



**NGF COLLEGE OF ENGINEERING & TECHNOLOGY**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**LESSON PLAN (july-dec 2025)**

**Name of Teacher: Ms.Reetu**

**Designation: Assistant Professor**

**Subject Name: AIES**

**Branch: Computer Science**

**Semester: B.tech AIML 3<sup>RD</sup> sem**

**Subject Code: (PCC-AI-301)/CAI-201-V**

**Date of Start: 14 July 2025**

**Total Load: 17 hr 30 mins**

**Date of Completion: 21 Nov. 2025**

**Module/Unit-1: Introduction to AI**

| <b>S.No</b> | <b>Name of Topic</b> | <b>Hours</b> |
|-------------|----------------------|--------------|
| 1           | Basic Concepts of AI | 50           |
| 2           | Elements of AI       | 50           |
| 3           | AI Techniques        | 50           |
| 4           | Agents of AI         | 50           |
|             | <b>Total</b>         | 3 hr 20 min  |

**Module/Unit 2- AI Search Techniques**

| <b>S.No</b> | <b>Name of Topic</b>       | <b>Hours</b> |
|-------------|----------------------------|--------------|
| 1           | Problem solving techniques | 50           |
| 2           | State Space Search         | 50           |
| 3           | DFS                        | 50           |
| 4           | BFS                        | 50           |
| 5           | Informed Search            | 50           |
| 6           | Constraint Satisfaction    | 50           |
| 7           | MiniMax Algorithm          |              |
|             | <b>Total</b>               | 5 hr 50 mins |

|  |  |  |
|--|--|--|
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|--|--|--|

### **Module/Unit 3- Knowledge Representation**

| <b>S.No</b> | <b>Name of Topic</b>                                     | <b>Hours</b> |
|-------------|----------------------------------------------------------|--------------|
| 1           | Unification                                              | 50           |
| 2           | Predict Logic                                            | 50           |
| 3           | Rule based systems                                       | 50           |
| 4           | Structured Knowledge: Semantic Nets, Frames, Inheritance | 50           |
|             | <b>Total</b>                                             | 3hr.20 min   |

### **Module/Unit 4- Uncertain Knowledge and Reasoning**

| <b>S.No</b> | <b>Name of Topic</b>                                                | <b>Hours</b> |
|-------------|---------------------------------------------------------------------|--------------|
| 1           | Probabilistic reasoning: Bayes' theorem, Bayesian Networks          | 50           |
| 2           | Dempster-Shafer Theory                                              | 50           |
| 3           | Learning Techniques: Observation-based learning, inductive learning | 50           |
| 4           | Neural networks basics: supervised & unsupervised learning          | 50           |
|             | <b>Total</b>                                                        | 3hr.20 min   |

### **Module/Unit 5- Applications & Expert Systems**

| <b>S.No</b> | <b>Name of Topic</b>                                                                                 | <b>Hours</b> |
|-------------|------------------------------------------------------------------------------------------------------|--------------|
| 1           | Applications of AI: Computer Vision, NLP, Scientific Analysis, Medical Diagnosis, Financial Analysis | 50           |
| 2           | Expert Systems: Cognitive problems, architectures (Knowledge base, inference engine, MYCIN overview) | 50           |
|             | <b>Total</b>                                                                                         | 1 hr.40 min  |

**TEXT BOOKS:**

1. Artificial Intelligence By Elaine Rich and Kevin Knight , Tata McGraw Hill.
2. Introduction to AI and Expert Systems By Dan W. Patterson, PHI.
3. Principles of Artificial Intelligence By Nils J. Nilsson, Narosa Pub. house.
4. Foundation Artificial Intelligence & Expert Systems by VS Janakiraman K, Sarukesi P



**Signature of Teacher  
Director/Dean Academics**

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# NGF COLLEGE OF ENGINEERING & TECHNOLOGY

## DEPARTMENT OF COMPUTER SCIENCE

### LESSON PLAN (July-Dec 2025)

Name of Teacher: Ms, Pinkee Designation: Asstt. Professor

Subject Name: DATA STRUCTURES & ALGORITHMS Branch: AI/ML Semester: 3rd

Subject Code: PCC-CS-301/CEU-201-V

Date of Start: 14/07/25

Total Load: 27 hrs

Date of Completion: 21/11/25

#### Module/Unit-1: INTRODUCTION

| S.No         | Name of Topic                                                                               | Hours |
|--------------|---------------------------------------------------------------------------------------------|-------|
| 1            | Basic Terminologies: Elementary Data Organizations                                          | 1     |
| 2            | Data Structure Operations: insertion, deletion, traversal etc.; Analysis of an Algorithm    | 1     |
| 3            | Asymptotic Notations, Time-Space trade off                                                  | 2     |
| 4            | <b>Searching:</b> Linear Search and Binary Search Techniques and their complexity analysis. | 2     |
| <b>Total</b> |                                                                                             | 5     |

