart and datamining | 12 |
| III | Detailed system design: Inform and involve the organization, aim of detailed design, project management of MIS detailed design, identify dominant and trade off criteria, define the subsystems, sketch the detailed operating subsystems and information flows, determine the degree of automation of each operation, inform and involve the organization again, inputs, outputs ,and processing. | 12 |
| IV | Implementation, evaluation and maintenance of the MIS : Plan the implementation, acquire floor space and plan space layouts, organize for implementation, develop procedures for implementation, train the operating personnel, computer related acquisitions, develop forms for data collection and information dissemination, develop the files, test the system, cutover, document the system, evaluate the MIS, control and maintain the system. | 12 |
| V | Pitfalls in MIS development: Fundamental weaknesses, soft spots, in planning, design problems, implementation: the TAR PIT. Introduction to E-Commerce and E-Commerce challenges. An overview of ERP, Applications of information systems to business. Security and Ethical issues of information systems. | 12 |

**SUGGESTED READINGS:**MIS by Ramesh Behl, James A. O'Brein, George M. Marakas

**SEMESTER - VII**

**I.T. DSE-7:PRACTICAL**

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisites of the course (if any) |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/Practice | | |
| I.T. DSE-7 | 04 | - | - | - | Bachelor in I.T. | Nil |

| BACHELOROFINFORMATION TECHNOLOGY WITH HONORS | | |
|---|---|---|
| **FOURTH YEAR** | **SEMESTER: SEVENTH** | **COURSE:I.T.DSE-7** |
| **SUBJECT:INFORMATION TECHNOLOGY** | | |
| **PAPER TITLE:PYTHON LAB (PRACTICAL)** | | |
| **CREDITS: 04** | **NO OF LAB LECTURES:** | |

**Course Outcome:** Students will learn how to do programming with Python.

| UNIT | TOPICS | NO OF LAB LECTURES |
|---|---|---|
| I | Write a program to demonstrate different number data types in Python. | 5 |
| II | Write a program to perform different Arithmetic Operations on numbers in Python. | 5 |
| III | Write a program to perform different String Operations. | 5 |
| IV | Write programs to showcase the python time library. | 5 |
| V | Write a program to demonstrate working with lists in python. | 5 |
| VI | Write a program to demonstrate working with tuples in python. | 5 |
| VII | Write a program to demonstrate working with dictionaries in python. | 5 |
| VIII | Write programs to demonstrate the uses of functions | 5 |
| IX | Demonstrate the use of *args, **kwargs in python. | 5 |
| X | Write Programs to showcase use of lambda functions. | 5 |
| XI | Write a python program to define a module and import a specific function in that module to another program. | 5 |
| XII | Demonstrate Exception Handling features of Python<br>Demonstrate OOPs Capabilities of python language. | 5 |

**SUGGESTED READINGS:**The Complete Reference Python by Martin C. Brown

**SEMESTER - VIII**

**I.T. DSC-8:THEORY**

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisites of the course (if any) |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/Practice | | |
| I.T. DSC-8 | 04 | - | - | - | Bachelor in I.T. | Nil |

| BACHELOROFINFORMATION TECHNOLOGY WITH HONORS | | |
|---|---|---|
| FOURTH YEAR | SEMESTER: EIGHTH | COURSE:I.T.DSC-8 |

**SUBJECT:INFORMATION TECHNOLOGY**

**PAPER TITLE: ADVANCED WEB DESIGNING (THEORY)**

**CREDITS: 04** | **NO OF LAB LECTURES:**

**CourseOutcome:** By the end of this course, students should be able to understand the structure and components of a web page using HTML and PHP.

| UNIT | TOPICS | NO OF LAB LECTURES |
|---|---|---|
| I | Introduction to World Wide Web and its work, Web Browsers, Search Engine, Downloading, Hyper Text Transfer Protocol (HTTP), URL, Web Servers, FTP, Web publishing- Domain Name Registration, Space on Host Server for Web Site, Maintain and Updating. | 12 |
| II | HTML: Elements of HTML & Syntax, Comments, Headings, Paragraph, Span, Pre Tags, Backgrounds, Formatting tags, Images, Hyperlinks, div tag, List Type and its Tags, Table Layout, div,Frames, Use of Forms in Web Pages. Introduction to Java Scripts, Objects in Java Script, and Dynamic HTML with Java Script. | 12 |
| III | CSS**:** Introduction to Cascading Style Sheets, Types of Style Sheets (Inline, Internal and External), using Id and Classes, CSS properties: Background Properties, Box Model Properties, Margin, Padding, List and BorderProperties. | 12 |
| IV | Programming in PHP: server side scripting language, HTML Embedding, comment, variables, basic data types, operators, Control Structures, Functions, passing variables between pages using URL, cookies and sessions, sending from data to the server. | 12 |
| V | Database programming with PHP: Syntax, Connecting to the Database inserting, deleting and editing records to/from the database, fetching from Database, Using tables to display data, saving HTML from data to database. | 12 |

