

B.Sc. Information Technology Management				
Semester	Course (Paper)	Course Name	Credit	Total Marks
Semester I	ITM-MJ-1.1.1 Theory	Data Structure using C	4	70 (10 Mid+10 CE+50 End)
	ITM-MJ-1.1.1 Practical	Data Structure using C		30 (10 Mid + 20 End)
	ITM-MJ-1.1.2 Theory	Operating Systems	4	70 (10 Mid+10 CE+50 End)
	ITM-MJ-1.1.2 Practical	Operating Systems		30 (10 Mid + 20 End)
	ITM-MI-1.1.1 Theory (For students of other subjects except B.Sc. Computer Sc., DSM & BCA)	Database Management Systems	4	70 (10 Mid+10 CE+50 End)
	ITM-MI-1.1.1 Practical	Database Management Systems		30 (10 Mid + 20 End)
	ITM-MDC-1.1.1 (For students of other subjects except B.Sc. Comp. Sc., DSM & BCA)	Math For Computer Science	3	100
	AEC-1.1.1 (Ability Enhancement Course)	MIL (Odia/Hindi/Sanskrit/Urdu)	4	100
	VAC-1.1.1 (Value Added Course)	Environmental Studies & Disaster Management)	3	100
TOTAL CREDITS			22	

Semester-I

Core I (PAPER-1)

Data structure Using C

Course Objectives:

The course is designed to provide complete knowledge of C language and its use in data structure. Students will be able to develop logics which will help them to write programs C. Also, by learning the basic programming constructs they can easily switch over to any other programming languages in future. It strengthens the ability of the students to identify and apply the suitable data structure for the given real-world problems. It enables them to gain knowledge in practical applications of data structures.

Course Outcome:

On completion of this course, the students will be able to

- Learn various elements of C language including data types, Operators, expressions, decision making implementation in programs.
- Write complex programs using arrays, structure, pointer & functions.
- Know the concept of stack, queue, linked list to represent data in various ways to solve real time applications.
- Search and sort the data using various searching and sorting methods.

Unit-I:

Introduction: Introduction to Programming Language, Character sets, Keywords & Identifiers, Constants, Variables, Input and Output statements (Formatted and Unformatted), Data types and modifiers, Types of Operators, Precedence and associativity of operators.

Control statements (Simple IF Statement, IF...ELSE, Nested IF...ELSE, IF...ELSE...IF Ladder), Switch Statement. Looping: Do...WHILE, WHILE and FOR Loop. Array Concept (1D and 2D Array).

Outcome: Students will be able to understand the basics of C language to write programs and to store the data using array.

Unit-II:

Pointers and its types, Pointer arithmetic, Array of Pointers, Pointer to pointer. Storage classes. Functions: Types, Function Calls, Recursion, String, Structure, Self-Referential Structure, Array of Structures, Union.

Outcome: Students will be able to understand the use of Pointers in data structures, can learn the reusability of codes through functions, can be able to write complex programs in C.

Unit-III:

Dynamic Memory allocation (calloc, malloc, realloc &, free). **Stack:** Definition, Representation, Stack operations, Applications (Infix– Prefix– Postfix Conversion & Evaluation). **Queues:** Definition, Representation, queue operations & Applications. **Linked Lists:** Definition, Types (Single and Doubly Linked List), representation, and Linked list insertion and deletion operations.

Outcome: Students will be aware of data arrangements and accessing those data for various real-time applications.

Unit-IV:

Trees: Tree Terminologies, Binary Tree, Representation, Binary search Tree, Traversing BST, Operations on BST, Heap Tree (max-Heap & Min-Heap). Sorting: Bubble Sort, Insertion Sort, Selection Sort, Quick Sort. Searching: Linear Search, Binary Search.

Outcome: Students will be able to search and sort the data and will come to know about the arrangements of data in a hierarchical manner.

Text Books:

- E. Balagurusamy, "Programming in ANSIC",4/e, (TMH)
- Classic Data Structure, P. Samanta, PHI,2/ed

Reference Books:

- B. Kernighan & Dennis Ritchie, "The C Programming Language",2/ePHI
- Paul Deitel, Harvey Deitel, "C: How to Program",8/prentice Hall.
- P.C. Sethi,P.K. Behera, "Programming using C",Kalyani Publisher,Ludhiana
- Ellis Horowitz, Sartaj Sahni, "Fundamentals of Data Structures", Galgotia Publications, 2000.
- Sastry C.V.,Nayak , R,Ch. Rajaramesh, Data Structure & Algorithms, I.K. International Publishing House Pvt .Ltd, New Delhi.