#### Module/Unit 2- STACKS AND QUEUES

| S.No         | Name of Topic                                                                                                   | Hours |
|--------------|-----------------------------------------------------------------------------------------------------------------|-------|
| 1            | ADT Stack and its operations: Algorithms and their complexity analysis                                          | 1     |
| 2            | Applications of Stacks: Expression Conversion and evaluation – corresponding algorithms and complexity analysis | 1     |
| 3            | ADT queue, Types of Queue: Simple Queue                                                                         | 1     |
| 4            | Circular Queue, Priority Queue; Operations on each types of Queues: Algorithms and their analysis               | 2     |
| <b>Total</b> |                                                                                                                 | 5     |

#### Module/Unit-3: LINKED LISTS

| S.No         | Name of Topic                                                                                                    | Hours |
|--------------|------------------------------------------------------------------------------------------------------------------|-------|
| 1            | Singly linked lists: Representation in memory                                                                    | 1     |
| 2            | Algorithms of several operations: Traversing, Searching, Insertion into, Deletion from linked list;              | 2     |
| 3            | Linked representation of Stack and Queue, Header nodes                                                           | 1     |
| 4            | Doubly linked list: operations on it and algorithmic analysis                                                    | 1     |
| 5            | Circular Linked Lists: all operations their algorithms and the complexity analysis                               | 1     |
| 6            | <b>Trees:</b> Basic Tree Terminologies, Different types of Trees: Binary Tree, Threaded Binary Tree              | 1     |
| 7            | Binary Search Tree, AVL Tree; Tree operations on each of the trees and their algorithms with complexity analysis | 2     |
| 8            | Applications of Binary Trees, B Tree, B+ Tree: definitions, algorithms and analysis                              | 1     |
| <b>Total</b> |                                                                                                                  | 10    |

### Module/Unit-4: SORTING AND HASHING

| S.No | Name of Topic                                                                                                        | Hours |
|------|----------------------------------------------------------------------------------------------------------------------|-------|
| 1    | Objective and properties of different sorting algorithms: Selection Sort                                             | 1     |
| 2    | Bubble Sort, Insertion Sort, Quick Sort, Merge Sort, Heap Sort; Performance and Comparison among all the methods     | 2     |
| 3    | Hashing and collision resolution                                                                                     | 1     |
| 4    | <b>Graph:</b> Basic Terminologies and Representations, Graph search and traversal algorithms and complexity analysis | 2     |
|      | <b>Total</b>                                                                                                         | 6     |

#### TEXT BOOKS and REFERENCE BOOKS:

1. A. M. Tenenbaum, Langsam, Moshe J. Augentem , “*Data Structures using C*,” PHI Pub.
2. A.V. Aho, J.E. Hopcroft and T.D. Ullman, “*Data Structures and Algorithms*” Original edition, Addison-Wesley, 1999, Low Priced Edition.
3. Ellis Horowitz & Sartaj Sahni, “*Fundamentals of Data structures*” Pub, 1983,AW



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# NGF COLLEGE OF ENGINEERING & TECHNOLOGY

## DEPARTMENT OF COMPUTER ENGINEERING

### LESSON PLAN (July-Dec 2025)

Name of Teacher: Ms. Vaishali Munjal      Designation: Assistant professor      Subject Name: D.E  
Branch: AIML      Semester: 3<sup>RD</sup>      Subject Code: ESC-302/ELU-202-V  
Date of Start: 14/07/2025      Total Load: ...42..hrs      Date of Completion: 21/11/2025

