

## Course Coordinator Report

### **Course Name: Artificial Intelligence**

A free Add-On Course for UG students in the Department of Computer Science, Shri Shivaji Education Society Amravati's Science College, Congress Nagar, Nagpur was held from 6<sup>th</sup> January 2023 to 11<sup>th</sup> March 2023. The course title was "Artificial Intelligence". It is the complete beginner to Expert Course was perfect for anyone who wants to learn Artificial Intelligence. AI encompasses various subfields, including machine learning, natural language processing, and computer vision. Machine learning, a core aspect, involves algorithms that enable computers to learn from and make decisions based on data. AI systems can perform tasks such as recognizing speech, understanding natural language, and playing strategic games.

- In this course students learned different approaches to Artificial Intelligence, including the "good old" symbolic approach with **Knowledge Representation** and reasoning ([GOFAI](#)), **Neural Networks** and **Deep Learning**, which are at the core of modern AI and **Neural Architectures** for working with images and text.

The course duration was 10 weeks (30 hours). Two theory classes were engaged on Friday & Saturday and one Practical was engaged in every week. The structure of marking system was 60 marks on theory paper and 40 marks on practical execution. The question paper of theory examination was in MCQ type of 60 questions with four multiple choices. Practical examination was also taken on this course for 40 marks. Out of 60, 58 students appeared and passed in both theory and practical examination. The result was prepared and certificates were distributed to the students.

Dr. S. R. Gedam  
Course Coordinator

To,  
The Principal  
SSES Am's Science College,  
Congress Nagar, Nagpur-12

Subject: Permission to conduct the add on courses in the Computer  
Science department during the session 2022-2023

Respected Sir,

This is to request you that, we wish to conduct the add on courses in  
Computer Science department these are the certificate courses of thirty  
hours' time duration.


The details of the courses are submitted here with.

Hence please permit to run the same and oblige me.

Thanking you

Yours sincerely

2/07/2022

  
Professor & Head  
Department of Computer Science  
S.S.E.S. Am's Science College  
Congress Nagar, Nagpur

*Permitted*  
*A. D. Gore*

**SSES Amravati's Science College, Congress Nagar, Nagpur-12**

**DEPARTMENT OF COMPUTER SCIENCE**

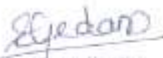
**Date: 19-12-2022**

## Notice

All the students of B.Sc. are hereby informed that Department of Computer Science is conducting a skill based course titled Artificial Intelligence. This course aims to enhance your practical skills and knowledge in Artificial Intelligence. Register on or before 24 December 2022. Looking forward to your active participation.

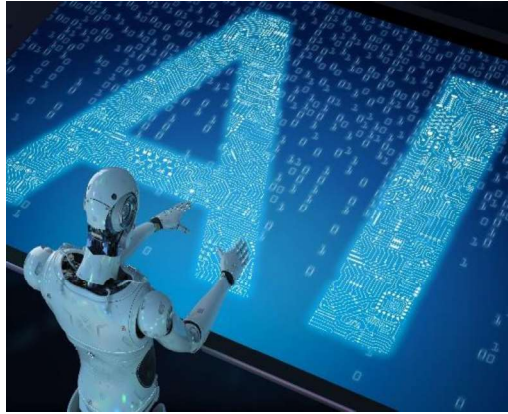
### Course Details:

- **Course Name:**Artificial Intelligence
- **Duration:**6 January 2023 to 11 March 2023
- **Schedule:**10 week
- **Eligibility:**Any Undergraduate

  
Course Coordinator  
**Dr. S. Gedam**  
Assistant Professor  
Department of Computer Science  
S.S.E.S. Am's Science College,  
Congress Nagar, Nagpur

  
Head of Department  
Professor & Head  
Department of Computer Science  
S.S.E.S. Am's Science College,  
Congress Nagar, Nagpur

# CERTIFICATE COURSE IN ARTIFICIAL INTELLIGENCE



## Free Certificate Course for College Students

**Duration – 30 Hours( 10 Weeks)**

**Process of Registration- Early**

**Birds will be admitted**

### Course Objectives:

- 1) To Understand the Fundamentals of AI
- 2) Explore the Ethical and Societal Impacts of AI
- 3) Understand Advanced AI Topics
- 4) Apply AI Techniques to Real-World Problems:
- 5) Critically Evaluate AI Solutions



**Department of Computer Science**  
**SSES Amt's Science College, Congress**  
Nagar, Nagpur

\* AI encompasses various subfields, including machine learning, natural language processing, and computer vision. Machine learning, a core aspect, involves algorithms that enable computers to learn from and make decisions based on data. AI systems can perform tasks such as recognizing speech, understanding natural language, and playing strategic games. They are used in diverse applications like healthcare for diagnosing diseases, in finance for fraud detection, and in autonomous vehicles for navigation. Ethical considerations are critical in AI development, addressing issues like bias, privacy, and job displacement. Continuous advancements in AI technology promise significant benefits but also pose complex challenges that society must navigate responsibly.

