



Lesson Plan No.	Course Name: Artificial Intelligence	Course No.: PSCSATE-255
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Topic: Introduction to AI

Objectives	At the end of the lesson the student shall be able to: a) Understand the role of AI in real world b) Realise about its evolution c) Learn about its different applications
Teaching Aids (if any)	a) PowerPoint Presentation b) Use of Near Pod engagement tool for online quiz c) Pen Tablet for highlighting important points d) Google meet for conduct of online classes/Chalk & Talk for offline classes e) Google Classroom for sharing of relevant Links /video lectures/E-content
Teaching Development	1. Introduction (5 minutes) Ask questions - What do you mean by Artificial Intelligence? - Where do you find AI being used? - Name few examples of AI in real world. 2. Development (30 minutes) - Definition/Introduction of AI - Evolution of AI - Examples of AI - Goals of AI 3. Exercise (5 minutes) - Ask students to explain role of AI - Use Nearpod to collect responses and discuss the answers.
Closure	- Summarize the Lesson Learning Outcomes and get affirmation from students on these. Spend 5 minutes to wrap up and consolidate the learnings - Suggested Video Lecture https://nptel.ac.in/courses/106/102/106102220/ - Discussion on expected / sample questions. - Home Assignment: 1. Write a short note on the evolution of AI 2. Define AI with examples and discuss its applications
Evaluation	1. Reflective Questions (What, why, Who?). Allow students to answer and discuss. 2. Responses acquired from Near Pod Quiz on AI Spend 5 minutes to evaluate student assimilation of the lesson contents



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Topic: Turing Test & Turing machine

Objectives	At the end of the lesson the student shall be able to: <ul style="list-style-type: none">• Understand the concept of Turing Test• Realise about its evolution• Learn about the working of Turing machine
Teaching Aids (if any)	<ul style="list-style-type: none">• PowerPoint Presentation• Use of Near Pod engagement tool for online quiz• Pen Tablet for highlighting important points• Google meet for conduct of online classes/Chalk & Talk for offline classes• Google Classroom for sharing of relevant Links /video lectures/E-content
Teaching Development	<p>Introduction (5 minutes) Ask questions</p> <ul style="list-style-type: none">• Who was Alan Turing & why the term Turing test? <p>Development (30 minutes)</p> <ul style="list-style-type: none">• History of Turing test• Definition of Turing Machine• Working of Turing machine <p>Exercise (5 minutes)</p> <ul style="list-style-type: none">• Ask students to explain the features of Turing test• Use Google form to collect responses and discuss the answers.
Closure	<ul style="list-style-type: none">- Summarize the Lesson Learning Outcomes and get affirmation from students on these. Spend 5 minutes to wrap up and consolidate the learnings- Suggested Video Lecture- https://nptel.ac.in/courses/106/106/106106049/- Discussion on expected / sample questions.- Home Assignment:<ul style="list-style-type: none">• Write a short note on the evolution of AI• Define AI with examples and discuss its applications
Evaluation	<ul style="list-style-type: none">• Reflective Questions (What, why, Who?). Allow students to answer and discuss.• Responses acquired from Near Pod Quiz on AI <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>



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Topic: Rational Agents

Objectives	At the end of the lesson the student shall be able to: <ul style="list-style-type: none">• Understand the concept of Rational Agents• Learn about the working of Rational Agents
Teaching Aids (if any)	<ul style="list-style-type: none">• PowerPoint Presentation• Use of Near Pod engagement tool for online quiz• Pen Tablet for highlighting important points• Google meet for conduct of online classes/Chalk & Talk for offline classes• Google Classroom for sharing of relevant Links /video lectures/E-content
Teaching Development	<p>Introduction (5 minutes) Ask questions</p> <ul style="list-style-type: none">• Who is an agent?• What are different approaches/definitions of AI? <p>Development (30 minutes)</p> <ul style="list-style-type: none">• Introduction to Rational Agents• Explanation on its working.• Discussion on various approaches to AI. <p>Exercise (5 minutes)</p> <ul style="list-style-type: none">• Ask students to explain the features of Turing test• Use Google form to collect responses and discuss the answers.
Closure	<ul style="list-style-type: none">- Summarize the Lesson Learning Outcomes and get affirmation from students on these. Spend 5 minutes to wrap up and consolidate the learnings- Suggested Video Lecture- https://nptel.ac.in/courses/106/106/106106049/- Discussion on expected / sample questions.- Home Assignment:<ul style="list-style-type: none">• Write a short note on the evolution of AI• Define AI with examples and discuss its applications
Evaluation	<ul style="list-style-type: none">• Reflective Questions (What, why, Who?). Allow students to answer and discuss.• Responses acquired from Near Pod Quiz on AI <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>