#### Module/Unit-1:

| S.No | Name of Topic                                                                             | Hours           |
|------|-------------------------------------------------------------------------------------------|-----------------|
| 1    | BJ Digital signals, digital circuits, AND, OR, NOT, NAND, NOR and Exclusive-OR operations | 50 MIN          |
| 2    | Boolean algebra, examples of IC gates                                                     | 50 MIN          |
| 3    | , number systems-binary, signed binary, octal hexadecimal number                          | 50 MIN          |
| 4    | binary arithmetic, one's and two's complements arithmetic                                 | 50 MIN          |
| 5    | , codes, error detecting and correcting codes                                             | 50 MIN          |
| 6    | characteristics of digital ICs, digital logic families                                    | 50 MIN          |
| 7    | TTL, Schottky TTL and CMOS logic                                                          | 50 MIN          |
| 8    | interfacing CMOS and TTL                                                                  | 50 MIN          |
| 9    | Tri-state logic T Structure                                                               | 50 MIN          |
|      | <b>Total</b>                                                                              | <b>7.5HOURS</b> |

#### **Module/Unit 2**

| S.No | Name of Topic                                                                                                    | Hours  |
|------|------------------------------------------------------------------------------------------------------------------|--------|
| 1    | Standard representation for logic functions, K-map representation, simplification of logic functions using K-map | 50 MIN |
| 2    | minimization of logical functions.                                                                               | 50 MIN |

|    |                                               |                    |
|----|-----------------------------------------------|--------------------|
| 3  | , Multiplexer, De-Multiplexer/Decoders        | 50 MIN             |
| 4  | Adders, Subtractors, BCD arithmetic           | 50 MIN             |
| 5  | carry look ahead adder, serial adder          | 50 MIN             |
| 6  | ALU, elementary ALU design, popular MSI chips | 50 MIN             |
| 7  | code converters, priority encoders            | 50 MIN             |
| 8  | decoders/drivers for display devices          | 50 MIN             |
| 9  | Q-M method of function realization            | 50 MIN             |
| 10 | Don't care conditions                         | 50 MIN             |
|    | <b>TOTAL</b>                                  | <b>8<br/>HOURS</b> |

### **Module/Unit 3**

| <b>S.No</b> | <b>Name of Topic</b>                                        | <b>Hours</b>         |
|-------------|-------------------------------------------------------------|----------------------|
| 1           | A 1-bit memory, the circuit properties of Bistable latch    | 50 MIN               |
| 2           | clocked SR flip flop, J- K-T                                | 50 MIN               |
| 3           | D types flip flops, applications of flip flops              | 50 MIN               |
| 4           | shift registers, applications                               | 50 MIN               |
| 5           | serial to parallel converter, parallel to serial converter  | 50 MIN               |
| 6           | ring counter, sequence generator                            | 50 MIN               |
| 7           | ripple (Asynchronous) counters, synchronous counters        | 50 MIN               |
| 8           | counters design using flip flops, special counter IC's      | 50 MIN               |
| 9           | asynchronous sequential counters, applications of counters. | 50 MIN               |
|             | <b>TOTAL</b>                                                | <b>7.5<br/>HOURS</b> |

### **Module/Unit 4**

|   |                                                                                  |                      |
|---|----------------------------------------------------------------------------------|----------------------|
| 1 | weighted resistor/converter, R-2R Ladder D/A converter                           | 50 MIN               |
| 2 | specifications for D/A converters, examples of D/A converter ICs,                | 50 MIN               |
| 3 | sample and hold circuit, analog to digital converters: quantization and encoding | 50 MIN               |
| 4 | parallel comparator A/D converter                                                | 50 MIN               |
| 5 | counting A/D converter, dual slope A/D converter                                 | 50 MIN               |
| 6 | A/D converter using voltage to frequency and voltage to time conversion          | 50 MIN               |
| 7 | specifications of A/D converters, example of A/D converter ICs                   | 50 MIN               |
| 8 | successive approximation A/D converter                                           | 50 MIN               |
|   | <b>TOTAL</b>                                                                     | <b>6.6<br/>HOURS</b> |

### **Module/Unit 5**

|   |                                                                         |                       |
|---|-------------------------------------------------------------------------|-----------------------|
| 1 | Memory organization and operation, expanding memory size                | 50 MIN                |
| 2 | classification and characteristics of memories                          | 50 MIN                |
| 3 | sequential memory, read only memory (ROM), read and write memory(RAM)   | 50 MIN                |
| 4 | content addressable memory (CAM), charge de coupled device memory (CCD) | 50 MIN                |
| 5 | commonly used memory chips, ROM as a PLD, Programmable logic array      | 50 MIN                |
| 6 | Programmable array logic                                                | 50 MIN                |
| 7 | complex Programmable logic devices (CPLDS)                              | 50 MIN                |
| 8 | Field Programmable Gate Array (FPGA).                                   | 50 MIN                |
|   | <b>TOTAL</b>                                                            | <b>6.67<br/>HOURS</b> |



**REFERENCES:**

1. R. P. Jain, "Modern Digital Electronics", McGraw Hill Education, 2009.
2. M. M. Mano, "Digital logic and Computer design", Pearson Education India, 2016.
3. A. Kumar, "Fundamentals of Digital Circuits", Prentice Hall India, 2016.