**Last Date of Registration: 24 December 2022**

**For Registration Contact: Dr. (Mrs) Shilpa R. Gedam (Coordinator)**

DEPARTMENT OF COMPUTER SCIENCE

COURSE MODULE AND SYLLABUS

**Course Title: Certificate Course in Artificial Intelligence**

**Course Coordinator : Dr. Mrs. Shilpa R. Gedam**

**Course description:**

This course provides a comprehensive introduction to the fundamental concepts and techniques of Artificial Intelligence (AI). Students will explore the core principles of AI, including problem-solving, knowledge representation, reasoning, machine learning, natural language processing, and robotics. The course covers both theoretical foundations and practical applications of AI, emphasizing how AI technologies can be applied to solve real-world problems.

1. **History and Evolution of AI:** Understanding the development and milestones in AI.
2. **Search Algorithms:** Techniques for problem-solving and decision-making in AI.
3. **Machine Learning:** Supervised, unsupervised, and reinforcement learning methodologies.
4. **Neural Networks and Deep Learning:** Fundamentals and applications in various domains.
5. **Natural Language Processing:** Techniques for language understanding and generation.
6. **Computer Vision:** Methods for interpreting and processing visual data.
7. **AI Ethics and Society:** Exploring the ethical implications and societal impact of AI.

**Course Objectives:**

- 1) To Understand the Fundamentals of AI
- 2) Explore the Ethical and Societal Impacts of AI
- 3) Understand Advanced AI Topics
- 4) Apply AI Techniques to Real-World Problems:
- 5) Critically Evaluate AI Solutions

**Instructional Strategies:** Theory class, Practical, Video clips, Models etc.

**Evaluation Strategies:** Oral discussions and Final MCQ examination.

**Course outline:** Course Outlines:

- 1) **Introduction to AI, Problem Solving and Search Algorithms**
- 2) **Knowledge Representation and Reasoning**
- 3) **Machine Learning Basics**
- 4) **Neural Networks and Deep Learning**
- 5) **Natural Language Processing (NLP)**

- 6) **Computer Vision**
- 7) **Reinforcement Learning**
- 8) **AI Ethics and Society**
- 9) **Practical AI Projects**

**Course Outcomes (COs):**

- 1) To Gain a solid understanding of the basic concepts and techniques used in AI.
- 2) To Develop the ability to implement AI algorithms and models using programming languages like Python.
- 3) To Apply AI methods to practical problems in fields such as healthcare, finance, and autonomous systems.
- 4) To Critically analyze the ethical and societal issues related to AI and propose responsible solutions.

**Duration of course:** Ten weeks (30 Hours)

**The Structure of Syllabus and system of evaluation -**

Course	Theory Papers and Practical	Total Marks	
		Theory	Practical
Certificate Course in Artificial Intelligence	Theory paper- Artificial Intelligence * Theory examination will be of MCQ pattern having 60 or 80 questions each with equal marks.	60	40
	* Practical examination will be based on performance evaluation in the laboratory	100	

*(Signature)*  
 Internal Quality Assurance Cell  
 (IQAC)  
 S. S. E. S. A. Science College  
 Congress Nagar, Nagpur.

*(Signature)*  
 Principal  
 S. S. E. S. Amravati's  
 Science College, Nagpur.

# SYLLABUS

Certificate course (10 weeks)  
(Artificial Intelligence)

## Theory-

### UNIT- I

Introduction to AI, Problem Solving and Search Algorithms  
Knowledge Representation and Reasoning  
Machine Learning Basics

### UNIT – II

Neural Networks and Deep Learning  
Natural Language Processing (NLP)  
Computer Vision

### UNIT – III

Reinforcement Learning  
AI Ethics and Society  
Practical AI Projects

## Practicals-

1. Write a Program to implement Tic Tac Toe Game, Water Jug Problem.
2. Write a Program to implement Breadth first search algorithm, Depth-First Search (DFS) algorithm and Best first search algorithm.
3. Write a Program to implement A\* Algorithm, AO\* Algorithm and min - max algorithm.
4. Write a program to implement Alpha-Beta pruning and Hierarchical planning.
5. Write a program to demonstrate pattern recognition for recognizing email addresses within a block of text.
6. Write a Program to demonstrate text preprocessing and tokenization using regular expressions.
7. Write a Program to implement psychological modelling and Knowledge representation in AI.

## Distribution of marks: -

UNIT I- 20 marks (Theory)

UNIT II- 20 marks(Theory)

UNIT III- 20 marks (Theory)+40 (practicals)

### Week-wise teaching plan:

Week	Hrs.	Syllabus
Week 1	1	Introduction to AI
	2	Problem Solving, Search Algorithms
Week 2	1	Knowledge Representation
	2	Knowledge Reasoning
Week 3	1	Machine Learning Basics
	2	Machine Learning Basics
Week 4	1	Neural Networks and
	1	Deep Learning
Week 5	1	Natural Language Processing (NLP)
	2	Language models and sequence labeling
Week 6	2	Computer Vision
	1	Image processing fundamentals
Week 7	2	Convolutional neural networks (CNNs) for vision tasks
	1	Applications in image classification, object detection, and face recognition
Week 8	2	Reinforcement Learning
	1	Markov decision processes (MDPs)
Week 9	2	AI Ethics and Society
	1	AI Ethics and Society
Week 10	1	Practical AI Projects
	2	Practical AI Projects



**SSES AMT'S SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12**

**Certificate Course in Artificial Intelligence  
Time Table**


<b>Day</b>	<b>Theory</b>
<b>Friday</b>	<b>SRG (B9) Theory 4.00 PM – 5.00 PM</b>
<b>Saturday</b>	<b>SRG (B9) Theory, 4.00 PM – 5.00 PM</b>
	<b>SRG (Computer Laboratory) practical, 5.00 PM – 6.00 PM</b>