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Topic: State Space Representation

Objectives	At the end of the lesson the student shall be able to: <ul style="list-style-type: none">• Understand the State Space Representation of Problems• Learn about its significance• Analyse the process of solving games
Teaching Aids (if any)	<ul style="list-style-type: none">• PowerPoint Presentation• Use of Near Pod engagement tool for online quiz• Pen Tablet for highlighting important points• Google meet for conduct of online classes/Chalk & Talk for offline classes• Google Classroom for sharing of relevant Links /video lectures/E-content
Teaching Development	<p>Introduction (5 minutes) Ask questions</p> <ul style="list-style-type: none">• What is tic-tac-toe?• What is the strategy used to solve the game of 8-queen puzzle? <p>Development (30 minutes)</p> <ul style="list-style-type: none">• Definition/Introduction of state space representation• Explanation on Representation of problems• Discussion on Tic-Tac-Toe,8-queen problem,8-puzzle problem <p>Exercise (5 minutes)</p> <ul style="list-style-type: none">• Ask students to explain the strategy used in above mentioned problems. <p>Use Google form to collect responses and discuss the answers.</p>
Closure	<ul style="list-style-type: none">• Summarize the Lesson Learning Outcomes and get affirmation from students on these. Spend 5 minutes to wrap up and consolidate the learnings• Suggested Video Lecture• https://www.youtube.com/watch?v=xajgSUci9zs• Discussion on expected / sample questions.• Home Assignment:• Write a short note on the state space search• Explain the strategy used in above mentioned problems.
Evaluation	<ol style="list-style-type: none">1. Reflective Questions (What, why, Who?). Allow students to answer and discuss.2. Responses acquired from Near Pod Quiz on AI <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>



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Topic: Game Playing

Objectives	At the end of the lesson the student shall be able to: <ul style="list-style-type: none">• Understand the concept of Game playing• Learn about its significance• Analyse the process of solving games
Teaching Aids (if any)	<ul style="list-style-type: none">• PowerPoint Presentation• Use of Near Pod engagement tool for online quiz• Pen Tablet for highlighting important points• Google meet for conduct of online classes/Chalk & Talk for offline classes• Google Classroom for sharing of relevant Links /video lectures/E-content
Teaching Development	<p>Introduction (5 minutes) Ask questions</p> <ul style="list-style-type: none">• What is Game playing?• What is the strategy used to solve the game of 8-queen puzzle?• What is the strategy used to solve the Tic-Tac-Toe? <p>Development (30 minutes)</p> <ul style="list-style-type: none">• Definition/Introduction of Game playing• Explanation on Plausible move generator• Discussion on static evaluation function <p>Exercise (5 minutes)</p> <ul style="list-style-type: none">• Ask students to explain the strategy used in above mentioned problems. <p>Use Google form to collect responses and discuss the answers.</p>
Closure	<ul style="list-style-type: none">• Summarize the Lesson Learning Outcomes and get affirmation from students on these. Spend 5 minutes to wrap up and consolidate the learnings• Suggested Video Lecture https://www.youtube.com/watch?v=RuWFxh9aRmc <p>Discussion on expected / sample questions. Home Assignment:</p> <ul style="list-style-type: none">• Write a short note on the Game playing• Explain the terms Plausible move generator & Static evaluation function.
Evaluation	<ul style="list-style-type: none">• Reflective Questions (What, why, Who?). Allow students to answer and discuss.• Responses acquired from Near Pod Quiz on game playing <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>



