

CMR INSTITUTE OF TECHNOLOGY

Comparison between Bachelor of Engineering in Artificial Intelligence & Machine Learning and Computer Science and Engineering (Artificial Intelligence & Machine Learning) based on 2025 VTU Scheme.

SEM	AIML	SEM	CSE (AIML)	Comparision
I	Applied Mathematics -I 1. Calculus and Linear Algebra	I	Applied Mathematics -I 1. Calculus and Linear Algebra	All subjects are the same for AIML and CSE(AIML).
	Applied Physics 1. Quantum Physics and Applications		Applied Physics 1. Quantum Physics and Applications	
	Computer-Aided Engineering Drawing		Computer-Aided Engineering Drawing	
	Engineering Science Course-I 1. Introduction to Electronics & Communication Engineering		Engineering Science Course-I 1. Introduction to Electronics & Communication Engineering	
	Programme Specific Course 1. Programming in C		Programme Specific Course 1. Programming in C	
	Soft Skills		Soft Skills	
	Programme-Specific Course Lab 1. C Programming Lab		Programme-Specific Course Lab 1. C Programming Lab	
	Innovation and Design Thinking Lab (Project-based learning)		Innovation and Design Thinking Lab (Project-based learning)	
	Samskrutika Kannada/ Balake Kannada		Samskrutika Kannada/ Balake Kannada	
II	Applied Mathematics-I 1.Numerical Methods		Applied Mathematics-I 1.Numerical Methods	All subjects are the same for AIML and CSE(AIML).
	Applied Chemistry 1. Applied Chemistry for Smart		Applied Chemistry 1. Applied Chemistry for Smart	

	Systems		Systems	
	Introduction to AI and Applications		Introduction to AI and Applications	
	Engineering Science Course- II 1. Introduction to Electrical Engineering		Engineering Science Course- I 1. Introduction to Electrical Engineering	
	Programming Language Course 1. Python Programming		Programming Language Course 1. Python Programming	
	Communication Skills		Communication Skills	
	Indian Constitution & Engineering Ethics		Indian Constitution & Engineering Ethics	
	Interdisciplinary Project-Based Learning		Interdisciplinary Project-Based Learning	
III	Probability, Distributions and Statistics	III	Probability, Distributions and Statistics	All subjects are the same for AIML and CSE(AIML).
	Object Oriented Programming with Java		Object Oriented Programming with Java	
	Digital Design and Computer Organization		Digital Design and Computer Organization	
	Operating Systems		Operating Systems	
	Data Structures and Applications		Data Structures and Applications	
	Data Structures Laboratory		Data Structures Laboratory	
	Ability Enhancement Course 1. Exploratory Data Analysis 2. Project Management (with Git)		Ability Enhancement Course 1. Exploratory Data Analysis 2. Project Management (with Git)	
	Community Project / Societal Project		Community Project / Societal Project	

	NSS / Yoga / sports / Music		NSS / Yoga / sports / Music	
IV	Discrete Mathematics and Optimization Techniques	IV	Discrete Mathematics and Optimization Technique	In Ability Enhancement Course only one subject is common from AIML and CSE(AIML). The remaining three subjects are different in IVth SEM.
	Design and Analysis of Algorithms		Design and Analysis of Algorithms	
	Database Management Systems		Database Management Systems	
	Machine Learning		Machine Learning	
	Machine Learning Laboratory		Machine Learning Laboratory	
	Ability Enhancement Course 1. <u>JULIA</u> 2. UI/UX 3. <u>R Programming</u> 4. <u>MERN</u>		Ability Enhancement Course 1. <u>Mobile Application Development</u> 2. UI/UX 3. <u>Web Application Development</u> 4. <u>Unix Shell Programming</u>	
	Biology for Computer Engineers		Biology for Computer Engineers	
	Environmental Science Project		Environmental Science Project	
	NSS/ Sports / Yoga / Music		NSS/ Sports / Yoga / Music	
V	Software Engineering and Project Management	V	Software Engineering and Project Management	In Professional
	Artificial Intelligence		Artificial Intelligence	
	Theory of Computation		Theory of Computation	
	Computer Networks		Computer Networks	
	Professional Elective Course-I 1. Cloud Computing		Professional Elective Course-I 1. Cloud Computing	

	2. Image and Video Processing <u>3. Prompt Engineering</u> <u>4. Human Centered AI</u>		2. Image and Video Processing <u>3. Soft Computing</u> <u>4. Natural Language Processing</u>	Elective Course-I two subjects are different from AIML and CSE(AIML) in Vth SEM.
	Research Methodology and IPR		Research Methodology and IPR	
	Data Visualization Laboratory		Data Visualization Laboratory	
	Hackathon-Based Project		Hackathon-Based Project	
VI	Advanced Java Programming	VI	Advanced Java Programming	In VI sem three subjects are different and also in Professional Elective Courses-II three subjects and Ability Enhancement Course two subjects are different and Laboratory one subjects are different.
	Information and Network Security		Information and Network Security	
	<u>Deep Learning</u>		<u>High Performance Computing in Artificial Intelligence</u>	
	<u>Natural Language Processing</u>		<u>Internet of Things</u>	
	Professional Elective Courses-II <u>1. Internet of Things</u> <u>2. Explainable Learning</u> <u>3. Time Series Analysis</u> 4. Artificial Superintelligence		Professional Elective Courses-II <u>1. Prompt Engineering</u> <u>2. Generative AI</u> <u>3. AI Ethics and Sustainability</u> 4. Artificial Superintelligence	
	<u>Deep Learning Laboratory</u>		<u>IoT Laboratory</u>	
	Ability Enhancement Course Laboratory <u>1. Generative AI</u> 2. Devops 3. MongoDB <u>4. Front End Web Development using REACT-JS</u>		Ability Enhancement Course Laboratory <u>1. Object Oriented Modeling using UML</u> 2. Devops 3. MongoDB <u>4.Full Stack Development</u>	
	Capstone Project - Phase I		Capstone Project - Phase I	

	Universal Human Value		Universal Human Value	
VII	<u>High Performance Computing in Artificial Intelligence</u>	VII	<u>Deep Learning</u>	One subject is different and in Professional Elective Course -III two subjects are different and Professional Elective Course -IV one subject is different.
	Professional Elective Course-III		Professional Elective Course-III	
	<u>1. Artificial Intelligence in Business</u> 2. Edge AI & Federated Learning <u>3.Reinforcement Learning</u> 4. Data Engineering & MLOps		<u>1. Big Data Analytics</u> 2. Edge AI & Federated Learning <u>3. Feature Engineering</u> 4. Data Engineering & MLOps	
	Professional Elective Course -IV		Professional Elective Course -IV	
	1. Agentic Artificial Intelligence 2. Quantum Computing <u>3. Statistical Machine Learning for Data Science</u> 4. Social Network Analysis		1. Agentic Artificial Intelligence 2. Quantum Computing <u>3. Blockchain Technology</u> 4. Social Network Analysis	
	Capstone Project - Phase II		Capstone Project - Phase II	
	Indian Knowledge System		Indian Knowledge System	
VIII	Professional Elective-V (NPTEL/VTU Online Course)	VIII	Professional Elective-V (NPTEL/VTU Online Course)	All subjects are the same for AIML and CSE(AIML).
	Open Elective-II (NPTEL/VTU Online Course) Foreign Language (NPTEL/SWAYAM/online VTU)		Open Elective-II (NPTEL/VTU Online Course) Foreign Language (NPTEL/SWAYAM/online VTU)	
	Internship (15 weeks)		Internship (15 weeks)	