### List of Students enrolled

1	Akansha A. Lokhande	31	Harshal B Rangari
2	Akshita P. Mohdikar	32	Harshita S Varade
3	AmrutaV Gawande	33	Harshu C Makode
4	Anushka V Mall	34	Himanshu D Ramteke
5	Anushka V Kuite	35	Isha D Chaudhari
6	Chetana M Pardhi	36	Nidhi S Bawangade
7	Chetna P Sirde	37	Nidhi V Khabalkar
8	Devshri A Sahu	38	Niharika M Ambekar
9	Lavanya R Talnikar	39	Nishant D Bhure
10	Madhua S Maske	40	Nupul N Sontakke
11	Minal N Panpatte	41	Prathmesh D Gumgaonkar
12	Neha G Gawande	42	Pratiksha B Dange
13	Neha Khandate	43	Priya Kumari Prasad Deonath
14	Payal Bhagat	44	Priyanka M Kharwar
15	Prachi Thakre	45	Priyansh B Koche
16	Pranjal Parate	46	Sanchit C Wakde
17	Prateeksha Bhayde	47	Sanjana M Ghatole
18	Prerna Patil	48	Sanskriti S Kadu
19	Priya Tiwari	49	Saumya F Upgade
20	Punessa kodane	50	Saurabh R Bhure
21	Rajvi Mamulkar	51	Saurabh V Chaple
22	Raksha Raut	52	Sejal V Suruse
23	Raksha Satfale	53	Jay Chandel
24	Rupali Dhudhankar	54	Khush Rang Bhendarkar
25	Rutuja Bhujade	55	Mahendra Dwangan
26	Sakshi Waghe	56	Mandar Sulakhe
27	Saloni Ganvir	57	Nikhil Nasare
28	Sanika Marwade	58	Pratik Chavan
29	Rahul Nasare	59	Vaidehi S Jibhakate
30	Sagar Bisen	60	Yogeshree D Barai

## Attendance Sheet

		Session: 2022-2023																									
		Attendance Sheet ( Duration 6-Jan -2023 to 11-Mar-2023)																									
		Course -Artificial Intelligence																									
Sr. No	Name of Student	6/1	7/1	13/1	14/1	14/1	20/1	21/1	27/1	28/1	28/1	3/2	4/2	10/2	11/2	11/2	12/2	13/2	18/2	24/2	25/2	29/2	3/3	4/3	10/3	11/3	11/3
1	Akansha A. Lokhande	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
2	Akshita P. Mohdikar	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
3	Amruta V Gawande	A	A	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
4	Anushka V Mall	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
5	Anushka V Kuite	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
6	Chetana M Pardhi	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
7	Chetna P Sirde	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
8	Devshri A Sahu	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
9	Lavanya R Talnikar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
10	Madhua S Maske	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
11	Minal N Panpatte	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
12	Neha G Gawande	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
13	Neha Khandate	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
14	Payal Bhagat	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
15	Prachi Thakre	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
16	Pranjal Parate	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
17	Prateeksha Bhayde	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
18	Prerna Patil	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
19	Priya Tiwari	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
20	Punesh Kodane	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
21	Rajvi Mamulkar	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

  
**Vedansh**  
 Assistant Professor  
 Department of Computer Science  
 Am's Science College,  
 Nagpur





**SSES Amravati's Science College, Congress Nagar, Nagpur-12**

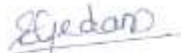
**DEPARTMENT OF COMPUTER SCIENCE**

**Date:11-03-2023**

## Notice

All the students who are registered for the Certificate course in Artificial intelligence are hereby informed that the theory and practical examination is scheduled as given below.

<b>Examination</b>	<b>Date</b>	<b>Place</b>	<b>Time</b>
<b>Theory</b>	<b>17-03-2023</b>	<b>Computer laboratory</b>	<b>11:00 to 1:00</b>
<b>Practical</b>	<b>18-03-2023</b>	<b>Computer laboratory</b>	<b>11:00 to 1:00</b>

  
Course Coordinator  
**Dr. S. Gedam**  
Assistant Professor  
Department of Computer Science  
S & E S. Am's Science College,  
Congress Nagar, Nagpur.

  
Head of Department  
Professor & Head  
Department of Computer Science  
S & E S. Am's Science College  
Congress Nagar, Nagpur.

# Attendance Sheet: Theory/ Practical Examination

SSES Amravati's Science College, Congress Nagar, Nagpur-12

DEPARTMENT OF COMPUTER SCIENCE

COURSE MODULE AND SYLLABUS

Course Title: Certificate Course in Artificial Intelligence

Date: 17-03-2023

## Attendance Sheet: Theory/ Practical Examination


Roll No.	Name of Student	17-03-2023	18-03-2023
B2AI-1	Akasha A. Lokhande		
B2AI-2	Akshita P. Mohdakar		
B2AI-3	Amruta V Gawande		
B2AI-4	Anushka V Mall		
B2AI-5	Anushka V Kulte		
B2AI-6	Chetana M Pardhi		
B2AI-7	Chetna P Sirda		
B2AI-8	Devshri A Sahu		
B2AI-9	Lavanya R Talnikar		
B2AI-10	Madhua S Maske		
B2AI-11	Minal N Parsatte		
B2AI-12	Neha G Gawande		
B2AI-13	Neha Khandate		
B2AI-14	Payal Rhagat		
B2AI-15	Prachi Thakre		
B2AI-16	Pranjal Parate		
B2AI-17	Prateeksha Bhayde		
B2AI-18	Prerna Patil		
B2AI-19	Priya Tiwari		

