BLOOM PUBLIC SCHOOL

C-8 Vasant Kunj New Delhi

SYLLABUS FOR SESSION 2023-24

Subject: Artificial Intelligence (417)
Class: X

SYLLABUS		
MONTH	**CHAPTERS** **(NCERT TEXT BOOK/ HANDBOOK)**	**CONTENT** **(As per Rationalised Syllabus)**
April	Part A – Employability Skills Unit 1: Communication Skills	Unit 1: Communication Skills • Methods of communication • Verbal communication • Non-verbal communication • Communication Cycle and Importance of feedback • Barriers of effective communication • Writing Skills – Part of Speech Writing Skills – Sentences
	Part B – Subject Specific Skills Unit 1: Introduction to AI	Unit 1: Introduction to AI Foundational Concepts of AI • What is intelligence? • Decision Making • What is Artificial Intelligence and what is not? Basics of AI: Let's Get started • Introduction to AI and related terminologies • Introducing AI, ML, & DL • Introduction to AI Domains (Data, CV & NLP) • Applications of AI – A look at real-life AI implementations • AI ethics
May	Part B – Subject Specific skills Unit 2: AI project cycle	Unit 2 : AI project cycle Introduction • Introduction to AI Project Cycle

		Problem Scoping
		   □ Understanding problem scoping and Sustainable Development Goal
		
		Data Acquisition
		   □ Simplifying data acquisition
		
		Data Exploration
		   □ Visualizing Data
		
		Modelling
		   □ Introduction to modelling
		   □ Introduction to Rule Based & Learning Based AI Approaches
		   □ Introduction to Supervised Unsupervised & Reinforcement Learning Models
		
		Neural Networks
		
		Evaluation
		   □ Evaluating the idea!

July	Part A – Employability Skills Unit 2: Self-management Skills Part B – Subject Specific Skills Unit 3: Advance Python (To be assessed through practical)	Unit 2: Self-management Skills • Stress Management • Self-awareness — Strength and Weakness Analysis • Self-motivation • Self-regulation — Goal Setting • Self-regulation — Time Management Unit 3: Advance Python (To be assessed through practical) Recaps • Jupyter Notebook • Introduction to Python • Python Basics
August	Part A - Employability Skills Unit 3:Information and Communication Technology Skills Part B – Subject Specific Skills Unit 4: Data Sciences (To be assessed through practical)	Unit 3: Information and Communication Technology Skills • Basic Computer Operations • Performing Basic File Operations • Computer Care and Maintenance • Computer Security and Privacy Unit 4: Data Sciences (To be assessed through practicals) ➤ Introduction • Introduction to Data Science

		• Applications of Data Science
		• Revisiting AI Project Cycle
		
		➢ Concepts of Data Sciences
		  • Python data Sciences
		  • Statistics Learning & Data Visualization
		
		➢ K-nearest neighbor model (Optional)
		  • Personality Prediction
		  • Understanding K-nearest neighbor model

September	Part A – Employability Skills
	
	Unit 4: Entrepreneurial SkillsUnit 5: Green Skills
	
	Part B – Subject Specific Skills
	
	Unit 5: Computer Vision (To be assessed in practical)
		Unit 4: Entrepreneurial Skills
		  • Entrepreneurship and Society
		  • Qualities and Functions of an Entrepreneur
		  • Myths about Entrepreneurship
		  • Entrepreneurship as a Career Option
		
		Unit 5: Green Skills
		  • Sustainable Development
		  Our Role in Sustainable Development
		
		Unit 5: Computer Vision (To be assessed in practical)
		➢ Introduction
		  • Introduction to Computer Vision
		  • Applications of CV
		
		➢ Concepts of Computer Vision
		  • Understanding CV Concepts, Pixels, How do computers see images?
		  • Image features

October	Part B – Subject Specific Skills
	
	Unit 6: Natural Language Processing
	Unit 7: Evaluation
		Unit 6: Natural Language Processing
		Introduction
		  • Introduction to Natural Language Processing
		  • NLP Applications
		  • Revisiting AI project cycle
		  • Introduction to Chatbots
		  • Human Language VS Computer Language
		Concepts of Natural Language Processing
		  • Text Processing, Data Processing
		  • Bag of Words, TFIDF(Optional), NLTK

		Unit 7: Evaluation • Introduction to model evaluation • Confusion Matrix • Understanding Accuracy, Precision, Recall & F1 Score • Practice Evaluation
November	PREBOARD EXAMINATION 1	Whole syllabus
December	PREBOARD EXAMINATION 2	Whole syllabus
January	Revision/ BOARD PRACTICALS	Whole syllabus
February	BOARD EXAMINATION	Whole syllabus
March	BOARD EXAMINATION	Whole syllabus

ASSESSMENT SYLLABUS	
PERIODIC ASSESSMENT -1	**Subject specific skills:** • Unit 1: Introduction to Artificial Intelligence (AI) **Employability Skills:** • Unit 1: Communication Skills • Unit 2: Self-management Skills
PERIODIC ASSESSMENT -2	**Subject specific skills:** • Unit 2: AI Project Cycle • Unit 3:Advance Python **Employability Skills:** • Unit 3: ICT Skills • Unit 4 : Entrepreneurial Skills

MID TERM EXAM	**Subject specific skills:** • Unit 1: Introduction to ArtificialIntelligence (AI) • Unit 2: AI Project Cycle • Unit 3: Advance Python • Unit 4: Data Sciences • Unit 5: Computer Vision **Employability Skills:** • Unit 1: Communication Skills • Unit 2: Self-Management Skills • Unit 3: ICT Skills • Unit 4 : Entrepreneurial Skills
PREBOARD EXAMINATION 1	**Subject specific skills:** Unit 1: Introduction to ArtificialIntelligence (AI) Unit 2: AI Project Cycle Unit 3: Advance Python Unit 4: Data Sciences Unit 5: Computer Vision Unit 6: Natural Language Processing Unit 7: Evaluation **Employability Skills:** Unit 1: Communication Skills-II Unit 2: Self-Management Skills-II Unit 3: ICT Skills-II Employability Skills-II Unit 4: Entrepreneurial Skills-II Unit 5: Green Skills-II
PREBOARD EXAMINATION 2	**Subject specific skills:** Unit 1: Introduction to ArtificialIntelligence (AI) Unit 2: AI Project Cycle Unit 3: Advance Python Unit 4: Data Sciences Unit 5: Computer Vision Unit 6: Natural Language Processing Unit 7: Evaluation **Employability Skills:** Unit 1: Communication Skills-II Unit 2: Self-Management Skills-II Unit 3: ICT Skills-II Employability Skills- Unit 4: Entrepreneurial Skills-II Unit 5: Green Skills-II
BOARD EXAMINATION	Whole syllabus