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Topic: Minimax Algorithm

Objectives	At the end of the lesson the student shall be able to: <ul style="list-style-type: none">• Understand the concept of Minimax Algorithm• Learn about its significance• Analyse the process of solving game tree
Teaching Aids (if any)	<ul style="list-style-type: none">• PowerPoint Presentation• Use of Near Pod engagement tool for online quiz• Pen Tablet for highlighting important points• Google meet for conduct of online classes/Chalk & Talk for offline classes• Google Classroom for sharing of relevant Links /video lectures/E-content
Teaching Development	<p>Introduction (5 minutes) Ask questions</p> <ul style="list-style-type: none">• What is Game playing?• What is the strategy used to solve the Tic-Tac-Toe? <p>Development (30 minutes)</p> <ul style="list-style-type: none">• Definition/Introduction of Minimax Strategy• Explanation on Minimax Search procedure• Discussion of algorithm using Minimax Algorithm <p>Exercise (5 minutes)</p> <ul style="list-style-type: none">• Ask students to explain the strategy used in above mentioned algorithm. <p>Use Google form to collect responses and discuss the answers.</p>
Closure	<ul style="list-style-type: none">• Summarize the Lesson Learning Outcomes and get affirmation from students on these. Spend 5 minutes to wrap up and consolidate the learnings• Suggested Video Lecture https://www.youtube.com/watch?v=a2tqR2eUlek <p>Discussion on expected / sample questions.</p> <p>Home Assignment:</p> <ul style="list-style-type: none">• Write a short note on the Minimax algorithm with one example
Evaluation	<ul style="list-style-type: none">• Reflective Questions (What, why, Who?). Allow students to answer and discuss.• Responses acquired from Near Pod Quiz on Minimax Algorithm <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>



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Topic: Alpha Beta Algorithm

Objectives	At the end of the lesson the student shall be able to: <ul style="list-style-type: none">• Understand the concept of Alpha Beta Algorithm• Learn about its significance• Analyse the process of solving game tree
Teaching Aids (if any)	<ul style="list-style-type: none">• PowerPoint Presentation• Use of Near Pod engagement tool for online quiz• Pen Tablet for highlighting important points• Google meet for conduct of online classes/Chalk & Talk for offline classes• Google Classroom for sharing of relevant Links /video lectures/E-content
Teaching Development	<p>Introduction (5 minutes) Ask questions</p> <ul style="list-style-type: none">• What is Minimax Algorithm?• What is the strategy used to solve the game tree using Minimax? <p>Development (30 minutes)</p> <ul style="list-style-type: none">• Definition/Introduction of Alpha Beta Algorithm• Explanation on key points• Discussion on its working <p>Exercise (5 minutes)</p> <ul style="list-style-type: none">• Ask students to explain the strategy used in above mentioned algorithm <p>Use Google form to collect responses and discuss the answers.</p>
Closure	<ul style="list-style-type: none">• Summarize the Lesson Learning Outcomes and get affirmation from students on these. Spend 5 minutes to wrap up and consolidate the learnings• Suggested Video Lecture https://www.youtube.com/watch?v=0oqhN5tvLgA Discussion on expected / sample questions. Home Assignment:<ul style="list-style-type: none">• Write a short note on the Alpha Beta Algorithm• Explain the method using one example.
Evaluation	<ul style="list-style-type: none">• Reflective Questions (What, why, Who?). Allow students to answer and discuss.• Responses acquired from Near Pod Quiz on AI <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>