**Signature of Teacher**



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# NGF COLLEGE OF ENGINEERING & TECHNOLOGY

## DEPARTMENT OF COMPUTER ENGINEERING

### LESSON PLAN (July-Dec 2025)

Name of Teacher: Ms. Manisha

Designation: Assistant professor

SubjectName: Mathematics III

Branch: CSE AIML

Semester:IIIrd

Subject Code:BSC-301/MTU-213-V

Date of Start:14<sup>th</sup> July 2025

Total Load: .36....hrs

Date of Completion:21 Nov 2025

#### Module/Unit-1: SEQUENCES AND SERIES

| S.No | Name of Topic                           | Hours |
|------|-----------------------------------------|-------|
| 1    | convergence of sequence and series      | 1     |
| 2    | test for convergence                    | 1     |
| 3    | power series ,Taylor series             | 1     |
| 4    | series or exponential                   | 1     |
| 5    | trigonometric and logarithmic functions | 1     |
|      | <b>Total</b>                            | 5     |

#### Module/Unit 2-MULTIVARIABLE CALCULUS (DIFFERENTIATION)

| S.No | Name of Topic                         | Hours |
|------|---------------------------------------|-------|
| 1    | limit and continuity                  | 1     |
| 2    | partial derivatives, total derivative | 1     |
| 3    | tangent plane and normal line         | 1     |
| 4    | maxima minima and saddle point        | 1     |
| 5    | method of Lagrange multipliers        | 1     |
| 6    | gradient, curl and divergence         | 1     |
|      | <b>Total</b>                          | 6     |

#### Module/Unit 3- MULTIVARIABLE CALCULUS (INTEGRATION)

| S.No | Name of Topic                                                              | Hours |
|------|----------------------------------------------------------------------------|-------|
| 1    | change of order of integration , change of variables                       | 2     |
| 2    | theorems of green ,gauss and stokes                                        | 3     |
| 3    | orthogonal curvilinear coordinates                                         | 1     |
| 4    | simple application involving cubes ,sphere and rectangular parallelepipeds | 1     |
|      | <b>Total</b>                                                               | 8     |

## Module/Unit 4- FIRST ORDER ORDINARY DIFFERENTIAL EQUATIONS

| S.No | Name of Topic                             | Hours    |
|------|-------------------------------------------|----------|
| 1    | exact equation                            | 3        |
| 2    | linear equation                           | 1        |
| 3    | linear equation with variable coefficient | 1        |
| 4    | equation not of first degree              | 1        |
| 5    | equation solvable for p,x,y               | 1        |
| 6    | clairauts type                            | 1        |
|      | <b>Total</b>                              | <b>8</b> |

## Module/Unit 5- Differential equations of higher orders

| S.No | Name of Topic                                                        | Hours    |
|------|----------------------------------------------------------------------|----------|
| 1    | second order linear differential equation                            | 1        |
| 2    | second order linear differential equation with variable coefficients | 1        |
| 3    | method of variation of parameters                                    | 1        |
| 4    | Cauchy Euler equations                                               | 1        |
| 5    | Power series solutions                                               | 1        |
| 6    | Legendre polynomials                                                 | 2        |
| 7    | Bessel functions of the first kind and their properties              | 2        |
|      | <b>Total</b>                                                         | <b>9</b> |



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# **NGF COLLEGE OF ENGINEERING & TECHNOLOGY**

## **DEPARTMENT OF COMPUTER ENGINEERING**

### **LESSON PLAN (July-Dec 2025)**

**Name of Teacher:** Ms. Chaman Lata

**Designation:** Assistant professor

**SubjectName:** ETC

**Branch:** CSE /AIML

**Semester:**IIIrd

**Subject Code:**HSMC-01/ AEC-112-V

**Date of Start:** 14 July 2025

**Total Load:** .36....hrs

**Date of Completion:** 21 Nov 2025

#### **Module/Unit-1: Reading Skills**

| <b>S.No</b> | <b>Name of Topic</b>      | <b>Hours</b> |
|-------------|---------------------------|--------------|
| 1           | Comprehension Passages    | 2            |
| 2           | Skimming and Scanning     | 2            |
| 3           | Note Making & Summarizing | 1            |
| 4           | Analyzing Literary Texts  | 1            |
|             | <b>Total</b>              | <b>6</b>     |