**SUGGESTED READINGS:**A handbook on web development by A Jashnani

**Suggested Equivalent Online Courses:**SWAYAM,MOOCS,https://vidyamitra.inflibnet.ac.in

**SEMESTER - VIII**

**I.T. DSE-8:THEORY**

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisites of the course (if any) |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/Practice | | |
| I.T. DSE-8 | 04 | - | - | - | Bachelor in I.T. | Nil |

| BACHELOR OF INFORMATION TECHNOLOGY | | |
|---|---|---|
| **FOURTH YEAR** | **SEMESTER: EIGHT** | **COURSE:I.T.DSE-8** |
| **SUBJECT:INFORMATION TECHNOLOGY** | | |
| **PAPER TITLE:RESEARCH METHODOLOGY (THEORY)** | | |
| **CREDITS: 04** | **NO OF LAB LECTURES:** | |

**Course Outcome:** By the end of this course, students should be able to demonstrate a strong understanding of networking concepts.

| UNIT | TOPICS | NO OF LAB LECTURES |
|---|---|---|
| I | Research – types, selection and formulation of research Problem – research Design. Analytical study of Statistical Method, Historical Research. Statistics as a tool of research, Methods and demerits of statistics. Surveys, types of research methods, Case Study, Sampling types and Methods. Historical Method and Scientific Method. Characteristic Features of Scientific Method; Empirical Verifiable, Cumulative, Self - Correcting, Deterministic. Ethical and Ideological neutrality (Value Free), Statistical Generalizability. | 12 |
| II | Collection, Objectives and Classification of Data, Types of data presentation. Data Interpretation, Primary, Secondary and Tertiary Data. Data organization in SPSS & Excel, Computer and Content Analysis. Discussion and Interpretation of results. Testing of Hypothesis: Logical and Statistical Techniques. | 12 |
| III | Locating Information on a Topic of Interest, Acquiring Copies of Articles of Interest. The Nature of Scientific Variables, Conceptual Versus Operational Definitions of Variables. Levels of Measurement, Various Paradigms.<br>The Basic Format for a Research Report, Identification of the Parts of a Research Report. Citation and Referencing Styles. Essentials of Report Writing, Aids for Writing Good Research Report. | 12 |

- **SUGGESTED READINGS:** Research Methodology: Techniques and Applications by K. Hanumantha Rao
- Bagchi, Kanak Kanti (2007) Research Methodology in Social Sciences: A Practical Guide, Delhi, Abijeet Publications.

**Suggested Equivalent Online Courses:**SWAYAM,MOOCS,https://vidyamitra.inflibnet.ac.in

## SEMESTER - VIII

## I.T. DSE-9: THEORY

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisites of the course (if any) |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/Practice | | |
| I.T. DSE-9 | 04 | - | - | - | Bachelor in I.T. | Nil |

| BACHELOR OF INFORMATION TECHNOLOGY | | |
|---|---|---|
| FOURTH YEAR | SEMESTER: EIGHT | COURSE:I.T.DSE-9 |

**SUBJECT:INFORMATION TECHNOLOGY**

**PAPER TITLE: DATA WAREHOUSING AND DATA MINING(THEORY)**

**CREDITS: 04** | **NO OF LAB LECTURES:**

**Course Outcome:** By the end of this course, students should be able to understand the various concepts of data warehousing and data mining.

