

Subject Name	L	T	P	Credits
Environmental Studies	3	1	-	4

Course Objectives:

- To give students an understanding of how science and the scientific method work to address environmental problems.
- The student will become familiar with the Earth's major systems (ecosystems), how they function and how they are affected by human activity (population growth, air, water and soil pollution, ozone depletion, global warming, solid waste disposal).
- Students will learn about the interaction of human society (urban sprawl, energy use/generation, resource consumption and economics) with the Earth's systems.

Unit I

Introduction: Domestic and Global Environmental concerns, principles of sustainable development, Sustainable agriculture, organic farming, bio-fuels, Threats for sustainability.

Unit II

Environmental Ethics & Legislations: Enforcement of Environment laws in India – The water act, The Air (Prevention and Control of Pollution) Act, 1981, The Environment (Protection) Act, 1986, Environmental Auditing, value education – HIV/AIDS- Women and child welfare.

Unit III

Environmental Pollution: Air Pollution – sources, types of air pollutants, National Ambient Air Quality Standards, Controlling Air Pollution. Water pollution – sources, types of water pollutants, water quality indicators, water quality standards. Soil Pollution - types of soil pollutants: industrial wastes, pesticides ,fertilizers and manures, salination of soil, Controlling Soil Pollution. Noise: Sources of noise pollution Measurements of noise and indices, effect of metrological parameters on noise propagation, Noise exposure levels and Standards. Noise control and battement measures. Impact of noise on human health.

Unit IV

Environmental Challenges: Local Challenges - Solid Waste – Impact of solid waste on natural resources, Deforestation; Global Challenges - climate change and global warming, Kyoto Protocol Greenhouse Gases, Ways to reduce Greenhouse gases emissions, Carbon Footprint, ways to reduce carbon footprint, Carbon Trading.

Unit V

Sustainable habitat, industrialization and urbanization: Concept of Green Building, Volatile Organic Compounds (VOC), GRIHA Rating, LEED Rating, HVAC, Hybrid Car Technology, Industrial ecology, India's renewable energy capacity. *Green Technology & Green Business:* Green Business, Green Computing, E-waste management.

Reference Books:

1. R. Rajagopalan, Environmental Studies, Oxford IBH Pub, 2011.
2. Kogent Learning Solutions Inc., Energy, Environment, Ecology and Society, Dreamtech, 2012.
3. Rag, R. L, Ramesh, Lekshmi Dinachandran, Introduction to sustainable engineering.

Course Outcomes

- This course is designed to give a basic understanding of the Earth's life-supporting, ecological systems and the threats to those systems.
- To acquire knowledge of the origin and functioning of the natural system and its correlation with the living world
- To develop an awareness of the need and responsibility to keep the natural system in a condition that it sustains life.
- To develop sensitivity in personal attitudes to environmental issues.
- To develop an understanding of how local environment contributes to the global environment.

Subject Name	L	T	P	Credit
Business Foundations	3	1	-	4

Course Objectives:

- To study Basics of marketing
- To study Financial accounting
- To study Operation Management
- To study Personnel Management
- Study of Entrepreneurship meaning and elements

Unit I

Marketing Basics: Meaning, nature and scope of marketing. Marketing segmentation, targeting and positioning. Concept of marketing mix – Product, price, place & promotion.

Unit II

Introduction to Financial accounting: Meaning, nature and concept of accounting. Rule of debit and credit. Trading, P&L, and balance sheet. Financial analysis and reporting.

Unit III

Operation Management: Meaning, nature & scope of operation management. Relationship with other functional areas. Just in time approach of operation management. New product design and process.

Unit IV

Personnel Management: Meaning, scope and concept of personnel management. Role of Personnel manager in organization. Human resource planning.

Unit V

Entrepreneurship: Meaning, elements, determinants and importance of entrepreneurship. Mobilizing resources for start-ups & basic start up problems.