#### **Module/Unit 2 Writing Skills**

| <b>S.No</b> | <b>Name of Topic</b>               | <b>Hours</b> |
|-------------|------------------------------------|--------------|
| 1           | Paragraph Writing                  | 2            |
| 2           | Essay Writing                      | 2            |
| 3           | Letter Writing (Formal & Informal) | 2            |
| 4           | Report Writing                     | 2            |
|             | <b>Total</b>                       | <b>8</b>     |

#### **Module/Unit 3- Grammar & Vocabulary**

| <b>S.No</b> | <b>Name of Topic</b>          | <b>Hours</b> |
|-------------|-------------------------------|--------------|
| 1           | Tenses and Sentence Structure | 2            |
| 2           | Active & Passive Voice        | 2            |
| 3           | Direct & Indirect Speech      | 2            |
| 4           | Error Detection & Correction  | 1            |
| 5           | Vocabulary Building           | 1            |
|             | <b>Total</b>                  | <b>8</b>     |

#### **Module/Unit - 4 Communication Skills**

| <b>S.No</b> | <b>Name of Topic</b> | <b>Hours</b> |
|-------------|----------------------|--------------|
|-------------|----------------------|--------------|

|              |                                 |          |
|--------------|---------------------------------|----------|
| 1            | Oral Presentation               | 2        |
| 2            | Group Discussion                | 2        |
| 3            | Interview Skills                | 2        |
| 4            | Listening & Speaking Activities | 1        |
| <b>Total</b> |                                 | <b>7</b> |

### **Module/Unit 5- Applied English**

| <b>S.No</b>  | <b>Name of Topic</b>              | <b>Hours</b> |
|--------------|-----------------------------------|--------------|
| 1            | Professional Email Writing        | 2            |
| 2            | Notice, Agenda & Minutes Writing  | 2            |
| 3            | Resume & Cover Letter Preparation | 2            |
| 4            | Technical Writing & Documentation | 1            |
| <b>Total</b> |                                   | <b>7</b>     |

#### **TEXT BOOKS:**

- Contemporary English Grammar – David Green
- High School English Grammar & Composition – Wren & Martin
- Technical Communication – Meenakshi Raman & Sangeeta Sharm

#### **Reference Books:**

- Business Communication – C.S. Rayudu
- Effective Technical Communication – Barun K. Mitra
- English for Engineers – S.P. Dhanavel



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# NGF COLLEGE OF ENGINEERING & TECHNOLOGY

## DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

### LESSON PLAN (JULY-DEC 2025)

Name of Teacher: Neha jayant Designation: Assistant Professor Subject Name project lab

Branch: Btech CSE-AI/ML

Semester: 3<sup>rd</sup>

Subject Code:PROJ-CS-301

Date of Start: 14-07-25

Total Load:26 hours 40 min

Date of Completion: 21-11-25

| S.No | Name of Topic                                                                                                                                                                                                       | Hours   |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1    | Objective: Introduce students to the concept of project-based learning and allow them to choose a project of interest.                                                                                              | 100 min |
| 2    | Discuss the importance of projects in understanding real-world applications. Present examples of successful projects from previous years. Guide students in selecting a project based on their interests and skills | 100min  |
| 3    | Initial project proposal and rationale.                                                                                                                                                                             | 100 min |
|      | <b>Total</b>                                                                                                                                                                                                        | 5 hours |

| S.No | Name of Topic                                                                                                                                                                                                         | Hours   |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1    | Help students research and plan their projects, defining goals, milestones, and required resources.                                                                                                                   | 100 min |
| 2    | Provide guidance on conducting research and gathering relevant information. Help students create a project plan outlining key tasks and deadlines. Conduct individual or group consultations to refine project ideas. | 100 min |
| 3    | Submission of a detailed project plan                                                                                                                                                                                 | 100 min |
|      | <b>Total</b>                                                                                                                                                                                                          | 5 hours |

| S.No | Name of Topic                                                                                                                                                      | Hours   |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1    | Assist students in implementing their projects, providing technical support and troubleshooting                                                                    | 100 min |
| 2    | Conduct workshops or tutorials on relevant tools and technologies. Facilitate peer collaboration and feedback sessions. Monitor progress through regular check-ins | 100 min |
| 3    | Progress reports and demonstration of initial project implementation.                                                                                              | 100 min |
|      | <b>Total</b>                                                                                                                                                       | 5 hours |

