

Bhartiya Vidya Mandir Sen. Sec. School, Sector 39, Chandigarh Road, Ludhiana

CLASS - X SYLLABUS – Artificial Intelligence Session 2026-2027

BOOK: CBSE Book

Month	Unit/Chapter/Topic	Learning Objective	Resources/Art-Integrated Pedagogy Tools Used/E-Resources	Learning Outcomes/ Skills Learnt by Students
APRIL	REVISITING AI PROJECT CYCLE & ETHICAL FRAMEWORKS FOR AI	AI Project Cycle The overview of the six stages of the AI Project Cycle Introduction to AI Domains The three domains of AI and their applications Ethical Frameworks of AI • Frameworks • Ethical frameworks Need of Ethical Frameworks for AI • Factors that influence our decision-making • Types of Ethical Frameworks • Bioethics and its principles • A use case of Bioethics	https://artsexperiments.withgoogle.com/impactfilter/	What is Intelligence? Decision Making. • How do you make decisions? • Make your choices! what is Artificial Intelligence and what is not?
	ADVANCE CONCEPTS OF MODELLING IN AI	Revisiting AI, ML and DL • Differentiate between AI, ML and DL • Common terminologies used with data Modelling • Types of AI models – Rule based, Learning based • Categories of Machine learning based models – Supervised, Unsupervised and Reinforcement learning models • Sub-categories of Supervised Learning Model – Classification, Regression • Sub-categories of Unsupervised Learning Model – Clustering, Association Neural Networks • What is neural network? • How does AI make a decision?	https://www.autodraw.com/ http://moralmachine.mit.edu/	: Introduction to AI and related terminologies. • Introducing AI, ML & DL. • Introduction to AI Domains (Data Sciences, CV & NLP) • Gamified tools for each domain : AI Ethics • Moral Machine Activity : a platform for gathering a human perspective on moral decisions made by machine intelligence, such as self-driving cars.

MAY	EVALUATING MODELS	Importance of Model Evaluation • What is evaluation? • Why do we need a model evaluation? Splitting the training set data for Evaluation • What is Train-test split? • Why do we need to do Train-test split? What is Accuracy and Error? • Accuracy • Error Evaluation metrics for classification • What is Classification? • Classification metrics • Confusion matrix • Accuracy from Confusion matrix • Precision from Confusion matrix • Recall from Confusion matrix • F1 Score 3.5 Ethical concerns around model evaluation • Bias • Transparency • Accountability	https://teachablemachine.withgoogle.com/experiments.withgoogle.com/ai/drum-machine/view/	Introduction to AI Project Cycle Problem Scoping Learn about the importance of project planning in AI development and how to define project goals and objectives.
			https://experiments.withgoogle.com/ai/drum-machine/view/ https://www.wordtune.com/ http://moralmachine.mit.edu/	Understanding Problem Scoping & Sustainable Development Goals Data Acquisition Develop an understanding of the importance of data collection in AI and how to choose the right data sources.
JUNE	SUMMER HOLIDAYS			
JULY	STATISTICAL DATA	No code AI for Statistical Data • Meaning of No-Code AI • No-Code and Low-Code. • Some no-code tools Statistical Data: Use Case Walk through • Important concepts in Statistics. • Orange data mining • AI project cycle in Orange data mining (Palmer penguins case study) Introduction to Computer Vision • CV open-source tool • A Quick overview of computervision	https://next.rockpaperscissors.ai/	Define the concept of Data Science and understand its applications in various fields.
		• Orange data mining • AI project cycle in Orange data mining (Palmer penguins case study)	https://www.w3schools.com/colors/colors_rgb.asp	Introduction to Computer Vision. Applications of CV
		• CV open-source tool • A Quick overview of computervision	https://emojiscavengerhunt.withgoogle.com/	Image Representation, Object detection and segmentation

AUGUST		• Computer Vision and Artificial Intelligence • Computer Vision v/s Image Processing	Activities: • Game-Emoji Scavenger Hunt https://emojiscavengerhunt.withgoogle.com/ • RGB Calculator: https://www.w3schools.com/colors/colors_rgb.asp • Create your own pixel art: www.piskelapp.com • Create your own convolutions: http://setosa.io/ev/image-kernels/	Learning by doing
SEPTEMBER	TERM EXAMINATION			
		Introduction to Computer Vision • CV open-source tool • A Quick overview of computervision • Computer Vision and Artificial Intelligence • Computer Vision v/s Image Processing Applications of CV • Facial Recognition • Face Filters • Google Search by Image • Computer Vision in retail	Lecture Method	Introduction to Natural Language Processing Activity : Use of Google Translate for same spelling words
			Lecture Method	Activity: Introduction to Chatbots

OCTOBER	COMPUTER VISION	• Self-Driving cars • Medical Imaging • Google Translate App Computer Vision Tasks • Classification • Classification + Localisation • Object Detection • Image Segmentation • Basics of Images and Pixels • Resolution & Pixel Value • Grayscale & RGB Images No-Code AI tools • Introduction to Lobe • Teachable Machine • Smart Sorter Activity • Orange Data Mining Tool • Use Case Walkthrough • Steps to project development - Image Features • Introduction to image features • Examples Convolution • Convolution • What is Kernel? Convolution NeuralNetwork • Introduction • Convolution Layer • Rectified Linear Unit • Pooling Layer • Fully Connected Layer Python libraries in Computer Vision • TensorFlow • Keras	Lecture Method	Introduction to Model Evaluation • What is Evaluation? • Different types of Evaluation techniques Underfit, Perfect Fit, OverFit
		Introduction to NLP • Features of natural language • Computer language • Importance of NLP 2 Applications of NaturalLanguage Processing • Voice Assistants	Lecture Method	Activity: Confusion Matrix

	NATURAL LANGUAGE PROCESSING	• Autogenerated caption • Language translation • Sentiment analysis • Text classification • Keyword extraction Stages of Natural Language Processing (NLP) • Lexical Analysis • Syntactic Analysis • Semantic Analysis • Discourse Integration • Pragmatic Analysis Chatbots Differences between a Script bot anda Smart bot Text Processing • Text Normalisation • Bag of words • TFIDF • Applications of TFIDF Natural Language Processing: Use Case Walkthrough • Examples of code and no-code tools • Applications of Sentiment Analysis • Sentiment Analysis using the Orange Data Mining tool	Lecture Method	Learn about the different types of evaluation techniques in AI, such as Accuracy, Precision, Recall and F1 Score, and their significance.
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