B2AI-20	Purnasha Kodane	Kodane P	Kodane P
B2AI-21	Rajvi Mamukar	Rajvi M	Rajvi M
B2AI-22	Raksha Raat	Raat R	Raat R
B2AI-23	Raksha Sattale	Sattale R	Sattale R
B2AI-24	Rupali Dhudhankar	Dhudhankar R	Dhudhankar R
B2AI-25	Rutuja Bhujade	Bhujade R	Bhujade R
B2AI-26	Sakshi Waghe	Waghe S	Waghe S
B2AI-27	Saloni Gamir	Gamir S	Gamir S
B2AI-28	Sonika Marwade	Marwade S	Marwade S
B2AI-29	Rahul Masare	Masare S	Masare S
B2AI-30	Sagar Bisen	Bisen S	Bisen S
B2AI-31	Harshal B Rangari	Rangari S	Rangari S
B2AI-32	Harshita S Varade	Varade S	Varade S
B2AI-33	Harshu C Malode	Malode S	Malode S
B2AI-34	Himanchu D Rambekar	Rambekar S	Rambekar S
B2AI-35	Isha D Choudhari	Choudhari S	Choudhari S
B2AI-36	Nidhi S Bowangade	Bowangade S	Bowangade S
B2AI-37	Nidhi V Khabalkar	Khabalkar S	Khabalkar S
B2AI-38	Niharika M Ambekar	Ambekar S	Ambekar S
B2AI-39	Nishaant D Bhure	Bhure S	Bhure S
B2AI-40	Nupul N Sontakke	Sontakke S	Sontakke S
B2AI-41	Prathmesh D Gunggaonkar	Gunggaonkar S	Gunggaonkar S
B2AI-42	Pratiksha B Dange	Dange S	Dange S
B2AI-43	Priya Kumari Prasad Beonath	Beonath S	Beonath S
B2AI-44	Priyanka M Khanwar	Khanwar S	Khanwar S
B2AI-45	Priyansh B Koche	Koche S	Koche S
B2AI-46	Sanchit C Wakde	Wakde S	Wakde S
B2AI-47	Sanjana M Ghatole	Ghatole S	Ghatole S



B2AI-48	Sanskriti S Kadu	Sanskriti	Sanskriti
B2AI-49	Saumya F Uggade	Abarot	Uggade
B2AI-50	Saurabh R Bhure	S. Bhure	Bhure
B2AI-51	Saurabh V Chaple	Chaple	Chaple
B2AI-52	Sejal V Suruse	Suruse	Suruse
B2AI-53	Jay Chandel	JChandel	JChandel
B2AI-54	Khush Rang Bhenderkar	Khush B	Khush B
B2AI-55	Mahendra Dwangan	Dwangan	Dwangan
B2AI-56	Mandar Sulakhe	Mandar	Mandar
B2AI-57	Nihil Nasare	Nasare	Nasare
B2AI-58	Pratik Chavan	Chavan	Chavan
B2AI-59	Vaidehi S Jibhakte	Vaidhite	Vaidhite
B2AI-60	Yogeshree D Barai	Barai	Barai

  
 Course Coordinator  
**Dr. S. Gedam**  
 Assistant Professor  
 Department of Computer Science  
 S. S. S. Amis Science College  
 Congress Nagar, Nagpur

  
 Head of Department  
 Professor & Head  
 Department of Computer Science  
 S. S. S. Amis Science College  
 Congress Nagar, Nagpur

Certificate course in Artificial Intelligence  
Theory Examination

Date: 17/03/2023

Max Marks : 60

Time :11:00 am to 1:00 pm

Roll No :

Name of Student :

Note: 1. All questions are compulsory and carry equal marks  
2. Tick only one correct option

1. What is the first step in image processing?

- A) Object recognition
- B) Image digitization
- C) Feature extraction
- D) Convolution

2. Which of the following is used to reduce noise in an image?

- A) Edge detection
- B) Histogram equalization
- C) Smoothing filter
- D) Segmentation

3. What does the term 'pixel' stand for in image processing?

- A) Picture element
- B) Picture excellence
- C) Pixel element
- D) Pixel experiment

4. Which technique is used to enhance the contrast of an image?

- A) Blurring
- B) Edge detection
- C) Histogram equalization
- D) Thresholding

5. Which algorithm is commonly used for edge detection in images?

- A) K-means
- B) Canny
- C) Backpropagation
- D) AdaBoost

6. Feature detection in images involves identifying:

- A) Specific patterns or structures
- B) The overall brightness
- C) The color distribution
- D) The image size

7. What is the purpose of the HOG (Histogram of Oriented Gradients) descriptor?

- A) Image segmentation
- B) Feature detection
- C) Color correction
- D) Noise reduction

8. Which method is used for matching feature points between two images?

- A) Convolution
- B) SIFT (Scale-Invariant Feature Transform)
- C) Pooling
- D) Data augmentation

9. What is the primary purpose of a convolutional layer in a CNN?

- A) To reduce the image size
- B) To detect features such as edges and textures
- C) To convert the image to grayscale

