**Title:** **Artificial Intelligence Developer**

**Class: M.Sc. - II**

**DURATION: Six Months**

**Name of Coordinator: Mr. P.S. Kadam**

## Department of Electronics

1. Title: **Artificial Intelligence Developer**

2. Year of implementation:2020

3. Structure of Skill Development Course

| Eligibility | Duration | Theory Hours | Practical Hours | Total Hours | Credits | No. of students in batch | NSQF Level |
|---|---|---|---|---|---|---|---|
| H.S.C Pass | 6 Month | 20 | 30 | 50 | 03 | 20 | L4 |

4. Evaluation Structure:

| Theory Marks | | | Practical Assessment | | | Project/Field Visit | Total |
|---|---|---|---|---|---|---|---|
| ISE | ESE | Total | Exam | Journal | Total | Submission+Viva Voice | 100 |
| 10 | 30 | 40 | 30 | 10 | 40 | 20 | |

# Syllabus

**Learning Objectives:**

1. To learn artificial intelligence and its important characteristics
2. To study problem solving using AI

## Theory Syllabus

## Unit I: Introduction [10]

Introduction- Data, Artificial Intelligence (AI), Machine Learning (ML), Characteristics of AI and ML, advantages and disadvantages. Introduction to Deep learning, study of 'how to use data' Workflow of machine learning and data science applications, Tools for AI Selecting, formulating and working on AI applications.

## Unit II: Development and Application of AI [10]

First step in AI and realistic view, Discrimination / Bias , Survey of AI applications and techniques, Case study: Smart speaker, Self-driving car, Example roles of an AI team AI pitfalls. Adversarial attacks on AI Adverse uses of AI, AI and economies, AI carrier opportunities.

**Learning Outcomes:**

At the end of this course, the students should be able to

1. Elaborate AI, deep learning, machine learning etc.
2. Understand application areas of AI

**Practical Syllabus**

## Objectives:

1. To study tools for development of AI applications
2. To learn process development of AI applications

### List of Experiments: Artificial intelligence (24) hr

1. Study of Prolog-I
2. Write simple fact for the statements using PROLOG.
3. Write predicates for freezing point checking after converting centigrade temperatures to Fahrenheit
4. Problem solving using depth first search.
5. Problem solving using best first search.
6. Write a program to solve 8 queens problem
7. Solve 8-puzzle problem using best first search
8. Solve traveling salesman problem.

### Project/ Field Visits/ Industrial Visit (06 hr)

Every student should give visit to field or industry & submit the report. The work will be assessed independently at the time of practical examination

## Learning Outcomes:

After completion of the practical, Student are able to:

1. Demonstrate AI tools for various application development
2. Elaborate the process of AI application development

## Reference books:

1. A First Course in Artificial Intelligence, by Deepak Khemani
2. Machine Learning (in Python and R) For Dummiesby John Paul Mueller (Author), Luca Massaron
3. Artificial Intelligence For Dummiesby John Paul Mueller (Author), Luca Massaron

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