| S.No | Name of Topic                                                                                                                                                                                                       | Hours          |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 1    | Help students refine their projects, prepare presentations, and reflect on the learning process.                                                                                                                    | 100 min        |
| 2    | Provide feedback on project progress and offer suggestions for improvement. Guide students in preparing a final presentation or demonstration. Facilitate peer evaluations and reflections on the learning journey. | 100 min        |
| 3    | Final project presentation and submission. Reflective essays on the challenges and learning experiences.                                                                                                            | 100 min        |
|      | <b>Total</b>                                                                                                                                                                                                        | <b>5 hours</b> |

| S.No | Name of Topic                                                                                                                   | Hours                 |
|------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 1    | Project Documentation,                                                                                                          | 100 min               |
| 2    | Technical Competence: Assess the technical aspects of the project and the mastery of relevant tools and technologies.           | 100 min               |
| 3    | Collaboration and Communication: Evaluate how well students collaborate with peers, seek feedback, and communicate their ideas. | 100 min               |
| 4    | Problem Solving: Assess the ability of students to overcome challenges and solve problems encountered during the project.       | 100 min               |
|      | <b>Total</b>                                                                                                                    | <b>6 hours 40 min</b> |

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Signature of Teacher

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Approved by IQAC Director/Dean Academics



**NGF COLLEGE OF ENGINEERING & TECHNOLOGY**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**LESSON PLAN (july-dec 2025)**

**Name of Teacher: Ms.Reetu**

**Designation: Assistant Professor**

**Subject Name: IT MATLAB**

**Branch: B.tech AIML**

**Semester: B.tech 3RD sem**

**Subject Code: (PCC- CS-302)**

**Date of Start: 14 July 2025**

**Total Load: 55 hr**

**Date of Completion: 21 Nov. 2025**

**Module/Unit-1: Introduction**

| <b>S.No</b> | <b>Name of Topic</b>                                                                   | <b>Hours</b> |
|-------------|----------------------------------------------------------------------------------------|--------------|
| 1           | Introduction to MATLAB                                                                 | 100          |
| 2           | Data types and variables                                                               | 100          |
| 3           | Inter-conversion of Data types,                                                        | 100          |
| 4           | MATLAB Variables                                                                       | 100          |
| 5           | Keywords and Constant                                                                  | 100          |
| 6           | Session Command.                                                                       | 100          |
| 7           | MATLAB Operators and Operations: Operators (Arithmetic, Relational, Logical, Bitwise), | 100          |
| 8           | Set Operations                                                                         | 100          |
| 9           | Operator Precedence,                                                                   | 100          |
| 10          | Mathematical Functions.                                                                | 100          |
|             | <b>Total</b>                                                                           | 16 hr 40 min |



### Module/Unit 2- PROGRAMMING IN MATLAB

| S.No | Name of Topic                                            | Hours                  |
|------|----------------------------------------------------------|------------------------|
| 1    | Decision Making                                          | 100                    |
| 2    | Script and Function                                      | 100                    |
| 3    | Loops,                                                   | 100                    |
| 4    | branches, Functions,                                     | 100                    |
| 5    | Working on Script File (Creating, Saving and Executing), | 100                    |
| 6    | MATLAB I/O                                               | 100                    |
| 7    | Formatted I/O Method,.                                   | 100                    |
|      | <b>Total</b>                                             | <b>11hr 40<br/>MIN</b> |
|      |                                                          |                        |

### Module/Unit 3- ARRAYS AND GRAPHICS

| S.No | Name of Topic                                                | Hours |
|------|--------------------------------------------------------------|-------|
| 1    | Introduction to Matrices                                     | 100   |
| 2    | Operations on Arrays/Matrices                                | 100   |
| 3    | Manipulations of Arrays/Matrices,                            | 100   |
| 4    | Expansion of Matrix Size,                                    | 100   |
| 5    | Reduction of Matrices/Arrays order                           | 100   |
| 6    | Introduction to plot,                                        | 100   |
| 7    | Basic 2-D Plots( Style options, Labels, Axis control, etc.), | 100   |
| 8    | specialized 2-D Plots                                        | 100   |

|    |                                                             |              |
|----|-------------------------------------------------------------|--------------|
|    |                                                             |              |
| 9  | drawing multiple plots.                                     | 100          |
| 10 | Using MATLAB for fractals and chaos and Conway game of life | 100          |
|    | <b>Total</b>                                                | 16 hr 40 min |