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Topic: Expert Systems

Objectives	At the end of the lesson the student shall be able to: a) Understand the significance of Expert System b) Learn about its different components c) Enlist its characteristics.
Teaching Aids (if any)	a) PowerPoint Presentation b) Use of Google Forms for online quiz c) Pen Tablet for highlighting important points d) Google meet for conduct of online classes/Chalk & Talk for offline classes e) Google Classroom for sharing of relevant Links /video lectures/E-content
Teaching Development	1. Introduction (5 minutes) Ask questions - What do you mean by Expert systems? - Where do you find Expert systems being used? - Name few experts systems you know. 2. Development (30 minutes) - Definition/Introduction of ES - Block diagram of Expert system - Description of each block in detail - Working of components of ES 3. Exercise (5 minutes) - Ask students to identify and explain role of each component. - Use Google Form to collect responses and discuss the answers.
Closure	- Summarize the Lesson Learning Outcomes and get affirmation from students on these. Spend 5 minutes to wrap up and consolidate the learnings - Suggested Video Lecture • https://nptel.ac.in/content/storage2/courses/126104006/LectureNotes/Week-3_Expert%20Systems.pdf • https://www.youtube.com/watch?v=lyrFcgqFmIk - Discussion on expected / sample questions. - Home Assignment: 1. Explain Expert systems with components 2. What is the significance of Expert Systems and enumerate its characteristics
Evaluation	1. Reflective Questions (What, why, Who?). Allow students to answer and discuss. 2. Responses acquired from Google form Quiz on Expert System Spend 5 minutes to evaluate student assimilation of the lesson contents



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Topic: Expert Systems development Life Cycle

Objectives	At the end of the lesson the student shall be able to: a) Understand the concept of ESDLC b) Comprehend its various phases
Teaching Aids (if any)	a) PowerPoint Presentation b) Use of Nearpod tool for online quiz c) Pen Tablet for highlighting important points d) Google meet for conduct of online classes/Chalk & Talk for offline classes e) Google Classroom for sharing of relevant Links /video lectures/E-content
Teaching Development	1. Introduction (5 minutes) Ask questions - What do you mean by Expert system? - What do you mean by SDLC? - Why is SDLC required? 2. Development (30 minutes) - Definition/Introduction of ESDLC - Block diagram of Expert system Development life Cycle - Description of each phase in detail 3. Exercise (5 minutes) - Ask students to enlist the various phases of ESDLC. - Use Google Form to collect responses and discuss the answers.
Closure	- Summarize the Lesson Learning Outcomes and get affirmation from students on these. Spend 5 minutes to wrap up and consolidate the learnings - Suggested Video Lecture https://www.youtube.com/watch?v=lyrFcgqFmlk - Discussion on expected / sample questions. - Home Assignment: 1. Explain the concept of Expert Development Life Cycle 2. Discuss the various phases of Expert Development Life Cycle
Evaluation	1. Reflective Questions (What, why, Who?). Allow students to answer and discuss. 2. Responses acquired from Nearpod Quiz on Expert System Development Life Cycle Spend 5 minutes to evaluate student assimilation of the lesson contents



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Topic: MYCIN & DENDRAL expert systems
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Objectives	At the end of the lesson the student shall be able to: a) Understand the concept of various types of Expert systems b) Comprehend the characteristics of each type.
Teaching Aids (if any)	a) PowerPoint Presentation b) Use of Nearpod tool for online quiz c) Pen Tablet for highlighting important points d) Google meet for conduct of online classes/Chalk & Talk for offline classes e) Google Classroom for sharing of relevant Links /video lectures/E-content
Teaching Development	1. Introduction (5 minutes) Ask questions - What do you mean by Expert system? - What do you mean by ESDLC? 2. Development (30 minutes) - Definition/Introduction of MYCIN and DENDRAL - Block diagram of MYCIN Expert system - Description of its characteristics 3. Exercise (5 minutes) - Ask students to enlist the various types of Expert systems . - Use Google Form to collect responses and discuss the answers.
Closure	- Summarize the Lesson Learning Outcomes and get affirmation from students on these. Spend 5 minutes to wrap up and consolidate the learnings - Suggested Video Lecture https://www.youtube.com/watch?v=lyrFcgqFmIk - Discussion on expected / sample questions. - Home Assignment: <ul style="list-style-type: none">• Explain the working of MYCIN• Discuss the concept of Dendral Expert systems
Evaluation	1. Reflective Questions (What, why, Who?). Allow students to answer and discuss. 2. Responses acquired from Nearpod Quiz on Expert System Spend 5 minutes to evaluate student assimilation of the lesson contents