Reference Books:

1. Desai, Vasant. Dynamics of Entrepreneurial Development and Management. Mumbai, Himalaya Publishing House.
2. Kuratko and Rao, Entrepreneurship: A South Asian Perspective, Cengage Learning.
3. Kotler, Philip, Gary Armstrong, Prafulla Agnihotri and Ehsanul Haque. Principles of Marketing. 13th edition. Pearson Education.
4. Michael, J. Etzel, Bruce J. Walker, William J Stanton and Ajay Pandit. Marketing: Concepts and Cases. (Special Indian Edition), McGraw Hill Education
5. S. N. Maheshwari, and. S. K. Maheshwari. Financial Accounting. Vikas Publishing House, New Delhi.
6. Tulsian, P.C. Financial Accounting, Pearson Education Ivancevich, John M. Human Resource Management. McGraw Hill.
7. Wreather and Davis. Human Resource Management. Pearson Education.

8. Production and Operations Management, by K. Aswathappa and K Shridhara Bhat, HPH
9. Production and Operation Management, Evercrtt Adam Jy. Ronald, Ebert, PHI

Course Outcomes:

- Basics of marketing, meaning, nature scope.
- Financial accounting Meaning, nature and concept.
- Operation Management Meaning, nature & scope.
- Personnel Management Meaning, scope and concept.
- Entrepreneurship: Meaning, elements, determinants and importance.



Mandsaur University

Subject Name	L	T	P	Credits
Database Concepts & RDBMS	3	1	4	6

Course Objectives:

- To describe a sound introduction to the discipline of database management systems.
- To give a good formal foundation on the relational model of data and usage of Relational Algebra.
- To introduce the concepts of basic SQL as a universal Database language.
- To enhance knowledge to advanced SQL & PL/SQL topics
- To demonstrate the principles behind systematic database design approaches by covering conceptual design, logical design through normalization.

Unit I

Introduction to DBMS: Basic concepts, Comparison between DBMS & Conventional file system, Role of DBMS, Advantages and Disadvantages of DBMS, Schema and Instance, Data Independence, Database Languages, Database Administrator, Database Users, Architecture of DBMS, Applications of DBMS, **Data Models:** Entity Relationship model, Elements–Entities, Attributes, Relationships, Key, Type of Keys, ER Diagram, Various data models.

Unit II

Relational Data models: Basic terminology of relational model, Kinds of relation, Relational database, DBMS v/s RDBMS, Relational algebra, Relational calculus, Functional & Additional operations, Functional dependencies, Multivalued dependencies, Normalization, Types of normalizations.

Unit III

Database Integrity: Definition, Transaction, ACID properties, Transaction state, Concurrency, Concurrency control, Recovery, Distributed database, Data storage, Data Warehousing and Mining, Introduction to oracle and its tools, Client/Server computing.

Unit IV

Introduction to SQL: Characteristics of SQL, Basic structure, Data types, SQL Commands, Data Definition Language (DDL), Data Manipulation Language (DML), Data Control Language (DCL), SQL Operators - Arithmetic Operator, Logical Operators, Pattern Matching, Data Constraints, Different Clauses, Joins.

Unit V

PL/SQL: Indexes, Views, Granting & Revoking permissions, PL/SQL-Block structure, Variables, Constants, Controls & Loops, Transactions- Commit & Rollback, Locks, Error handling in PL/SQL, Procedure & Functions, Database Triggers.

Reference Books:

1. Database System Concepts, Silberschatz Korth, Sudarshan, MH
2. Ullman, "principles of database systems", (2nd ed. Galgotia, 1984).
3. Naveen Prakash, Introduction to database management", TMH, 1993.
4. Ivan Bayross, SQL, PL/SQL "The Programming Language of Oracle" (2nd Revised ed.), BPB Publications

Course Outcomes:

- Explain the features of database management systems and Relational database.
- Design conceptual models of a database using ER modeling for real life applications and also construct queries in Relational Algebra.
- Create RDBMS with constraints and keys, using SQL.
- Retrieve any type of information from a data base by formulating complex queries in SQL.
- Analyze the existing design of a database schema and apply concepts of normalization to design an optimal database.
- Build indexing mechanisms for efficient retrieval of information from a database.