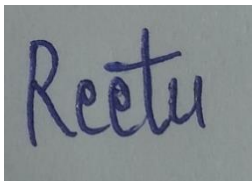
#### **Module/Unit 4- : FILE HANDLING AND DEBUGGING**

| <b>S.No</b> | <b>Name of Topic</b>               | <b>Hours</b> |
|-------------|------------------------------------|--------------|
| 1           | Introduction to file handling      | 100          |
| 2           | working on files,                  | 100          |
| 3           | accessing of Text File             | 100          |
| 4           | Saving/ Loading MATLAB Variables   | 100          |
| 5           | reading data without opening file, | 100          |
| 6           | reading and writing Excel.         | 100          |
|             | <b>Total</b>                       | 10 hr        |

#### **TEXT BOOKS:**

1. Delores M. Etter, David C. Kuncicky, Holly Moore, "Introduction to MATLAB 7.0", Pearson, 2013.

2. Rudra Pratap, "Getting Started with MATLAB", OXFORD University Press, 2010.
3. Agam Kumar Tyagi, "MATLAB and Simulink for Engineers", University Press, 2012.



**Signature of Teacher  
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# NGF COLLEGE OF ENGINEERING & TECHNOLOGY

## DEPARTMENT OF COMPUTER SCIENCE

### LESSON PLAN (July-Dec 2025)

Name of Teacher: Ms, Pinkee

Designation: Asstt. Professor

Subject Name: Introduction to Artificial Intelligence Lab

Branch: AI/ML

Semester: 3rd

Subject Code: PCC-AI-302

Date of Start: 14/07/25

Total Load: 20 hrs

Date of Completion: 21/11/25

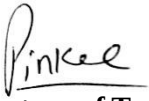
### LAB EXPERIMENT

| S.No | Name of Topic                                                                                                                   | Hours          |
|------|---------------------------------------------------------------------------------------------------------------------------------|----------------|
| 1    | Program 1: Simple Rule-Based Chatbot using if-else Objective: Understand how knowledge is encoded using simple rules.           | 100 Min        |
| 2    | Program 2: AI Agent Simulation Objective: Create a basic reflex agent that reacts to input (e.g., traffic light color = action) | 100 Min        |
| 3    | Program 3: Implement Depth First Search (DFS)                                                                                   | 100 Min        |
| 4    | Program 4: Implement Breadth First Search (BFS)                                                                                 | 100 Min        |
| 5    | Program 5: Implement A Search Algorithm*                                                                                        | 100 Min        |
| 6    | Program 6: Solve 8-puzzle using any search algorithm                                                                            | 100 Min        |
| 7    | Program 7: Implement Tic-Tac-Toe using Minimax Algorithm                                                                        | 100 Min        |
| 8    | Program 8: Represent knowledge using Propositional Logic in Python                                                              | 100 Min        |
| 9    | Program 9: Implement Unification Algorithm                                                                                      | 100 Min        |
| 10   | Program 10: Represent knowledge using Semantic Net in graph format                                                              | 100 Min        |
|      | <b>Total</b>                                                                                                                    | <b>17 Hrs.</b> |

### TEXT BOOKS and REFERENCE BOOKS:

1. Artificial Intelligence By Elaine Rich and Kevin Knight , Tata McGraw Hill.
2. Introduction to AI and Expert Systems By Dan W.Patterson, PHI.
3. Principles of Artificial Intelligence By Nils J.Nilsson, Narosa Pub. house.