- D) To label the image

10. **Pooling layers in CNNs are used to:**

- A) Increase the resolution of the image
- B) Reduce the spatial dimensions of the feature maps
- C) Add more features to the image
- D) Normalize the image data

11. **Which activation function is commonly used in CNNs to introduce non-linearity?**

- A) Sigmoid
- B) ReLU (Rectified Linear Unit)
- C) Tanh
- D) Softmax

12. **In a CNN, which layer is typically used to generate the final output labels for classification tasks?**

- A) Convolutional layer
- B) Pooling layer
- C) Fully connected layer
- D) Batch normalization layer

13. **Image classification involves:**

- A) Detecting objects within an image
- B) Assigning a label to the entire image
- C) Segmenting an image into regions
- D) Enhancing the image quality

14. **Which of the following is an example of an object detection algorithm?**

- A) ResNet
- B) YOLO (You Only Look Once)
- C) VGGNet
- D) LeNet

15. **Face recognition systems typically use which of the following techniques?**

- A) Edge detection
- B) Facial feature extraction and matching
- C) Color segmentation
- D) Image enhancement

16. **Which CNN architecture is known for its performance in image classification tasks?**

- A) LSTM
- B) AlexNet
- C) GAN
- D) Transformer

17. **In object detection, what does the term "IoU" stand for?**

- A) Input over Utilization
- B) Intersection over Union
- C) Image over Uncertainty
- D) Integration of Units

18. **A common application of CNNs in healthcare is:**

- A) Predicting patient admission rates
- B) Classifying medical images for diagnosis
- C) Scheduling medical staff
- D) Managing patient records

19. **Which technique can improve the performance of a face recognition system?**

- A) Data augmentation
- B) Image compression
- C) Grayscale conversion
- D) Data shuffling

20. **Which of the following is a supervised learning task?**

- A) Clustering
- B) Dimensionality reduction
- C) Regression
- D) Association rule learning

21. **In classification tasks, the target variable is:**

- A) Continuous
- B) Discrete
- C) Binary only
- D) Unsupervised

22. **Which algorithm is commonly used for linear regression?**

- A) K-means
- B) Linear regression
- C) Decision tree

- D) Apriori

23. **The purpose of a confusion matrix is to:**

- A) Measure the correlation between variables
- B) Summarize the performance of a classification model
- C) Reduce the dimensionality of data
- D) Cluster similar data points

24. **Which technique is used for clustering?**

- A) PCA (Principal Component Analysis)
- B) K-means
- C) Linear regression
- D) Logistic regression

25. **The goal of dimensionality reduction is to:**

- A) Increase the number of features
- B) Decrease the number of features
- C) Cluster data points
- D) Predict continuous values

26. **Which method is used for dimensionality reduction?**

- A) Hierarchical clustering
- B) K-means
- C) Principal Component Analysis (PCA)
- D) Naive Bayes

27. **What is the main difference between supervised and unsupervised learning?**

- A) Supervised learning uses labeled data, while unsupervised learning uses unlabeled data
- B) Supervised learning is used for clustering, while unsupervised learning is used for regression
- C) Supervised learning reduces dimensionality, while unsupervised learning does not
- D) Supervised learning is always more accurate than unsupervised learning

28. **Which optimization algorithm is commonly used to minimize the loss function in neural networks?**

- A) K-means
- B) Gradient Descent
- C) Apriori

- D) Naive Bayes

29. **Batch normalization is used to:**

- A) Increase the learning rate
- B) Normalize the input layer by adjusting and scaling the activations
- C) Reduce the number of neurons
- D) Perform clustering

30. **Which technique is used to prevent overfitting in a machine learning model?**

- A) Increasing the number of features
- B) Reducing the training data
- C) Early stopping
- D) Increasing the learning rate

31. **Which search strategy uses a heuristic to guide its search?**

- A) Breadth-First Search
- B) Depth-First Search
- C) A\* Search
- D) Uniform Cost Search

32. **What is the main advantage of using informed search algorithms over uninformed ones?**

- A) They are easier to implement
- B) They require less memory
- C) They can find solutions more quickly by using heuristics
- D) They guarantee the optimal solution

33. **Which of the following is a knowledge representation technique?**

- A) Neural Networks
- B) Decision Trees
- C) Semantic Networks
- D) Genetic Algorithms

34. **First-order logic is also known as:**

- A) Propositional Logic
- B) Predicate Logic
- C) Temporal Logic
- D) Modal Logic

35. **Ontologies are used in AI to:**

- A) Create learning algorithms
- B) Represent knowledge in a structured form

- C) Visualize data
- D) Optimize search algorithms

36. **What is the goal of supervised learning?**

- A) To find hidden patterns in data without labeled examples
- B) To use labeled examples to learn a mapping from inputs to outputs
- C) To group similar data points into clusters
- D) To reduce the dimensionality of the data

37. **Which of the following is an example of a classification algorithm?**

- A) Linear Regression
- B) K-Means Clustering
- C) Decision Trees
- D) Principal Component Analysis

38. **In unsupervised learning, which technique is used for grouping similar data points?**

- A) Regression
- B) Classification
- C) Clustering
- D) Dimensionality Reduction

39. **A neural network with more than one hidden layer is called:**

- A) Convolutional Neural Network
- B) Recurrent Neural Network
- C) Deep Neural Network
- D) Single Layer Perceptron