List of Experiments

1. To implement the DDL,DML and DCL commands in RDBMS.
2. Create table for student information like name, age, add, phone, class, college.
3. Insert data into tables using both types of insert commands.
4. Add another column into database using modify command.
5. Select particular type of data using select command like, functions .
6. Run commands like DROP table, ROLLBACK, EDIT, DESC, / .
7. Apply nested Queries by joining two tables & select particular data item from both tables.
8. Arrange columns data items in ascending or descending order.
9. Join tables using join command.
10. create customer table with following fields- cust_id, cust_name, cust_add, city, state and insert 10 record and apply the following constraints *NOTNULL, *PRIMARY KEY ,*unique.

11. Apply the Where clause on client(cid, cname, salary, cadd, city, state) table with
1.select 2.delete 3. To insert data into some other table.
12. Write a PL/SQL block to display whether the given number is odd or even.
13. Write a PL/SQL block to display LJIET 10 times using for loop.
14. Write a PL/SQL block using cursor to update salary of a given programmer by 25%.
15. Write a PL/SQL block to display addition of all the numbers in the given range
16. Write a PL/SQL block to display the detail about given employee from EMP table.
17. Write a PL/SQL block to find the salary of a given employee and raise his salary by 20%.
18. Create trigger on Supplier Detail on update or insert of Scity to convert first letter of scity into capital letter.

Subject Name	L	T	P	Credits
Programming in Python	3	1	4	6

Course Objectives:

- To get Familiar with Python environment, data types, operators used in Python.
- To learn about module and packages.
- To learn modular programming
- To understand sequences in Python.
- To learn numpy module in python.

Unit-I

Introduction, Origin, Comparison, Comments, Operators and operator precedence, Data types and variables, Command line argument, Data input, if Statement, while Loop, for Loop and the range().

Unit-II

Module: Import module using import statement, Use from... import statement, Use from ... import * statement, Math Module, Random Module, While loop, For loop, Break & continue, Else clause. **Packages:** Installing packages using PIP, constructing and distributing packages, packages vs. directories, the role of the __init__.py file.

Unit-III

Function: Define a function, Pass arguments, Arguments with default values, Arbitrary arguments, Local and global variables Return a value from function, yield, none keywords, Return multiple values, Documentation Strings

Unit-IV

Lists and Tuple: Introduction to List and Tuple, Accessing List and Tuple, Operations, working with List and Tuple, Function and Methods. Dictionaries: Working with dictionaries, properties and functions, working with Strings.

Unit-V

Numpy: Introduction, Data Types, Array, Array Indexing, Array Slicing, Array concatenation, Array Manipulation Linear Algebra functions, Mathematical Functions, random numbers, Arithmetic Operations, Statistical Functions, Matplotlib, Histogram Using Matplotlib, I/O with NumPy.

Reference Books:

- “Head First Python 2e: A Brain-Friendly Guide” by Paul Barry.
- “Introduction to Machine Learning with Python: A Guide for Data Scientists” by Andreas C. Müller & Sarah Guido
- Python in a Nutshell, A. Martelli, A. Ravenscroft, S. Holden, OREILLY.



Course Outcomes:

- Student will learn fundamentals of python.
- Student will learn about inbuilt module and using modules.
- Student will understand modular programming in python.
- Student will understand sequences in python.
- Student will learn numpy module.

Subject Name	L	T	P	Credits
Advance Web Designing Lab	-	-	8	4

Course Objectives:

- To learn Advanced HTML Concepts.
- To learn HTML 5 Tags.
- To introduce CSS.
- Introduction to Bootstrap.
- Introduction to JavaScript.

Unit-I

HTML: Nested Lists: list within list with order and unordered list, Insert Links- Linking to another Document, Internal Links, Email Links, Relative and Absolute Links, Insert Images- Clickable Images, Image Placement and Alignment, Image Size, Image margins, Image Formats, Image Maps- Defining an Image Map. **Frame:** Create Windows, Single Window Frames, Creating Column, Creating Row Frames.