Practical

Tutorial C & Data Structure Lab Write C'

- Basic programs in C language.
- Programs using conditional statements (if. else, else if ladder, nested if, switch case)
- Programs using various loops
- Programs using 1D, 2D and multidimensional array.
- Program based on pointers.
- Programs using functions, recursion and strings.
- Programs based on structure and union.
- Programs on command line arguments.
- To search an element and print the total time of occurrence in the array.
- To delete all occurrence of an element in an array.
- Array implementation of Stack.
- Array implementation of Linear Queue.
- To implement linear linked list and perform different operations such as node insert and delete, search of an item, reverse the list.
- To implement double linked list and perform different operations such as node insert and delete.
- Linked list implementation of Stack.
- Linked list implementation of Queue.
- To implement a Binary Search Tree.
- To perform binary search operation.
- Bubble sort, Insertion sort, Selection sort, Quicksort.

Core-I (PAPER-2)

Operating Systems

Course Objectives:

This course has two components: a theory component to teach you the concepts and principles that underlie modern operating systems, and a practice component to relate theoretical principles with operating system implementation. In the theory component, you will learn about processes and processor management, concurrency and synchronization, memory management schemes, file system and secondary storage management, security and protection, etc.

Course Outcome: On completion of this course, students will be able to

- Understand the different services provided by Operating System at different level.
- Learn real life applications of Operating System in every field.
- Understand the use of different process scheduling algorithm and synchronization techniques to avoid deadlock.
- Learn different memory management techniques like paging, segmentation and demand paging etc.

Unit-I:

Introduction to Operating System, System Structures: Operating system services, system calls, system programs, Operating system design and implementation, Operating system structure.

Outcome: Students will be able to know the basic components and services of operating system.

Unit-II:

Process Management: Process Concept, Operations on processes, Process scheduling and algorithms, Inter-process Communication, Concepts on Thread and Process, Deadlocks: Deadlock detection, deadlock prevention and deadlock avoidance fundamentals.

Outcome: Students will be able to discuss various scheduling algorithms and know the concept of deadlock.

Unit-III:

Memory Management Strategies: Swapping, Contiguous Memory Allocation, Paging, Segmentation, Virtual Memory Management: Concepts, implementation (Demand Paging), Page Replacement, Thrashing.

Outcome: Students will be able to comprehend how an operating system virtualizes CPU and memory.

Unit-IV:

Storage Management: File System concept, Access Methods, File System Mounting, File Sharing and File Protection, Implementing File Systems, Kernel I/O Systems.

Outcome: Students will be able to understand the functionality of file systems.

Text Books:

- *Operating System Concepts, Abraham Silberschatz, Peter B. Galvin, and Greg Gagne, Eighth Edition, WileyStudentEdition2009.*

Reference Books:

- *Modern Operating System, Tanenbaum, Pearson,4/Ed.2014.*
- *Richard F Ashley, Linux with Operating System Concepts, Chapman and Hall/CRC Published, August 26, 2014.*
- *Richard Blum, Linux Command Line and Shell Scripting Bible, O' Reilly.*

Core II- Operating Systems Lab

- Write a program (using *fork()* and/or *exec()* commands) where parent and child execute: same program, same code. same program, different code. Before terminating, the parent waits for the child to finish its task.
- Write a program to report behavior of Linux kernel including kernel version, CPU type and model. (CPU information)
- Write a program to report behavior of Linux kernel including information on configured memory, amount of free and used memory. (memory information)
- Write a program to print file details including owner access permissions, file access time, where file name is given as argument.
- Write a program to copy files using system calls.
- Write a program using C to implement FCFS scheduling algorithm.
- Write a program using C to implement Round Robin scheduling algorithm.
- Write a program using C to implement SJF scheduling algorithm.
- Write a program using C to implement non-preemptive priority-based scheduling algorithm.
- Write a program using C to implement preemptive priority-based scheduling algorithm.
- Write a program using C to implement SRTF scheduling algorithm.
- Write a program using C to implement first-fit, best-fit and worst-fit allocation strategies.

