

## Skill Enhancement Course: SEC for B.Sc. & other Subject Students

### Semester: III/IV

Course Title: <b>Artificial Intelligence</b>	Course Credits: 2
Total Contact Hours: 13 hours of theory and 26 hours of practical	Duration of ESA: 01 Hour
Formative Assessment Marks: <b>20 marks</b>	Summative Assessment Marks: 30 marks

#### Course Outcomes (COs):

At the end of the course, students will be able to:

- Appraise the theory of Artificial intelligence and list the significance of AI.
- Discuss the various components that are involved in solving an AI problem.
- Illustrate the working of AI Algorithms in the given contrast.
- Analyze the various knowledge representation schemes, Reasoning and Learning techniques of AI.
- Apply the AI concepts to build an expert system to solve the real-world problems.

#### Course Content (Artificial Intelligence)

	Details of topic	Duration
<b>Course – 1 - Azure AI Fundamentals (AI-900)</b>	AI-900 pathway consists of 5 courses and 2 reading material: <ol style="list-style-type: none"> <li>i. Introduction to AI on Azure</li> <li>ii. Use visual tools to create machine learning models with Azure Machine Learning</li> <li>iii. Explore computer vision in Microsoft Azure</li> <li>iv. Explore natural language processing</li> <li>v. Explore conversational AI</li> <li>vi. Tune Model Hyperparameters - Azure Machine Learning (Reading)</li> <li>vii. Neural Network Regression: Module Reference - Azure Machine Learning (Reading)</li> </ol>	05 hours
<b>Practical</b>	<ol style="list-style-type: none"> <li>1. Prepare the data</li> <li>2. Model the data</li> <li>3. Visualize the data</li> <li>4. Analyse the data</li> <li>5. Deploy and maintain deliverables</li> </ol>	13 hours
<b>Course – 2 - Data Analyst Associate (DA-100)</b>	DA-100 pathway consists of 5 courses and 2 reading material: <ol style="list-style-type: none"> <li>1. Get started with Microsoft data analytics</li> <li>2. Prepare data for analysis</li> <li>3. Model data in Power BI</li> <li>4. Visualize data in Power BI</li> <li>5. Data analysis in Power BI</li> <li>6. Manage workspaces and datasets in Power BI</li> <li>7. Key Influencers Visualizations Tutorial - Power BI</li> <li>8. Smart Narratives Tutorial - Power BI   Microsoft Docs</li> </ol>	08 hours

<b>Practical</b>	<ol style="list-style-type: none"> <li>1. Describe Artificial Intelligence workloads and considerations</li> <li>2. Describe fundamental principles of machine learning on Azure</li> <li>3. Describe features of computer vision workloads on Azure</li> <li>4. Describe features of Natural Language Processing (NLP) workloads on Azure</li> </ol>	13 hours
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**References to learning resources:**

1. The learning resources made available for the course titled “Azure AI Fundamentals (AI-900) and Data Analyst Associate (DA-100).” on Future Skills Prime Platform of NASSCOM.

**Pedagogy**

Flipped classroom pedagogy is recommended for the delivery of this course.

For every class:

1. All the faculty who takes this class should go for a Faculty Development Program on these before starting the session.
2. Faculty needs to introduce this course to the students then students need to start learning from Future Skills PRIME platform.
3. Faculty also needs to explain the course outcomes and needs of the course and why it is needed for the students.
4. Then students need to start learning online after registering on the platform.
5. Classroom activities are designed around the topic of the session towards developing better understanding, clearing doubts and discussions of high order thinking skills like application, analysis, evaluation, and design.
6. Every theory class ends with announcement of exercise for practical activity of the week.

**Exercises:**

Practical Exercises	Weightage in marks
After each chapter students’ needs to complete exercises based on the learning in Azure environment.	No Weightage (But students need to complete it to move to next chapter) .

**Assessment:**

<b>Formative Assessment</b>	
<b>Assessment Occasion</b>	<b>Weightage in Marks</b>
<ol style="list-style-type: none"> <li>1. Summative Assessment: After completion of both the courses, the student can optionally give Assessment for each of the courses on Future Skills Prime platform. Students will have two attempts and those who score at least 50% marks per course will get certificate from NASSCOM-MeitY.</li> </ol>	<p>This assessment may be given 50% weight in computing the final grade of the students.</p>

