

SYLLABUS FOR ARTIFICIAL INTELLIGENCE (843)

CLASS XII - 2026-27

Theory : 50

Practical : 50

PART B - SUBJECT SPECIFIC SKILLS			40 Marks
Date/Month	Unit	Chapter/Topics	
6thApr to 21st Apr	Unit 2: Data Science Methodology : An Analytic Approach to Capstone Project	Introduction to data science methodology : 5 Modules & 10 stages : Business understanding, analytic approach, data requirements, data requirements, data understanding, data preparation, Feature Engineering, AI Modeling, evaluation, deployment, feedback. Model Validation : train test split , k-fold cross validation, Model performance - Evaluation metrics Evaluation metrics for classification - confusion matrix, precision and recall, F1- score, Accuracy. Evaluation metrics for regression - MAE, MSE, RMSE	
I WEEKLY TEST (TERM I)			
22nd Apr to 30th Apr	Unit 3 : Making Machines See	How machines see?, working of computer vision, Basics of digital images, Interpretation of Image in digital form, Computer Vision – Process : Image Acquisition, Preprocessing, Noise Reduction, Image Normalization, Resizing/Cropping, Histogram Equalization, Feature Extraction, Detection/Segmentation : Single Object Tasks, Multiple Object Tasks, High-Level Processing, applications of computer vision, challenges of computer vision, future of computer vision	
4th May to 22nd May	Unit 5 : Introduction to Big Data and Data Analytics	What is Big Data, Types of Big Data, Advantages and Disadvantages of Big Data, Characteristics of Big Data, Big Data Analytics, Working on Big Data Analytics, Using Orange Data Mining for Big Data Analytics, Mining Data Streams, Future of Big Data Analytics	
1st July to 10th July	Unit 6 : Understanding Neural Networks	What is a Neural Network, Parts of a Neural network : (input, hidden, output layer), components of a neural network, key components of a neural network are as follows: neuron, weights, activation functions, bias, connections, learning rule, propagation functions, working of a neural network, Types of Neural Networks, Standard Neural Network (Perceptron), Feed Forward Neural Network (FFNN), Convolutional Neural Network (CNN), Recurrent Neural Network (RNN), Generative Adversarial Network (GAN), Future of NN and It's impact on Society	
II WEEKLY TEST (TERM I)			

13th July to 24th July	Unit 7 : Generative AI	Introduction to Generative AI, Working of Generative AI, Generative Adversarial Networks (GANs), Generative Adversarial Networks (GANs), Generative and Discriminative Models, Discriminative models, Generative models, Differences between Generative AI and Discriminative AI, Applications of Generative AI, Image Generation, Image Generation, Video Generation, Audio Generation, Audio Generation, Transformers in LLMs, Transformers in LLMs, Limitations of LLM, Risks associated with LLM, Future of Generative AI, Ethical and Social Implications of Generative AI, Deepfake Technology, Bias and Discrimination, Plagiarism, Transparency
27th July to 31st July	Unit 8 : Data Storytelling	Introduction to Storytelling, what are Stories, the benefits of stories, Why is storytelling a powerful tool, Elements of Stories : Character, Plot/Setting, Conflict, Resolution, Insight, Introduction to Data Storytelling, Need for Data Storytelling, Why has Data Storytelling become very powerful now, Essential elements of Data Storytelling, Narrative structure of a data story, Visualizations for different data, Steps to create a Story through data, Ethics in Data Storytelling
PART A - EMPLOYABILITY SKILLS		10 Marks
3th Aug to 7st Aug	Unit 1: Communication Skills – IV	<ol style="list-style-type: none"> 1. Importance of active listening at workplace 2. Steps to active listening 3. Writing skills to the following : Sentence, Phrase, Kinds of Sentences, Parts of Sentence, Parts of Speech, Articles, Construction of a Paragraph
10th Aug to 14st Aug	Unit 2: Self - Management Skills– IV	<ol style="list-style-type: none"> 1. Finding and listing motives (needs and desires); 2. Finding sources of motivation and inspiration (music, books, activities); expansive thoughts; living fully in the Present moment; dreaming big 3. Describe the meaning of personality 4. Describe how personality influence others 5. Describe basic personality traits 6. Describe common personality disorders-paranoid, antisocial, schizoid, borderline, narcissistic, avoidant, dependent and obsessive
17st Aug to 21th Aug	Unit 4 : Entrepreneurial Skills - IV	<ol style="list-style-type: none"> 1. Barriers to becoming entrepreneur 2. Behavioral and entrepreneurial competencies– adaptability/ decisiveness, initiative/perseverance, Interpersonal skills, organizational skills, stress management, valuing service and diversity 3. Entrepreneurial competencies in particular : self-confidence, initiative, seeing and acting on opportunities, concern for quality, goal setting and risk taking, problem solving and creativity, systematic planning and efficiency, information seeking, persistence, influencing and negotiating, team building

<p>24th Aug to 28th Aug</p>	<p>Unit 5 : Green Skills – IV</p>	<ol style="list-style-type: none"> 1. Role of green jobs in toxin-free homes, 2. Green organic gardening, public transport and energy conservation, 3. Green jobs in water conservation 4. Green jobs in solar and wind power, waste reduction, reuse and recycling of wastes, 5. Green jobs in green tourism 6. Green jobs in building and construction 7. Green jobs in appropriate technology 8. Role of green jobs in Improving energy and raw materials use 9. Role of green jobs in limiting greenhouse gas emissions 10. Role of green jobs in minimizing waste and pollution 11. Role of green jobs in protecting and restoring ecosystems 12. Role of green jobs in support adaptation to the effects of climate change
<p>31th Aug to 4th Sep</p>	<p>Unit 3 : Information and Communication Technology Skills – IV</p>	<ol style="list-style-type: none"> 1. Introduction to spreadsheet application 2. Spreadsheet applications 3. Creating a new worksheet 4. Opening workbook and entering text 5. Resizing fonts and styles 6. Copying and moving 7. Filter and sorting 8. Formulas and functions 9. Password protection. 10. Printing a spreadsheet. 11. Saving a spreadsheet in various formats. <hr/> <p>Introduction to presentation</p> <ol style="list-style-type: none"> 1. Software packages for presentation 2. Creating a new presentation 3. Adding a slide 4. Deleting a slide 5. Entering and editing text 6. Formatting text 7. Inserting clipart and images 8. Slide layout 9. Saving a presentation 10. Printing a presentation document
<p>7st Sep to 18th Sep</p>	<p>Unit 1: Python Programming–II*</p>	<p>Python Libraries : NumPy Library, Pandas Library, Pandas Data Structures, Series, Data Frame, Dealing with Rows and Columns, Deleting Rows or Columns from a DataFrame, Attributes of DataFrames, Import and Export Data between CSV Files and DataFrames, Exporting a DataFrame to a CSV file, Handling Missing Values</p>

21th Sep to 1st Oct	Unit 4 : AI with Orange Data Mining Tool*	What is Data Mining, Introduction to Orange Data Mining Tool, Beneficiaries of Orange data mining, Getting started with Orange tool, components of orange data mining tool, default widget catalog, key domains of ai with orange data mining tool, Data Science with Orange, classification, Evaluating the Classification Model with Orange, Computer Vision with Orange, Natural Language Processing with Orange.
REVISION FOR PRE-BOARD EXAMS		