# FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)
## DEPARTMENT OF COMPUTER SCIENCE
## COURSE CURRICULUM

**PART-A: Introduction**

| **Program:** Bachelor in Science (CS) *(Certificate / Diploma / Degree/Honors)* | Semester – I/III/V | Session: 2024-2025 |
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|---|---|---|---|
| 1 | Course Code | **CSVAC–01** | |
| 2 | Course Title | **Artificial Intelligence** | |
| 3 | Course Type | **Value Addition Course (VAC)** | |
| 4 | Prerequisite | *As per program* | |
| 5 | Course Learning Outcomes(CLO) | At the end of this course, students will be able to:<br>• Understand basics of AI.<br>• Understand problem solving techniques of AI.<br>• Aware about AI tools.<br>• Explore application of AI in various domains.<br>• Understand the current scenario of AI in India. | |
| 6 | Credit Value | **2 Credits** | ***Credit = 15 Hours -Learning & Observation*** |
| 7 | Total Marks | **Max. Marks: 50** | **Min Passing Marks: 20** |

**PART – B: Content of the Course**

**Total No. of Teaching– Learning Periods (01 Hr. per period) - 30 Periods (30 Hours)**

| Unit | Topics (Course contents) | No .of Period |
|---|---|---|
| I | **Introduction:** Overview of Artificial Intelligence (AI), Foundations of AI, Areas and Applications of AI in various domains, AI in India, Impact and examples of AI, Future of AI. | 8 |
| II | **Advanced AI:** Basic Concept of Machine Learning, Deep Learning, Computer vision, Natural Language Processing (NLP), Speech recognition, Generative AI Applications. | 8 |
| III | **AI Tools:** Conversational AI: ALEXA, CORTANA, SIRI etc., AI tools for content generation, Image creation, Presentation, Video editing etc. | 8 |
| IV | **Application of AI:** Agriculture, Healthcare, Environment, Teaching-Learning, E-Commerce, Industry, Research etc. | 6 |
| *Keywords* | *Artificial Intelligence (AI), Machine Learning (ML), Deep Learning, Computer Vision, Natural Language Processing (NLP), Conversational AI, Generative AI.* | |

*Name and Signature of Convener & Members of CBoS:*

Dr H.S. Hota
chairman

Suresh Thakur

AINJEETA KUJUR

**PART–C: Learning Resources**

Text Books, Reference Books and Others

***Text Books Recommended:***

- Introduction to Artificial Intelligence and Expert Systems, Dan W. Patterson, PHI Publication.
- Artificial Intelligence, Elaine Rich and Kevin Knight TMH publication.

***Reference Books Recommended:***

- Artificial Intelligence and machine learning, Vinod Chandra S.S., Anand Hareendrn S., PHI learning private Ltd.
- Foundations of Artificial Intelligence and Expert Systems, Macmillan Series in Computer Science, V.S. Jankiraman, K. Sarukesi and P. Gopala Krishnan.

***Online Resources:***

- Ministry of Electronics and Information Technology Portal for INDIAai:
  https://indiaai.gov.in/
  Introduction to Artificial Intelligence from SWAYAM:
  https://www.youtube.com/watch?v=pKeVMlkFpRc&list=PLwdnzlV3ogoXaceHrrFVZCJKbm_laSHcH&index=2
  An introduction to Artificial Intelligence from SWAYAM:
  https://onlinecourses.nptel.ac.in/noc24_cs08/preview
- Introduction to Artificial Intelligence from Coursera:
  https://www.coursera.org/learn/introduction-to-ai
- Introduction to Artificial Intelligence:
  https://www.javatpoint.com/artificial-intelligence-ai
- How to Learn Artificial Intelligence from Coursera:
  https://www.coursera.org/articles/how-to-learn-artificial-intelligence

## PART-D: Assessment and Evaluation

**Suggested Continuous Evaluation Methods:**

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|---|---|
| MaximumMarks: | 50 Marks |
| Continuous Internal Assessment(CIA): | 15 Marks |
| End Semester Exam(ESE): | 35 Marks |

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|---|---|---|
| **Continuous InternalAssessment( CIA):** (By Course Teacher) | Internal Test / Quiz-(2): **10 + 10**<br>Assignment/Seminar- **05**<br>Total Marks - **15** | Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against **15** Marks |
| **End Semester Exam (ESE):** | Laboratory/Field Skill Performance: On spot Assessment<br>A. Performed the task based on learned skill - 20 Marks<br>B. Spotting based on tools (Written) - 10 Marks<br>C. Viva-voce (based on principle/technology)- 05 Marks | Managed by Coordinator as per skilling |

*Name and Signature of Convener & Members of CBoS:*

Dr. H.S. Hota
Chairman

(Shoresh Thakur)

Sheikhendra Arya

ANJEETA KUJUR