B.Sc. in
Artificial Intelligence
& Machine Learning

Turn Your Passion for Technology into a Career

3 years | Online | Graduate from an IIIT

IIIT Vadodara
Your Pathway to a Future in Tech

Indian Institute of Information Technology Vadodara (IIIT-V) was established in 2013 by the Ministry of Education, Government of India, as an Institute of National Importance under a Public-Private Partnership (PPP) framework. It aims to advance knowledge in IT and provide globally competitive manpower for the industry. The institute's partners include the Government of India, Government of Gujarat, Gujarat State Fertilizers and Chemicals Ltd, and Tata Consultancy Services.

Currently operating from the Government Engineering College (Gandhinagar), IIIT-V is set to move to its new 62.5-acre Vadodara campus by July 2025. A satellite campus, IIITV-ICD, was established in Diu in 2020 with state-of-the-art facilities.

With 1,231 students enrolled, the institute offers UG and PG programs, including B.Tech. in CSE, IT, ECE, AI, and an early exit B.Sc. in CS. PG programs include M.Tech. in CSE (AI/Data Analytics), MCA, and Ph.D. programs. IIIT-V is expanding its digital presence with online B.Sc. programs in CS, AI/ML, and Data Science.

Over the last five years, an average of 67 companies have visited the campus for recruitment, with 80+ global recruiters offering placements and internships.

Director's
Message

Prof. Dharmendra Singh
Director, IIIT Vadodara

Dear Students,

Welcome to IIIT Vadodara, where innovation meets excellence.

The nation is progressively heading towards "Viksit Bharat 2047". The objective of e-programs at IIIT Vadodara is to contribute to nation building by imparting quality skill oriented education for knowledge enhancement in the field of Computer Science, Information Technology, Artificial Intelligence, Data Analytics and allied areas.

As an institution, academia has been a cornerstone of inspiration, driving both individual and organizational motivation. It is through quality education that we broaden our horizons for personal growth and contribute significantly to societal advancement in technical innovation and development. Over the years, I have witnessed first-hand the transformative impact that high-quality education has on students, organizations, and society.

At IIIT Vadodara, our vision is clear: to harness the boundless talents of our youth and propel them towards global innovation. We are committed to building a community of motivated individuals and organizations dedicated to national growth and advancement. Through robust outreach programs, we tackle societal challenges head-on, fostering a culture of innovation, leadership, and entrepreneurial spirit. Our personalized educational approach ensures that our students emerge as world leaders and lifelong learners.

As a proponent of people-centric leadership, I firmly believe that diversity, equality, and inclusion are the bedrocks of any successful organization. My leadership approach is rooted in consensus-building and inclusive decision-making, involving all stakeholders at every step. Upholding ethical standards will remain the foundation of our institution, guiding every action and decision we make.

I extend a warm welcome to all who wish to join us. You are about to become part of a vibrant and dynamic community dedicated to excellence. Your journey at IIIT Vadodara will be rich with learning, discovery, and growth. Seize the opportunities, engage deeply with your peers and faculty, and make the most of the resources available to you. This experience will shape not only your career but also your character and vision for the future.

Together, let's elevate IIIT Vadodara to a beacon of excellence, innovation, and societal impact. I am here to support each of you on your academic and professional journeys.

Welcome aboard.

Warm regards,
Prof. Dharmendra Singh
Director, IIIT Vadodara

Program
Overview

Indian Institute of Information Technology, Vadodara (IIIT Vadodara) offers an Online B.Sc. in Artificial Intelligence and Machine Learning, designed to build expertise in AI methodologies, ML algorithms, computational theory, and software development. Students gain hands-on experience in designing intelligent systems, applying data-driven models, and solving real-world problems.

Through lectures, lab sessions, and projects, the program fosters research aptitude, multidisciplinary integration, and ethical AI practices. Graduates will be equipped for roles in research, development, and AI-driven solutions across industries.