| UNIT | TOPICS | NO OF LAB LECTURES |
|---|---|---|
| I | Introduction: Fundamentals of data mining, Data Mining Functionalities, Classification of Data Mining systems, Data Mining Task Primitives, Integration of a Data Mining System with a Database or a Data Warehouse, System, Major issues in Data Mining.Data Preprocessing: Need for Preprocessing the Data, Data cleaning, Date Integration and Transformation, Data Reduction, Discretization and Concept Hierarchy Generation. | 12 |
| II | Data Warehouse and OLAP Technology for Data Mining, Data Warehouse, Multidimensional Data Model, Data Warehouse Architecture, Data Warehouse Implementation, Further Development of Data Cube Technology, From Data Warehousing to Data Mining. | 12 |
| III | Mining Frequent Patterns, Associations and Correlations: Basic Concepts, Efficient and Scalable Frequent item set Mining Methods, Mining various kinds of Association Rules, From Association Mining to Correlation Analysis, Constraint-Based Association Mining.Classification and Prediction: Issues Classification and Prediction | 12 |
| IV | Cluster Analysis Introduction: Types of Data in Cluster Analysis, A Categorization of Major Clustering Methods, Partitioning Methods, Hierarchical Methods, Density-Based Methods, Grid-Based Methods, Model-Based Clustering Methods | 12 |
| V | Mining Object, Spatial, Multimedia, Text and Web Data: Multidimensional Analysis and Descriptive Mining of Complex Data Objects, Spatial Data Mining, Multimedia Data Mining and Text Mining. | 12 |

**SUGGESTED READINGS:** Data mining Concepts and Techniques by Jiawei Han, Micheling Kamber, Jian Pei

**Suggested Equivalent Online Courses:**SWAYAM,MOOCS,https://vidyamitra.inflibnet.ac.in

**SEMESTER - VIII**

**I.T. DSE-10: PRACTICAL**

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisites ofthecourse (ifany) |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/Practice | | |
| I.T. DSE-10 | 04 | - | - | - | Bachelor in I.T. | Nil |

| BACHELOR OF INFORMATION TECHNOLOGY | | |
|---|---|---|
| **FOURTH YEAR** | **SEMESTER: EIGHT** | **COURSE:I.T.DSE-10** |
| **SUBJECT:INFORMATION TECHNOLOGY** | | |
| **PAPER TITLE: WEB DESIGNING WITH DHTML AND PHP LAB(PRACTICAL)** | | |
| **CREDITS: 04** | **NO OF LAB LECTURES:** | |

**Course Outcome:** By the end of this course, students should be able to create the various web sites.

| UNIT | TOPICS | NO OF LAB LECTURES |
|---|---|---|
| I | Create a personal profile web page.<br>Design a table displaying student marks.<br>Create a registration form using basic form elements. | 12 |
| II | Apply CSS styles to a profile page.<br>Design a responsive layout for a basic webpage.<br>Create a styled navigation menu using <ul> and CSS. | 12 |
| III | Create a PHP script to process a registration form.<br>Develop a program to calculate factorial, prime check, etc.<br>Form validation using PHP. | 12 |
| IV | Create a feedback form that stores data in a .txt file.<br>User login system with sessions.<br>File upload form with validations. | 12 |
| V | Create a Student Management System using PHP and MySQL.<br>Design a login page that validates credentials from a database.<br>Display all student records from the database in an HTML table. | 12 |

**SUGGESTED READINGS:**A handbook on web development by A Jashnani

**Suggested Equivalent Online Courses:**SWAYAM,MOOCS,https://vidyamitra.inflibnet.ac.in

# List of General Electives (GE) Papers for VII and VIII Semester

| LIST OF ALL PAPERS (GE) WITH SEMESTER WISE TITLES IN INFORMATION TECHNOLOGY | | | | | |
|---|---|---|---|---|---|
| **YEAR** | **SEMESTER** | **COURSE** | **PAPER TITLE** | **THEORY/ PRACTICAL** | **CREDITS** |
| ***BACHELOR OF INFORMATION TECHNOLOGY WITH HONOURS*** | | | | | |
| **FOURTH YEAR** | **VII** | **I.T. GE -7** | **E- COMMERCE** | **THEORY** | **4** |
| | **VIII** | **I.T. GE -8** | **GREEN COMPUTING** | **THEORY** | **4** |

**SEMESTER - VII**

**I.T. GE-7:THEORY**

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisites of the course (if any) |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/Practice | | |
| I.T. GE-7 | 04 | - | - | - | Bachelor in I.T. | Nil |