MDC-1.1.1 (THEORY)

Mathematics for Computer Science

UNIT-I

Linear Algebra: Matrices and determinants, Systems of linear equations (Gaussian Elimination), Vector spaces, Linear independence, Basis, Dimension, Eigenvalues, Eigenvectors. Divisibility, GCD, LCM, Modular arithmetic. Prime Numbers, Euclidian algorithms.

UNIT-II

Probability & Statistics: Sample space, Events, Conditional Probability, Bayes' theorem. Random variables: Discrete and Continuous. Probability distributions: Binomial, Poisson & Normal. Expectations, Variance, covariance, Correlation, Introduction to Hypothesis testing & Confidence intervals.

UNIT-III

Graph Theory: Definition, Types (Simple, Directed, Weighted, Bipartite), Matrix Representation of Graphs, Degree, Path, Cycle, Connectivity. Operations on Graphs, Planner graph, Euler's formula. Connected Graphs: Eulerian and Hamiltonian Graphs. Trees: Definition, Spanning trees, binary trees, Complete binary tree. Graph Traversal: BFS, DFS.

UNIT-IV

Combinatory & Counting: Permutations, Combinations, Pigeonhole Principle, Inclusion-Exclusion principle, Recurrence Relations (Linear, Homogeneous & Particular Solutions). Boolean algebra: Basics of Boolean algebra, Laws and rules of Boolean algebra, Demorgan's theorems and numerical examples. Introduction to Logic gates.

Text Book:

- Eric Lehman, F. Thomson Leighton, & Alerty R. Meyer Google and M
- Discrete Mathematics and Its Applications by Kenneth Rosen

Reference Books:

- Advanced Engineering Mathematics by Erwin Kreyszig.
- Discrete and Combinatorial Mathematics by Grimaldi.

AEC-1.1.1

MIL (Odia/Hindi/Sanskrit/Urdu)

ପ୍ରଥମ ପର୍ଯ୍ୟାୟ (SEMESTER-I) ସାମର୍ଥ୍ୟବର୍ଦ୍ଧକ ପାଠ୍ୟକ୍ରମ Ability Enhancement Course (AEC) ପରିଶୁଦ୍ଧ ଭାଷା ଓ ଲିଖନ ଧାରା

Course Outcome (ପାଠ୍ୟପତ୍ର ଫଳଶ୍ରୁତି):

ସାହିତ୍ୟର ଶିଖଣ ଓ ଅଧ୍ୟୟନ କ୍ଷେତ୍ରରେ ଭାଷାର ପରିଶୁଦ୍ଧତା ନିବାରଣ ଆବଶ୍ୟକ । ସାହିତ୍ୟକର୍ମ ବ୍ୟତିତେକ ଦିର୍ଦ୍ଧିତକ୍ଷେତ୍ରରେ ନିର୍ଭୁଲଭାଷା ବ୍ୟବହାର କେବା ବାଞ୍ଛନୀୟ । ଭାରତର ସମ୍ବିଧାନସ୍ୱାଭୂତ ଭାଷାମାନଙ୍କ ମଧ୍ୟରେ ଓଡ଼ିଆଭାଷାର ସ୍ଥାନ ସ୍ୱତ୍ୱପୂର୍ଣ୍ଣ । ଶିକ୍ଷାର୍ଥୀମାନେ ନିର୍ଭୁଲ ଭାଷା ପ୍ରୟୋଗକ୍ଷେତ୍ରରେ କିପରି ସମର୍ଥ ହେବେ, ସେଥିନିମିତ୍ତ ଏହି ପାଠ୍ୟପତ୍ରଟି ପରିଚାଳିତ । ବିଭିନ୍ନ ପ୍ରତିଯୋଗିତାମୂଳକ ତଥା ପ୍ରାଣୀସୈଦ୍ଧିକ ସେବାମୂଳକ ନିୟୁତ କେବାପାଇଁ ସମ୍ବୁଦ୍ଧାନ ହେଉଥିବା ପରୀକ୍ଷାନିମିତ୍ତ ମଧ୍ୟ ଏହା ଶିକ୍ଷାର୍ଥୀକୁ ସାହାଯ୍ୟ କରିବ ।

Unit wise Learning Outcome (ପ୍ରତି ଏକକର ଅଧ୍ୟୟନ ଫଳଶ୍ରୁତି):

