

NAVY CHILDREN SCHOOL, MUMBAI
SPLIT- UP SYLLABUS FOR AY 2024-25
SUBJECT – ARTIFICIAL INTELLIGENCE (CODE- 417)
CLASS-X

Month	Chapter	Detailed SplitUp Syllabus	Learning Outcomes	Practicals
April	<p>Part A– Employability Skills</p> <p>Part B – Subject Specific Skills</p>	<p>Part A - Employability Skills:</p> <p>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</p> <p>Part B – Subject Specific Skills</p> <p>Unit 1: Introduction to AI- Foundational Concepts of AI What is intelligence? Decision Making, What is Artificial Intelligence and what is not?</p> <p>Basics of AI: Let’s Get started Introduction to AI and related terminologies, Introducing AI, ML, & DL, Introduction to AI Domains (Data, CV & NLP), Gamified tools for each domain , Applications of AI, AI ethics</p>	<ul style="list-style-type: none"> Understanding of human communication theories related to culture, self-concept, perception, listening, verbal and nonverbal communication. Learners will be able to prepare and deliver speeches effectively and participate in small group interactions. Flip learning on Communication skill. Understand the concept of human intelligence and its various components such as reasoning, problem-solving, and creativity. Understand the concept of Artificial Intelligence (AI) and its domains Learners to relate to application of Artificial Intelligence in their daily lives. Learn about the ethical concerns involved in AI development, such as AI bias, data privacy and how they can be addressed. 	<p>Activities suggested in CBSE study material</p> <p>Activity: Gamified tools for each domain</p> <p>Data Sciences- Impact Filter (Impact of rise in temperature on different species) https://artsexperiments.withgoogle.com/impactfilter/</p> <p>CV- Autodraw (It pairs machine learning with drawings from talented artists to help you draw stuff fast.) https://www.autodraw.com/</p> <p>NLP- Wordtune (AI writing tool that rewrites, rephrases, and rewords your writing) https://www.wordtune.com/</p> <p>Moral Machine Activity : a platform for gathering a human perspective on moral decisions made by machine intelligence, such as self-driving cars. http://moralmachine.mit.edu/</p>

		<ul style="list-style-type: none"> Python Basics 	<ul style="list-style-type: none"> Able to write basic Python programs using fundamental concepts such as variables, data types, operators, and control structures. 	
Aug	<p>Part–B Subject Specific Skills</p> <p>Part–C Practical Work</p>	<p>Part B – Subject Specific Skills</p> <p>Unit 4: Data Sciences (Theory) Introduction to Data Science, Applications of Data Science, Revisiting AI Project Cycle, Data Collection, Data Access</p> <p>Python Packages(Practical) Python data Sciences (Numpy, Pandas, Matplotlib), Statistics Learning & Data Visualization (Statistics and Standard Deviation)</p> <p>K-nearest neighbour model (Optional)** Personality Prediction, Understanding K-nearest neighbour model</p>	<ul style="list-style-type: none"> Define the concept of Data Science and understand its applications in various fields. Understand the basic concepts of data acquisition, visualization, and exploration. Use Python libraries such as NumPy, Pandas, and Matplotlib for data analysis and visualization. 	<p>Revisiting AI Project Cycle, Data Collection, Data Access Activities: Game: Rock, Paper & Scissors https://next.rockpaperscissors.ai/</p> <p>Python for Data Sciences</p> <ul style="list-style-type: none"> Numpy Pandas Matplotlib

		<p>Human Language VS Computer Language, Text Processing, Data Processing, Bag of Words</p> <p>TFIDF(Optional)**, NLTK(Optional)**</p> <p>Part B – Subject Specific Skills</p> <p>Unit 7: Evaluation</p> <ul style="list-style-type: none"> • Introduction to model evaluation • Confusion Matrix • Understanding Accuracy Precision, Recall & F1 Score • Practice Evaluation 	<ul style="list-style-type: none"> • Explore the various applications of NLP in everyday life, such as chatbots, sentiment analysis, and automatic summarization. • Learn about the Text Normalization technique used in NLP and popular NLP model - Bag-of-Words • Understand Different types of Evaluation techniques Underfit, Perfect Fit, OverFit • Model Evaluation Terminologies-The Scenario - Prediction, Reality, True Positive, True Negative, False Positive, False Negative Confusion Matrix, Learn to make a confusion matrix for given Scenario • Learn about the different types of evaluation techniques in AI, such as Accuracy, Precision, Recall and F1 Score, and their significance. 	<p>Activity:</p> <p>Based on Confusion Matrix, Practice Evaluation</p>
Nov	Revision for Pre-Board Examination			

****NOTE: Optional components shall not be assessed. They are for extra knowledge**