**BACHELOR OF INFORMATION TECHNOLOGY WITH HONOURS**

| FOURTH YEAR | SEMESTER: SEVENTH | COURSE:I.T.GE-7 |
|---|---|---|

**SUBJECT:INFORMATION TECHNOLOGY**

**PAPER TITLE: E- COMMERCE**

**CREDITS: 04** | **NO OF LAB LECTURES:**

| UNIT | TOPICS | NO OF LAB LECTURES |
|---|---|---|
| I | Introduction, Electronic Commerce Framework, the Anatomy of E- Commerce applications, E-Commerce Consumer applications, E-Commerce organization applications. | 10 |
| II | Consumer Oriented Applications, mercantile process models, mercantile models from the consumer's perspective, Mercantile from the merchant's perspective. | 10 |
| III | Types of Electronic Payment Systems, Digital Token-Based Electronic Payment Systems, Smart Cards & Electronic Payment Systems, Credit Card-Based Electronic Payment Systems, Risk & Electronic Payment Systems, Designing Electronic Payment Systems. | 10 |
| IV | Electronic Data Interchange, EDI Applications in Business, EDI implementation, MIME, and value added networks. Intra organizational E-Commerce, Macro forces and Internal Commerce, Work flow automation and Coordination, Customization and Internal Commerce, Supply Chain Management (SCM). | 10 |
| V | Making a business case for a Document Library, Digital document types, Corporate Data warehouses, Advertising and Marketing, the new age of Information Based Marketing, Advertising on Internet, charting the Online marketing process, Market Research. | 10 |
| VI | Multimedia and Digital video, Key Multimedia concepts, Digital Video & Electronic Commerce, Desktop Video Processing, Desktop Video Conferencing. | 10 |

**SUGGESTED READINGS:** E- Commerce by P.T. Joseph, S.J.

**SEMESTER - VIII**

**I.T. GE-8:THEORY**

## CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisites of the course (if any) |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/Practice | | |
| I.T. GE-8 | 04 | - | - | - | Bachelor in I.T. | Nil |

| BACHELOR OF INFORMATION TECHNOLOGY WITH HONORS | | |
|---|---|---|
| FOURTH YEAR | SEMESTER: EIGHT | COURSE:I.T.GE-8 |
| SUBJECT:INFORMATION TECHNOLOGY | | |
| PAPER TITLE: GREEN COMPUTING | | |
| CREDITS: 04 | NO OF LAB LECTURES: | |

| UNIT | TOPICS | NO OF LAB LECTURES |
|---|---|---|
| I | Overview and Issues: Problems: Toxins, Power Consumption, Equipment Disposal, Company's Carbon Footprint: Measuring, Details, reasons to bother, Plan for the Future, Cost Savings: Hardware, Power.<br>Initiatives and Standards: Global Initiatives: United Nations, Basel Action Network, Basel Convention, North America: The United States, Canada, Australia, Europe, WEEE Directive, RoHS, National Adoption, Asia: Japan, China, Korea. | 12 |
| II | **Minimizing Power Usage:** Power Problems, Monitoring Power Usage, Servers, Low-Cost Options, Reducing Power Use, Data De-Duplication, Virtualization, PCs, Linux, Components, Servers, Computer Settings, Storage, Monitors, Power Supplies, Wireless Devices, Software.**Cooling:** Cooling Costs, Power Cost, Causes of Cost, Calculating Cooling Needs, Reducing Cooling Costs, Economizers, On-Demand Cooling, HP's Solution, Heat Datacentre Design, Centralized Control, Design for Your Needs, Put Everything Together | 12 |
| III | Changing the Way of Work: Old Behaviours, starting at the Top, Process Reengineering with Green in Mind, Analysing the Global Impact of Local Actions, Steps: Water, Recycling, Energy, Pollutants, Going Paperless, Changing Over, Paperless Billing, Handheld Computers vs. the Clipboard, Unified Communications, Intranets, What to Include, Building an Intranet, Microsoft Office SharePoint Server 2007, Electronic Data Interchange (EDI), Nuts and Bolts, Value Added Networks, Advantages, Obstacles. | 12 |
| IV | Recycling: Problems, China, Africa, Materials, Means of Disposal, Recycling, Refurbishing, Make the Decision, Life Cycle, from beginning to end, Life, Cost, Green Design, Recycling Companies, Finding the Best One, Checklist, Certifications, Hard Drive Recycling, Consequences, cleaning a Hard Drive, Pros and cons of each method, CDs and DVDs, good and bad about CD and DVDs disposal, Change the mind-set, David vs. America Online | 12 |
| V | Greening Your Information Systems: Initial Improvement Calculations, Selecting Metrics, Tracking Progress, Change Business Processes, Customer Interaction, Paper Reduction, Green Supply Chain, Improve Technology Infrastructure, Reduce PCs and Servers, Shared Services, Hardware Costs, Cooling. | 12 |

**SUGGESTED READINGS:** Innovative Computing for Green Technologies

**Suggested Equivalent Online Courses:**SWAYAM,MOOCS,https://vidyamitra.inflibnet.ac.in