40. **Which type of neural network is primarily used for image processing?**

- A) Recurrent Neural Network
- B) Convolutional Neural Network
- C) Feedforward Neural Network
- D) Generative Adversarial Network

41. **Backpropagation is used in neural networks for:**

- A) Data preprocessing
- B) Training the network by updating weights
- C) Feature extraction
- D) Data augmentation

42. **Tokenization in NLP refers to:**

- A) Translating text to another language

- B) Converting text into individual words or phrases
- C) Generating text summaries
- D) Classifying text into categories

43. **Which model is used for predicting the next word in a sequence?**

- A) Decision Tree
- B) Support Vector Machine
- C) Hidden Markov Model
- D) Language Model

44. **Sentiment analysis aims to:**

- A) Translate text
- B) Summarize text
- C) Determine the emotional tone of text
- D) Recognize named entities in text

45. **The process of converting an image into numerical data is called:**

- A) Image segmentation
- B) Feature extraction
- C) Image recognition
- D) Image digitization

46. **Which neural network architecture is commonly used for object detection in images?**

- A) Recurrent Neural Network
- B) Generative Adversarial Network
- C) Convolutional Neural Network
- D) Feedforward Neural Network

47. **Which technique is used to identify and locate objects within an image?**

- A) Image classification
- B) Object detection
- C) Image segmentation
- D) Feature extraction

48. **In reinforcement learning, the agent learns by:**

- A) Observing expert demonstrations
- B) Using labeled training data
- C) Receiving rewards or penalties from the environment
- D) Applying heuristics

49. **A Markov decision process (MDP) is characterized by:**

- A) States, actions, rewards, and transition probabilities
- B) Input, output, and weights
- C) Clusters, centroids, and distances
- D) Nodes, edges, and labels

50. **Q-learning is a type of:**

- A) Supervised learning
- B) Unsupervised learning
- C) Reinforcement learning
- D) Semi-supervised learning

51. **Which issue is a major ethical concern in AI?**

- A) Algorithm complexity
- B) Data storage
- C) Bias and fairness
- D) Network latency

52. **AI systems can potentially lead to job displacement. This concern falls under:**

- A) Technological advancements
- B) Economic impact
- C) Privacy issues
- D) Data security

53. **Ensuring AI systems are transparent and explainable is important for:**

- A) Improving system efficiency
- B) Gaining public trust
- C) Reducing hardware costs
- D) Enhancing data storage

54. **The first step in an AI project is to:**

- A) Train the model
- B) Collect and preprocess data
- C) Deploy the system
- D) Evaluate the model

55. **What does AI primarily aim to do?**

- A) Simulate human intelligence
- B) Simulate animal behavior
- C) Automate simple tasks
- D) Increase data storage capacity

56. **Which of the following is NOT a subfield of AI?**

- A) Machine Learning
- B) Natural Language Processing
- C) Quantum Computing
- D) Computer Vision

57. **The Turing Test was proposed to test a machine's ability to exhibit:**

- A) Memory capacity
- B) Logical reasoning
- C) Human-like intelligence
- D) Speed of computation

58. **Which of the following is a current application of AI in healthcare?**

- A) Virtual reality
- B) Autonomous driving
- C) Disease diagnosis
- D) Social media management

59. **AI is extensively used in finance for:**


- A) Data entry
- B) Fraud detection
- C) Graphic design
- D) Customer service training

60. **Which of these is a popular AI trend in personal devices?**

- A) Voice assistants
- B) Email marketing
- C) Hardware encryption
- D) Textile manufacturing

<b>Grading Scheme</b>	
<b>Marks</b>	<b>Grade</b>
<b>91-100</b>	<b>O</b>
<b>81-90</b>	<b>A+</b>
<b>71-80</b>	<b>A</b>
<b>61-70</b>	<b>B+</b>
<b>51-60</b>	<b>B</b>
<b>46-50</b>	<b>C</b>

  
Course Coordinator  
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Congress Nagar, Bangalore

**SSES Amravati's Science College, Congress Nagar, Nagpur-12**

**DEPARTMENT OF COMPUTER SCIENCE**

**COURSE MODULE AND SYLLABUS**

**Course Title: Certificate Course in Artificial Intelligence**

Date: 25-03-2023

**Attendance Sheet: Theory/ Practical Examination**


Roll . No.	Name of Student	Theory (60)	Practical (40)	Total (100)	Grade
B2AI-1	Akansha A. Lokhande	53	31	84	A+
B2AI-2	Akshita P. Mohdiker	43	36	79	A
B2AI-3	AmrutaV Gawande	54	36	90	A+
B2AI-4	Anushka V Mall	42	37	79	A
B2AI-5	Anushka V Kuite	56	31	87	A+
B2AI-6	Chetana M Pardhi	45	32	77	A
B2AI-7	Chetna P Sirde	34	26	60	B
B2AI-8	Devshri A Sahu	31	26	57	B
B2AI-9	Lavanya R Talnikar	31	36	67	B+
B2AI-10	Madhua S Maske	40	37	77	A
B2AI-11	Minal N Panpatte	60	Absent	60	Absent
B2AI-12	Neha G Gawande	56	27	83	A+
B2AI-13	Neha Khandate	42	30	72	A
B2AI-14	Payal Bhagat	56	38	94	O
B2AI-15	Prachi Thakre	58	30	88	A+
B2AI-16	Pranjal Parate	34	30	64	B+
B2AI-17	Prateeksha Bhayde	57	37	94	O
B2AI-18	Prerna Patil	53	36	89	A+
B2AI-19	Priya Tiwari	42	36	78	A