Unit-II

HTML5: Overview of HTML5, features of HTML5, Syntax of HTML5, Understanding the HTML5 Doctype, **HTML5 Tags:** section, article, header, footer, nav, abbr, address, blockquote, mark, optgroup, output, code, meter, audio, video, figure, figcaption, legend, datalist. meta tag, attribute of meta tag, **input tag:** color, date, time, datetime-local, month, week, email, number, range, search, div tag, attribute of div tag.

Unit-III

Style Sheets: Introduction to CSS, basic syntax and structure using CSS, **Type of CSS:** Inline CSS, Internal CSS and External CSS. properties of CSS: background images, colors, manipulating texts, borders and boxes, margins, padding using CSS, Create Divs with ID and Class.

Unit-IV

CSS3: Overview of media query, features of CSS3, basic syntax and structure, Coding structure for media query.

Bootstrap: Overview of Bootstrap, need of Bootstrap, features of Bootstrap, Working with Bootstrap: Navigation Bar, Slider, Accordion etc.

Unit-V

JavaScript: Overview of JavaScript, need of JavaScript, features of JavaScript, coding structure with JavaScript, variables, functions, conditions, loops, pop up boxes, type of pop up box.

Website implementation using HTML, CSS, Bootstrap and JavaScript.

Reference Books:

1. HTML and Web designing - Kris Jamsa and Konrad King

2. Web Technology - N.P. Goplan, J.Akilandeswari
3. Internet Technology and Web Design - ISRD Group

Course Outcomes:

- Student will be able to work with images and frames.
- Student will understand HTML 5 Tags.
- Student will be able to work with CSS.
- Student will be able to develop website using Bootstrap.
- Student will be able to apply JavaScript and validations.

List of Experiments

1. Create a web page to describe introduction of Mandsaur University.
2. Create a link on Wi-Fi and LAN word. When you click on this word then go to the Wikipedia site.
3. Create a web page for event Gallery of Mandsaur University.
4. Create a nested list, which is simply add a new list within a parent list just like following output:



- 5.
6. Create a web page for registration with basic information using HTML5 and CSS.
7. Create a web page for user login using CSS.
8. Create a web page for student schema using table tag.
9. Create a web page for user registration using table with CSS.
10. Create a web page for responsive user registration using media query.
11. Create a web page for horizontal menu using Bootstrap framework.



12. Create a web page for image slider using Bootstrap framework.
13. Create a JavaScript popup box on your web page.
14. Create a web page which is turn on and turn off light (bulb) with help of java script.
15. Write a program for arithmetic operation using java script.
16. Write a web page when we click on “hide” button then text should be hide and when we click on “show” button then text should be show.
17. Create a webpage for personal information with JavaScript form validation.
18. Develop a static website with help of HTML, CSS/Bootstrap framework and JavaScript.

Subject Name	L	T	P	Credit
Bridge Course – II (Mathematics)	3	1	-	4*

Unit I

Sets, Relation's and Functions: Set; Cartesian product of sets; Relations; Functions; Binary operations. **Trigonometrical Functions :** Angles; Circular functions or Trigonometrical functions; Trigonometrical identities; Cosine of the difference of two angles; Tables of trigonometric functions; Graphs of trigonometrical functions; Conditional identities involving the angles of triangles; Trigonometric Equations.

Unit II

Cartesian System of Rectangular Coordinates: Cartesian Coordinate system The number plane; Distance formula; Area of triangle; Section formula; Slope of Line; Locus- and equations. **Straight Line :** Find the equation of a straight line parallel to an axis; The point-slope form; Two point form; intercept form; Slope-intercept form; Normal form; Symmetric form; General form; Angle between two lines; condition for concurrency of three straight lines. **Family of Lines :** Equation of family of lines; Pair of straight lines through origin; Angle between the pair of straight lines Angles between two lines.

Unit III

Circle and Family of Circle: Standard form of the equation of a circle General form of the equation of a circle; Equation of a curve in parametric form. Equation of a circle when the end points of a diameter are given: Point of intersection of a line and a circle with centre at origin condition of Tangency; Equation of a tangent to a circle and length of the tangent; Families of circles through the intersection of two circles; Condition for two intersecting circles to be orthogonal.