4. Foundation Artificial Intelligence & Expert Systems by VS Janakiraman K, Sarukesi P



**Signature of Teacher**



**Approved by HOD/Dean**



**Approved by IQAC Director/Dean Academics**



# NGF COLLEGE OF ENGINEERING & TECHNOLOGY

## DEPARTMENT OF COMPUTER ENGINEERING

### LESSON PLAN (July-Dec 2025)

Name of Teacher: Ms. Vaishali Munjal      Designation: Assistant professor

Subject Name: D.E Lab

Branch: AIML

Semester: 3<sup>rd</sup>

Subject Code: ESC-304

Date of Start: 14/07/2025

Total Load: ...35..hrs

Date of Completion: 21/07/25

### EXPERIMENTS

| S.No | Name of Topic                                                                                                                                                                                                | Hours   |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1    | To study and verify the truth table of logic gates                                                                                                                                                           | 200 MIN |
| 2    | To realize half/full adder and half/full subtractor.<br><br>i.      Using X-OR and basic gates<br>ii.     Using only nand gates.                                                                             | 200 MIN |
| 3    | To realize IC7483 as parallel adder /<br><br>Subtractor. <u>Apparatus</u>                                                                                                                                    | 200 MIN |
| 4    | To verify BCD to excess –3 code conversion using NAND gates. To study and verify the truth table of excess-3 to BCD code converter                                                                           | 200 MIN |
| 5    | To convert given binary numbers to gray codes.                                                                                                                                                               | 200 MIN |
| 6    | To verify the truth table of multiplexer using 74153 & to verify a demultiplexer using 74139. To study the arithmetic circuits half-adder half Subtractor, full adder and full Subtractor using multiplexer. | 200 MIN |
| 7    | To verify the truth table of MUX and DEMUX using NAND.                                                                                                                                                       | 200 MIN |

|    |                                                                                                                        |         |
|----|------------------------------------------------------------------------------------------------------------------------|---------|
| 8  | To verify the truth table of one bit and two bit comparators using logic gates.                                        | 200 MIN |
| 9  | To convert a given octal input to the binary output and to study the LED display using 7447 7-segment decoder/ driver. | 200 MIN |
| 10 | To realize and minimize 5 & 6 variables using K-Map Method                                                             | 200 MIN |
|    | <b>Total</b>                                                                                                           | 35 hrs  |

#### REFERENCES:

1. R. P. Jain, "Modern Digital Electronics", McGraw Hill Education, 2009.
2. M. M. Mano, "Digital logic and Computer design", Pearson Education India, 2016.
3. A. Kumar, "Fundamentals of Digital Circuits", Prentice Hall India, 2016.





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# NGF COLLEGE OF ENGINEERING & TECHNOLOGY

## DEPARTMENT OF COMPUTER SCIENCE

### LESSON PLAN (July-Dec 2025)

Name of Teacher: Ms, Pinkee

Designation: Asstt. Professor

Subject Name: DATA STRUCTURES & ALGORITHMS

Branch: AI/ML

Semester: 3rd

Subject Code: PCC-CS-301

Date of Start: 14/07/25

Total Load: 20 hrs

Date of Completion: 21/11/25

### Module/Unit-1: Introduction and Divide and Conquer Approach

| S.No         | Name of Topic                                                                              | Hours          |
|--------------|--------------------------------------------------------------------------------------------|----------------|
| 1            | WAP to find an element in an array using Linear search.                                    | 100 Min        |
| 2            | WAP to find an element in a Sorted array using Binary search.                              | 100 Min        |
| 3            | Implement a stack using array and perform push , pop and peek operation.                   | 100 Min        |
| 4            | Implement a Queue using array and perform enqueue ,dequeue and peek operation.             | 100 Min        |
| 5            | Implement a singly linked list and perform insertion, deletion, and traversal operations.  | 100 Min        |
| 6            | Implement a program to perform inorder, preorder, and postorder traversal of a binary tree | 100 Min        |
| 7            | Implement a binary search tree and perform insertion, deletion, and search operations.     | 100 Min        |
| 8            | Implement a program to find the height of a binary tree                                    | 100 Min        |
| 9            | Implement a program to sort an array using bubble sort algorithm.                          | 100 Min        |
| 10           | Implement a program to sort an array using Insertion sort algorithm                        | 100 Min        |
| 11           | Implement a program to sort an array using Quick sort algorithm                            | 100 Min        |
| 12           | Implement a program to sort an array using merge sort algorithm                            | 100 Min        |
| 13           | Implement a program to sort an array using Heap sort algorithm                             | 100 Min        |
| 14           | Implement a program to perform DFS                                                         | 100 Min        |
| 15           | Implement a program to perform BFS                                                         | 100 Min        |
| <b>Total</b> |                                                                                            | <b>25 Hrs.</b> |



**TEXT BOOKS/ REFERENCE BOOKS:**

**TEXT BOOKS and REFERENCE BOOKS:**

1. A. M. Tenenbaum, Langsam, Moshe J. Augentem , “*Data Structures using C,*” PHI Pub.
2. A.V. Aho, J.E. Hopcroft and T.D. Ullman, “*Data Structures and Algorithms*” Original edition, Addison-Wesley, 1999, Low Priced Edition.
3. Ellis Horowitz & Sartaj Sahni, “*Fundamentals of Data structures*” Pub, 1983,AW



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