B2AI-20	Punesha kodane	50	31	81	A+
B2AI-21	Rajvi Mamulkar	43	26	69	B+
B2AI-22	Raksha Raut	39	25	64	B+
B2AI-23	Raksha Satfale	45	33	78	A
B2AI-24	Rupali Dhudhankar	48	33	81	A+
B2AI-25	Rutuja Bhujade	35	35	70	B+
B2AI-26	Sakshi Waghe	43	39	82	A+
B2AI-27	Saloni Ganvir	36	25	61	B+
B2AI-28	Sanika Marwade	45	32	77	A
B2AI-29	Rahul Nasare	33	33	66	B+
B2AI-30	Sagar Bisen	49	26	75	A
B2AI-31	Harshal B Rangari	33	40	73	A
B2AI-32	Harshita S Varade	40	29	69	B+
B2AI-33	Harshu C Makode	53	31	84	A+
B2AI-34	Himanshu D Ramteke	56	37	93	O
B2AI-35	Isha D Chaudhari	35	32	67	B+
B2AI-36	Nidhi S Bawangade	52	34	86	A+
B2AI-37	Nidhi V Khabalkar	43	35	78	A
B2AI-38	Niharika M Ambekar	59	32	91	O
B2AI-39	Nishant D Bhure	60	27	87	A+
B2AI-40	Nupul N Sontakke	53	39	92	O
B2AI-41	Prathmesh D Gumgaonkar	35	30	65	B+
B2AI-42	Pratiksha B Dange	60	25	85	A+
B2AI-43	Priya Kumari Prasad Deonath	48	27	75	A
B2AI-44	Priyanka M Kharwar	58	26	84	A+
B2AI-45	Priyansh B Koche	32	25	57	B
B2AI-46	Sanchit C Wakde	33	31	64	B+
B2AI-47	Sanjana M Ghatole	43	29	72	A

B2AI-48	Sanskruiti S Kadu	44	25	69	B+
B2AI-49	Saumya F Upgade	Absent	38	38	Absent
B2AI-50	Saurabh R Bhure	32	36	68	B+
B2AI-51	Saurabh V Chaple	59	34	93	O
B2AI-52	Sejal V Suruse	58	27	85	A+
B2AI-53	Jay Chandel	31	27	58	B
B2AI-54	Khush Rang Bhendarkar	58	28	86	A+
B2AI-55	Mahendra Dwangan	49	39	88	A+
B2AI-56	Mandar Sulakhe	40	26	66	B+
B2AI-57	Nikhil Nasare	60	33	93	O
B2AI-58	Pratik Chavan	39	25	64	B+
B2AI-59	Vaidehi S Jibhakate	53	36	89	A+
B2AI-60	Yogeshree D Barai	37	30	67	B+

  
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 Head of Department  
 Professor & Head  
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 S.S.E.S. Amity Science College,  
 Connaught Place, New Delhi

### Answer Key

Q.No	Correct Option	Q.No	Correct Option
1	<b>B</b>	31	<b>C</b>
2	<b>C</b>	32	<b>C</b>
3	<b>A</b>	33	<b>C</b>
4	<b>C</b>	34	<b>B</b>
5	<b>B</b>	35	<b>B</b>
6	<b>A</b>	36	<b>B</b>
7	<b>B</b>	37	<b>C</b>
8	<b>B</b>	38	<b>C</b>
9	<b>B</b>	39	<b>C</b>
10	<b>B</b>	40	<b>B</b>
11	<b>B</b>	41	<b>B</b>
12	<b>C</b>	42	<b>B</b>
13	<b>B</b>	43	<b>D</b>
14	<b>B</b>	44	<b>C</b>
15	<b>B</b>	45	<b>D</b>
16	<b>B</b>	46	<b>C</b>
17	<b>B</b>	47	<b>B</b>
18	<b>B</b>	48	<b>C</b>
19	<b>A</b>	49	<b>A</b>
20	<b>C</b>	50	<b>C</b>
21	<b>B</b>	51	<b>C</b>
22	<b>B</b>	52	<b>B</b>
23	<b>B</b>	53	<b>B</b>
24	<b>B</b>	54	<b>B</b>
25	<b>B</b>	55	<b>A</b>
26	<b>C</b>	56	<b>C</b>
27	<b>A</b>	57	<b>C</b>
28	<b>B</b>	58	<b>C</b>
29	<b>B</b>	59	<b>B</b>
30	<b>C</b>	60	<b>A</b>



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# SCIENCE COLLEGE

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## Add-on Course

Course Exam Name: Certificate Course in Artificial Intelligence

Name of Student:

### INSTRUCTIONS FOR FILLING THE SHEET

1. This sheet should not be folded or crushed.
2. Use only blue/ black ball point pen to fill the circles.
3. Use of pencil is strictly prohibited.
4. Circles should be darkened completely and properly.
5. Cutting and erasing on this sheet is not allowed.
6. Do not use any stray marks on the sheet.
7. Do not use marker or white fluid to hide the mark.

