RV College of Engineering®
Mysore Road, RV Vidyaniketan Post,
Bengaluru - 560059, Karnataka, India

B.E. In Computer Science and Engineering (AI & ML)

The rapid transformation of industries is significantly influenced by the rise of Artificial Intelligence (AI). AI-driven engineering solutions enhance human capabilities, allowing individuals to handle complex and critical situations requiring sound judgment and creative problem-solving. In the future, more roles across various organizations are expected to incorporate artificial intelligence technologies, creating substantial opportunities for individuals skilled in AI, regardless of their specific professional fields. Integrating AI and machine learning (ML) into essential sectors such as healthcare, agriculture, education, governance, energy, automotive, banking and finance, infrastructure, and manufacturing—has resulted in a growing demand for engineers with specialized knowledge in these technologies. Consequently, individuals who possess skills in AI and ML will be well-prepared to meet the changing needs of the job market.

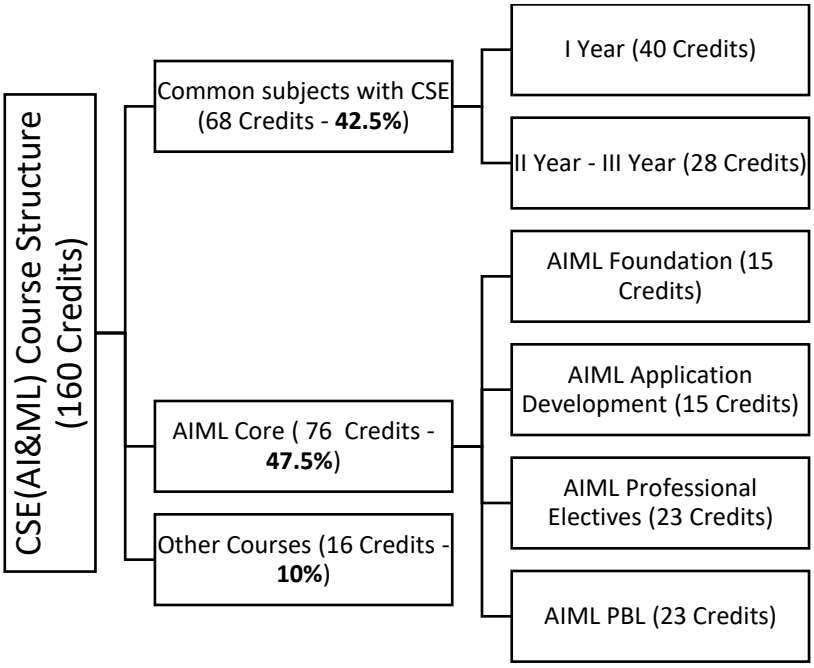
At RV College of Engineering, the Department of Artificial Intelligence and Machine Learning was established in 2021 with an initial enrollment of 60 students. Acknowledging the rising interest and demand for this field, the intake capacity was expanded to 120 students starting in 2023. The program is carefully structured to provide a solid foundation in Computer Science Engineering while offering specialized training in the latest Artificial Intelligence and Machine Learning developments. To align with emerging industry trends and academic progress, the department has been rebranded as Computer Science Engineering (Artificial Intelligence and Machine Learning) beginning in 2024, signifying its comprehensive and forward-thinking curriculum.

Vision of CSE(AI & ML) Engineering Program at RVCE

To develop sustainable solutions for the greater good of society through quality engineering education in CSE(Artificial Intelligence and Machine Learning), with innovation, research, and consultancy activities.

CSE(AI & ML) engineering curriculum (Total credits: 160)

The Bachelor of Engineering in CSE(Artificial Intelligence and Machine Learning) program offers a comprehensive curriculum encompassing all fundamental Computer Science Engineering courses. It is specifically tailored to provide in-depth knowledge and skills required to create innovative engineering solutions utilizing AI and ML technologies. Students will engage with advanced concepts and practical applications, preparing them for the rapidly evolving landscape of Artificial intelligence and Machine Learning in various industries.



Sl.No.	Item	Description	Credits allocation
1	**First Year**	Common Syllabus - Computer Science Stream	**40**
2	**Common with Computer Science and Engineering (II & III Year)**	• Programming languages: C, C++, Java, Python, Web Programming, etc. • Data structures • Database management • Operating systems • Design and analysis of algorithms • Principles of software engineering • Computer Networks • Embedded Hardware • Discrete Mathematics	**28**
3	**Foundation Courses of AI & ML**	• Introduction to AI • ML Algorithms • Statistics for Data Scientists • Mathematics for ML	**15**
4	**AI & ML Application Development courses**	• Big data Analytics • Computer Vision and Image Analysis • Natural language Processing & Transformers • Deep learning models • Generative AI • Stream Processing	**15**
6	**Professional Elective Streams**	• **Intelligent Computing:** Cognitive computing models, nature-inspired, Quantum Computing models, etc. • **Advanced learning models:** Reinforcement learning models, Edge Intelligence models, Autonomous agents, predictive analytics, Quantum Machine learning, Generative AI, etc. • **Interdisciplinary Stream:** Cyber Security, HCI, Robotics, AR and VR, etc. • **NPTEL-MOOC courses:** Interdisciplinary and Mathematics	**23**

7	**Project-based learning**	• Design thinking • Mini and Major Projects • Internships • Experiential Learning	**23**
8	**Other Courses**	• Humanity and Social Sciences • Ability Enhancement Courses and Liberal Arts • Universal Human Values • Communicative English and Kannada • Environmental Technology and Bioinspired Engineering • IPR • Fundamentals of Management & Economics	**16**

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