- ୧ମ ଏକକ: କ) ଶବ୍ଦ ଗଠନରେ ଶୁଦ୍ଧତା
ଖ) ଦୁର୍ଦ୍ଧିତ ଅର୍ଥ ଓ ପ୍ରୟୋଗ ବିଧି
ଗ) ଦୁର୍ଦ୍ଧିତ ପ୍ରୟୋଗବିଧି ଶିକ୍ଷା
- ୨ୟ ଏକକ: କ) ବାକ୍ୟର ଗଠନରୀତି ଶିକ୍ଷା
ଖ) ବିବିଧ ପ୍ରକାର ବାକ୍ୟ ସମ୍ବନ୍ଧରେ ଧାରଣା
ଗ) ନିର୍ଭୁଲ ବାକ୍ୟଲିଖନ ବିଦ୍ୟା
- ୩ୟ ଏକକ: କ) ଦୂରତ୍ୱ ଅନୁଲେପକୁ ସଂକ୍ଷିପ୍ତ କରିବାର କୌଶଳ
ଖ) ବିଷୟଗତ ଶୀର୍ଷକ ନିର୍ଦ୍ଧାରଣ କଳା
ଗ) ଅନୁଲେପରୁ ବିଭିନ୍ନ ପ୍ରଶ୍ନର ଉତ୍ତର ପ୍ରଦାନ
- ୪ର୍ଥ ଏକକ: କ) ସମଲିଖନ ଜ୍ଞାନ
ଖ) ଫିଟର ପ୍ରସ୍ତୁତି
ଗ) ନିର୍ଭୁଲ ପଠନଲିଖନ ଓ ବିଜ୍ଞାପନ ପ୍ରସ୍ତୁତି କଳା

ପାଠ୍ୟ ବିଷୟ

ପ୍ରଥମ ଏକକ: (କ) ଶବ୍ଦର ସଂଜ୍ଞା, ଶୁଦ୍ଧ ଶବ୍ଦ ଓ ବର୍ଣ୍ଣଶୁଦ୍ଧି

(ଖ) ଦୁର୍ଦ୍ଧିତ ଅର୍ଥ ଓ ପ୍ରୟୋଗ ବିଧି

ଦ୍ୱିତୀୟ ଏକକ: ବାକ୍ୟ ଗଠନରୀତି ଓ ପ୍ରକାର ଭେଦ

ତୃତୀୟ ଏକକ: ଅନୁଲେପ ସଂକ୍ଷେପଣ, ଶୀର୍ଷକ ନିର୍ଦ୍ଧାରଣ ଓ ପ୍ରସ୍ତୋଭର

ଚତୁର୍ଥ ଏକକ: ନିର୍ଭୁଲ ଲିଖନ ପଦ୍ଧତି, ସମ ଲିଖନ, ଫିଟର, ପତ୍ର ଲିଖନ, ବିଜ୍ଞାପନ ପ୍ରସ୍ତୁତି

ସହାୟକ ପୁସ୍ତକ (Book of reference) :

- ୧. ସର୍ବସାର ବ୍ୟାକରଣ - ଶ୍ରୀଧର ଦାସ, ଗ୍ରନ୍ଥ ମନ୍ଦିର, କଟକ ।
- ୨. ସାରସ୍ୱତ ବ୍ୟାକରଣ ବ୍ୟାକରଣ - କୃଷ୍ଣଚନ୍ଦ୍ର ପ୍ରଧାନ, ସତ୍ୟ ନାରାୟଣ ବୁକ୍ ସୋର ।
- ୩. ଦୂରତ୍ୱ ଓଡ଼ିଆ ବ୍ୟାକରଣ- ତ୍ରିଲୋଚନ ବେହେରା, ଗୋବିନ୍ଦ ଚନ୍ଦ୍ର ଲେଙ୍କା, ପ୍ରେସ୍ ପବ୍ଲିଶର୍ସ, କଟକ ।
- ୪. ଆଧୁନିକ ଓଡ଼ିଆ ବ୍ୟାକରଣ- ଧନେଶ୍ୱର ମହାପାତ୍ର, କିତାବ୍ ମହଲ, କଟକ ।
- ୫. ସାଧାରଣ ଓଡ଼ିଆ ବ୍ୟାକରଣ ଶୁଦ୍ଧି- ଓଡ଼ିଆ ଭାଷା ପ୍ରତିଷ୍ଠାନ, ଭୁବନେଶ୍ୱର ।
- ୬. ଗଣମାଧ୍ୟମ ଓ ଗଣଯୋଗାଯୋଗ - ଶିଶିର ବେହେରା, ପ୍ରେସ୍ ପବ୍ଲିଶର୍ସ, କଟକ ।
- ୭. ଯୋଗାଯୋଗ ମୂଳକ ମାତୃଭାଷା - ବିରଞ୍ଚି ନାରାୟଣ ସାମଲ, ସତ୍ୟନାରାୟଣ ବୁକ୍ ସୋର, କଟକ ।
- ୮. ଯୋଗାଯୋଗର ଭାଷା - ସୁଧାଞ୍ଜଳି ଚନ୍ଦ୍ର ମହାନ୍ତି, ପ୍ରାଚୀ ପ୍ରକାଶନ, କଟକ ।