Roll No.:

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Session: 2022-23

Test Date: 17/03/2023

Max. Marks: 60

### WRONG METHODS



### CORRECT METHOD



Obtained Marks:

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Invigilator Signature

A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D						
1	○	○	○	○	11	○	○	○	○	21	○	○	○	○	31	○	○	○	○	41	○	○	○	○	51	○	○	○	○
2	○	○	○	○	12	○	○	○	○	22	○	○	○	○	32	○	○	○	○	42	○	○	○	○	52	○	○	○	○
3	○	○	○	○	13	○	○	○	○	23	○	○	○	○	33	○	○	○	○	43	○	○	○	○	53	○	○	○	○
4	○	○	○	○	14	○	○	○	○	24	○	○	○	○	34	○	○	○	○	44	○	○	○	○	54	○	○	○	○
5	○	○	○	○	15	○	○	○	○	25	○	○	○	○	35	○	○	○	○	45	○	○	○	○	55	○	○	○	○
6	○	○	○	○	16	○	○	○	○	26	○	○	○	○	36	○	○	○	○	46	○	○	○	○	56	○	○	○	○
7	○	○	○	○	17	○	○	○	○	27	○	○	○	○	37	○	○	○	○	47	○	○	○	○	57	○	○	○	○
8	○	○	○	○	18	○	○	○	○	28	○	○	○	○	38	○	○	○	○	48	○	○	○	○	58	○	○	○	○
9	○	○	○	○	19	○	○	○	○	29	○	○	○	○	39	○	○	○	○	49	○	○	○	○	59	○	○	○	○
10	○	○	○	○	20	○	○	○	○	30	○	○	○	○	40	○	○	○	○	50	○	○	○	○					







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## CERTIFICATE

Mr./Ku. **Lavanya R. Talnikar** is awarded with certificate on successful completion of the course entitled,  
Certificate course in "Artificial Intelligence".

Session 2022-23 under Add-on course conducted for 30 hours from 06/01/2023 to 11/03/2023 by  
Department of Computer Science, SSESA's, Science College, congress Nagar, Nagpur 440012.

He/She has passed the Examination with "\_B+\_ " Grade.

*S. R. Gadam*

**Dr. Mrs. S. R. Gadam**  
Coordinator, Department of Computer Science

*M. P. Dhore*

**Prof. M. P. Dhore**  
Principal, Science College, Nagpur



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## CERTIFICATE

Mr./Ku. **Saurabh V Chape** is awarded with certificate on successful completion of the course entitled,  
Certificate course in "Artificial Intelligence".

Session 2022-23 under Add-on course conducted for 30 hours from 06/01/2023 to 11/03/2023 by  
Department of Computer Science, SSESA's, Science College, congress Nagar, Nagpur 440012.

He/She has passed the Examination with "\_O\_" Grade.

*S. R. Gadam*

**Dr. Mrs. S. R. Gadam**  
Coordinator, Department of Computer Science

*M. P. Dhore*

**Prof. M. P. Dhore**  
Principal, Science College, Nagpur

**Action Taken:**

A free Add-On Course for UG students in the Department of Computer Science, Shri Shivaji Education Society Amravati's Science College, Congress Nagar, Nagpur was held from 6<sup>th</sup> January 2023 to 11<sup>th</sup> March 2023. The course title was "Artificial Intelligence". 58 students appeared and passed in both theory and practical examination. The result was prepared and certificates were distributed to the students.



**Shri Shivaji Education Society Amravati's Science College,  
Congress Nagar, Nagpur**

**Add on Course in Artificial Intelligence Feedback Form**

Name of Student.....

Please rate the following aspects of the program on a scale from 1 to 5, with

1. Best	2. Excellent	3. Good	4. Satisfactory	5. Fair
---------	--------------	---------	-----------------	---------

**Q.1** How would you rate the organization and structure of the course?

1       2       3       4       5

**Q.2** How do you rate the quality of the delivery of the units by the Teacher?

1       2       3       4       5

**Q.3** How useful were the hands-on assignments and projects in enhancing your practical understanding of Artificial Intelligence?

1       2       3       4       5

**Q.4** How well-organized was the course structure, including the sequencing of topics and the pacing of the material?

1       2       3       4       5

**Q.5** Overall, how would you rate your learning experience in this course?

1       2       3       4       5

**Q.6 Any Suggestions:**

---

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## Feedback Analysis

1. Number of Students Registered for the Course : 60
2. Number of Students submitted the Feedback : 54
3. Question wise analysis of the Feedback:

Sr. No	Question	Responses in Percentage (%)				
		Best	Excellent	Good	Satisfactory	Fair
1)	How would you rate the organization and structure of the course?	38.88	35.18	22.22	3.75	0
2)	How do you rate the quality of the delivery of the units by the Teacher?	42.59	35.18	20.37	1.85	0
3)	How useful were the hands-on assignments and projects in enhancing your practical understanding of AI ?	61.11	24.07	11.11	1.85	1.85
4)	How well-organized was the course structure, including the sequencing of topics and the pacing of the material?	48.14	31.48	16.66	3.7	0
5)	Overall, how would you rate your learning experience in this course?	38.88	35.18	20.37	5.55	0
6)	Any Suggestions	No Suggestions: 29.9% Remaining Comments: Good Course, Nice Course, Change the timing of Classes				

Remark: Students commented that the course will be useful in professional life.

Department will keep on improving the quality of the course.

Certificate course: Artificial Intelligence (2022-23)

Feedback Analysis