Unit IV

Complex Numbers : The algebra of complex numbers; The Argand Diagram and the Polar form; Polar representation ; Powers and Roots of Complex numbers. **Quadratic Equations :** Solution of quadratic equations; Symmetric functions of roots, Graph of a quadratic polynomial; Applications. **Inverse trigonometric functions:** Inverse trigonometric functions; Properties of inverse trigonometric functions.

Unit V

Sequences and Series: Sequences; Arithmetic progression (A.P.) Examples of A.P. and insertion of Arithmetic means; Geometric Progression (G.P.); Sum to infinity of a G.P., Arithmetic – geometric sequence; Sum to n terms of special Sequences. **Binomial Theorem:** The Binomial Theorem; Some applications of Binomial theorem, Binomial theorem for any index. **Exponential and Logarithmic Series:** Exponential Series; Logarithmic Series.

Reference Books:

1. Mathematics by M. S. Rangachari.

MANDSAUR UNIVERSITY



Subject Name	L	T	P	CREDIT
Information and Communication Technology-2	-	-	2	0

Course Objectives:-

The course is designed to aim at imparting a basic level programme for students. After completing the course students will be able to use computer technology.

Contents:

Unit-1

Introduction to Internet, WWW and Web Browsers:

Basic of Computer networks; LAN, WAN; Concept of Internet; Applications of Internet; connecting to internet; What is ISP; Knowing the Internet; Basics of internet connectivity related troubleshooting, World Wide Web; Web Browsing softwares, Search Engines; Understanding URL; Domain name; IP Address; Using e-governance website

ERP for various works:

Filling examination form , View Academic History , Submit Fee ,View Results

Unit-2

Communications and collaboration:

Basics of electronic mail; Getting an email account; Sending and receiving emails; Accessing sent emails; Using Emails; Document collaboration; Instant Messaging.






Email Etiquette:

Use a Professional Email Address , Use a Formal Salutation , Lead With a Clear Subject Line , Be Clear, Polite, and Succinct , Sign Off with a Thank You , Boost Your Image with a Strong Email Signature .

Unit-3

Google Drive:

What is Google Drive? , Creating files on Google Drive,Uploading existing office files on Google Drive. Make PDF with Google Drive.

-  Documents: For composing letters, flyers, essays, and other text-based files (similar to Microsoft Word documents)
-  Spreadsheets: For storing and organizing information (similar to Microsoft Excel workbooks)
-  Presentations: For creating slideshows (similar to Microsoft PowerPoint presentations)
-  Forms: For Quiz,collecting and organizing data
-  Drawings: For creating simple vector graphics or diagrams

Unit-4

Making Small Presentation:

Basics of presentation software; Creating Presentation; Preparation and Presentation of Slides; Slide Show; Taking printouts of presentation / handouts.

Course Outcome:-

At the end of course, students will be able to

1. Understand the basics of the internet.
2. Understand basic internet vocabulary
3. Create email id.
4. Send an email in a professional way.
5. Create documents in google drive.
6. Create good presentations.

Activities:

SN	Activity
1.	Difference between LAN , WAN and MAN
2.	Practice browsing of different sites using search engine

3.	Practice and understand different e-mail services – outlook, yahoo mail, rediffmail etc
4.	Practice creating e-mail accounts, sending, receiving & storing of mails.
5.	<ol style="list-style-type: none"> 1. Basic operations of power point, create ppt and inset and delete slides 2. Create project presentations, lecture presentations. 3. Apply basic formatting features in presentation like font, font size, font colour, text fill, spacing and line spacing formatting text boxes, word arts, styles bullet and numbering 4. Working with drawing tools, applying shape or picture styles, applying object borders, object fill, object effects. 5. Working with video, link to video and sound files. 6. Creating hyperlinks, using action buttons
6.	Create google doc , Spreadsheets and share with other users.
7.	Create quiz in google form