୯. ନିର୍ଭୁଲ ଲେଖାର ମୂଳସୂତ୍ର, ନୀଳାଦ୍ରି ଭୂଷଣ ହରିଚନ୍ଦନ, କିତାବ୍ ମହଲ, କଟକ ।

୧୦. ଓଡ଼ିଆ ଭାଷା ବ୍ୟାକରଣ ସୌଭାଗ, ଚନ୍ଦ୍ରଶେଖର ପତି, ଓଡ଼ିଶା ବୁକ୍ ଏମ୍ପୋରିୟମ୍, କଟକ ।

ନମୁନା ପ୍ରଶ୍ନ (Sample Questions) :

୧. ଶବ୍ଦ କାହାକୁ କୁହାଯାଏ ? (୧ ମାର୍କ)

୨. ପର୍ବତର ଦୁଇଟି ପ୍ରତିଶବ୍ଦ ଲେଖ । (୨ ମାର୍କ)

୩. ବାକ୍ୟର ପ୍ରକାରଭେଦ ଦର୍ଶାଅ । (୫ ମାର୍କ)

୪. ତୁମ ମହାବିଦ୍ୟାଳୟରେ ଏକ ଶିକ୍ଷକ ନିଯୁକ୍ତିପାଇଁ କୌଣସି ସମ୍ବାଦପତ୍ରରେ ଓଡ଼ିଆ ଭାଷାରେ କିପରି ବିଜ୍ଞାପନ ଦିଆଯିବ,

ତାହାର ଏକ ନମୁନା ଲେଖ । (୮ ମାର୍କ)

SEMESTER-I
AEC
प्रयोजनमूलक हिंदी

UNIT - I

प्रयोजनमूलक हिंदी :

प्रयोजनमूलक हिंदी का स्वरूप और परिभाषा, प्रयोजनमूलक हिंदी के भेद, प्रयोजनमूलक हिंदी की विशेषताएँ, प्रयोजनमूलक हिंदी की समस्याएँ और संभावनाएँ

UNIT - II

राजभाषा हिंदी की संवैधानिक स्थिति:

राजभाषा समिति, 1957, राजभाषा के संबंध में राष्ट्रपति के आदेश, 952, 1955, 1960, राजभाषा अधिनियम 1963, राजभाषा अधिनियम 1967, राजभाषा अधिनियम 1976

UNIT - III

कार्यालयी हिंदी:

हिंदी के विविध रूप : राजभाषा, राष्ट्रभाषा, संपर्क भाषा, संचार भाषा, मातृभाषा, सर्जनात्मक भाषा राष्ट्रभाषा और राजभाषा में अंतर, मानक हिंदी

कार्यालयी हिंदी के प्रमुख प्रकार्य

आलेखन: परिभाषा, स्वरूप, विशेषता, प्रारूप

टिप्पण: परिभाषा, स्वरूप, विशेषता, प्रारूप

पत्रलेखन, पल्लवन, संक्षेपण

पारिभाषिक शब्दावली : पारिभाषिक शब्दावली का स्वरूप एवं महत्त्व
पारिभाषिक शब्दावली निर्माण के सिद्धांत, पारिभाषिक शब्दावली के भेद, ज्ञान-
विज्ञान के विभिन्न क्षेत्रों में प्रयुक्त कुछ निर्धारित पारिभाषिक शब्दावली

UNIT – IV

हिंदी में कंप्यूटर का अनुप्रयोग:

कंप्यूटर का परिचय, कंप्यूटर की संरचना, कंप्यूटर के प्रकार, कंप्यूटर की
उपयोगिता, हिंदी में शब्द संसाधन, हिंदी में डाटा संसाधन, वेब पब्लिशिंग, वेब
पेज डिजाइनर

इंटरनेट :

इंटरनेट स्वरूप और विकास इंटरनेट : कार्यप्राणाली, इंटरनेट के संपर्क
उपकरणों का परिचय, इंटरनेट एक्सप्लोरर, इंटरनेट की अनुप्रयुक्तता।

लिंक, ई-मेल, ब्राउजिंग, अपलोडिंग, डाउनलोडिंग, न्यू मीडिया, वेब पत्रकारिता,
ब्लॉगिंग, इंटरनेट रिलै चैट, हिंदी के प्रमुख इंटरनेट पोर्टल।

पाठ्य पुस्तक:

1. प्रयोजनमूलक हिंदी- प्रो. राधाकांत मिश्र,
डॉ. अमूल्य रत्न महांती,
प्लैनेट वी, हिंदी बुक सेंटर, बादामबाड़ी, कटक

VAC
Environmental Studies
&
Disaster Management

SEMESTER-I

For Under Graduate Compulsory Courses for Arts, Science and Commerce

FULL MARK-100 (Credit-3)

Unit 1: Multidisciplinary nature of environmental studies (8Period)

Definition, scope and importance

Need for public awareness

Environmental Pollution

Definition

• Cause, effects and control measures of:-

- a. Air pollution
- b. Water pollution
- c. Soil pollution
- d. Marine pollution
- e. Noise pollution
- f. Radiation pollution

Unit 2:

Natural Resources:

(8 Period)

Renewable and non-renewable resources:

Natural resources and associated problems.

- a. Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people.
- b. Water resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
- c. Mineral resources : Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
- d. Food resources : World food problems, changes caused by agriculture and Overgrazing, effects of modern agriculture, fertilizer-pesticide problems, waterlogging, salinity, case studies.
- e. Energy resources : Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. Case studies.

Biodiversity:-

Introduction-Definition; Biogeographically classification of India

India as a mega diversity nation. Hot spots of biodiversity, Threats to biodiversity.

Endangered and endemic species of India. Conservation of biodiversity. In Situ and Ex-situ conservation of biodiversity

Unit-3: Disaster Management

(8 Period)

1. **Disaster Management:** Types of disasters (natural and Man-made) and their causes and effect)
2. **Vulnerability Assessment and Risk analysis:** Vulnerability to various disasters (Flood, Cyclone, Earthquake, Heat waves, Desertification and Lighting)
3. **Institutional Framework:** Institutional arrangements for disaster management (National Disaster Management Authority (NDMA), State Disaster Management Authority (SDMA), Disaster Management Act, 2005, District Disaster Management Authority (DDMA), National Disaster Response Force(NDRF) and Odisha Disaster Rapid Action Force(ODRAF)
4. **Preparedness measures:** Disaster Management cycle, Early Warning System, Pre-Disaster and Post-Disaster Preparedness, strengthening of SDMA and DDMA, Community Preparedness for flood cyclone, heat waves, fire safety, lightening and snake biting. Stakeholders participation, Corporate Social Responsibility (CSR)
5. **Survival Skills:** Survival skills adopted during and after disaster (Flood, Fire, Earthquake, Cyclone and Lightning), Disaster Management Act-2005, Compensation and Insurance

Unit 4: Social Issues and the Environment

(6 Period)

A.

- a. Environmental Ethics: Issues and possible solutions.
- b. Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies
- c. Environment Protection Act
- d. Air(Preservation Control of Pollution) Act
- e. Water(Preservation Control of Pollution) Act
- f. Wildlife Protection Act
- g. Forest Conservation Act
- h. Solid waste management Cause, effect and Control Measure of Urban and Industrial waste

(Role of each individual in conservation of Natural resources and prevention of pollution)

B. Human Population and the Environment

Population Ecology: Individuals, species, population, community

Human population growth, population control method

Urbanisation and its effect on society

Unit 5: Field work

(15 Periods of 30 hrs)

- Visit to an area to document environmental assets: river/forest/flora/fauna, etc.
- Visit to a local polluted site- Urban/Rural/Industrial/Agricultural
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge ,etc.