Eligibility Criteria

| |
|---|
| Class 12 or equivalent (list of equivalents) |
| The final examination of the 10+2 system, conducted by a Central or State Board recognized by the Association of Indian Universities (AIU). |
| Intermediate or two-year Pre-University examination conducted by a Board or University recognized by the Association of Indian Universities. |
| Final examination of the two-year course of the Joint Services Wing of the National Defence Academy. |
| Senior Secondary School Examination conducted by the National Institute of Open Schooling with a minimum of five subjects. |
| Any Public School, Board or University examination in India or in a foreign country recognised as equivalent to the 10+2 system by the AIU. |
| H.S.C. vocational examination. |
| A Diploma recognized by the All-India Council for Technical Education (AICTE) or a State Board of Technical Education of at least 3 years duration. |
| General Certificate Education (GCE) examination (London, Cambridge or Sri Lanka) at the Advanced (A) level. |
| High School Certificate Examination of the Cambridge University or International Baccalaureate Diploma of the International Baccalaureate Office, Geneva. |
| Candidates who have completed Class XII (or equivalent) examination outside India or from a Board not specified above should produce a certificate from the AIU to the effect that the examination they have passed is equivalent to the Class XII examination. |
| In case the Class XII examination is not a public examination, the candidate must have passed at least one public (Board or Pre-University) examination earlier. |
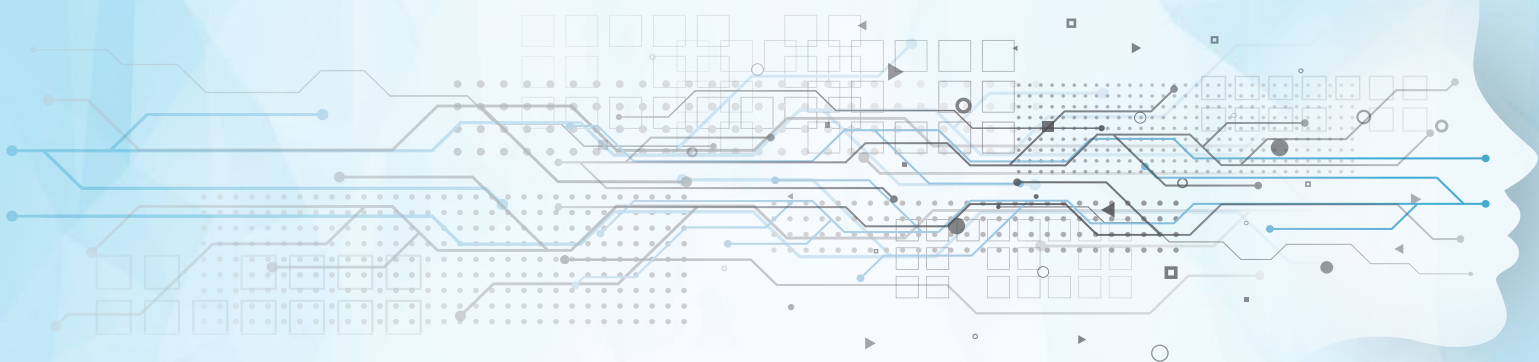
For *International* **Applicants**

If an applicant has obtained their senior secondary/high school education from an institution located outside of India: they must provide an Equivalence Certificate issued by the Association of Indian Universities - which recognises their senior secondary/high school education as equivalent to Class 12 certificate issued from a recognised central or state board in India.

The process to apply for an equivalence Certificate is detailed here (https://www.aiu.ac.in/evaluation.php)

To apply for Equivalence, students must start by applying here (https://evaluation.aiu.ac.in/Student/login/)

If an applicant's educational documents (mark sheets and certificates) were issued in a language other than English: they must provide copies of such documents translated into English by a sworn translator.

Who is this program for?

» Students fascinated by the potential of AI and ML and who wish to explore their theoretical and practical applications.

» Aspiring professionals aiming to develop intelligent systems and solutions for solving complex problems.

» Learners interested in integrating AI and ML knowledge with other fields such as engineering, business, or healthcare.

» Individuals with a background in science (10+2) with mathematics who fulfill the admission requirements.

Why Choose **IIIT Vadodara** for Your **B.Sc. in AL and ML** Journey?

Esteemed Certification of Excellence:
Graduate with a prestigious certification from IIIT Vadodara, empowering your career to new heights.

Expert-Led Learning:
Gain insights from top professionals across various business fields.

Cutting-Edge Curriculum:
This program covers the latest developments in AI and ML, equipping you with the skills to build intelligent systems and solve complex, multidisciplinary problems.

Hands-on Learning:
With a focus on practical labs, real-world projects, and continuous assessments, students gain expertise in programming, AI frameworks, and problem-solving techniques.

Professional Growth:
The program's outcomes empower you to integrate AI and ML knowledge across various industries like healthcare, business, and engineering, fostering versatility in career paths.

Salient Features of the Program

≫ Flexible Learning Schedule (Morning and Evening)

≫ Semester duration ~ 14-15 Weeks

≫ Unique Instructional Module with stress on hands on sessions and problem solving

≫ 40% Hands on and Tutorial

≫ Every Theory session is augmented with Hands on session and interactive problem solving session

≫ On successful completion of the program, guaranteed Internships/ Apprenticeship opportunities for 10% of the enrolled students

≫ Graduates of B.Sc. program will be inducted as IIIT Vadodara alumni

≫ B.Sc. Degree from IIIT Vadodara

≫ Unique Campus Immersion Program

≫ Access to IIIT Vadodara E-Cell (Entrepreneurship cell) for student startup
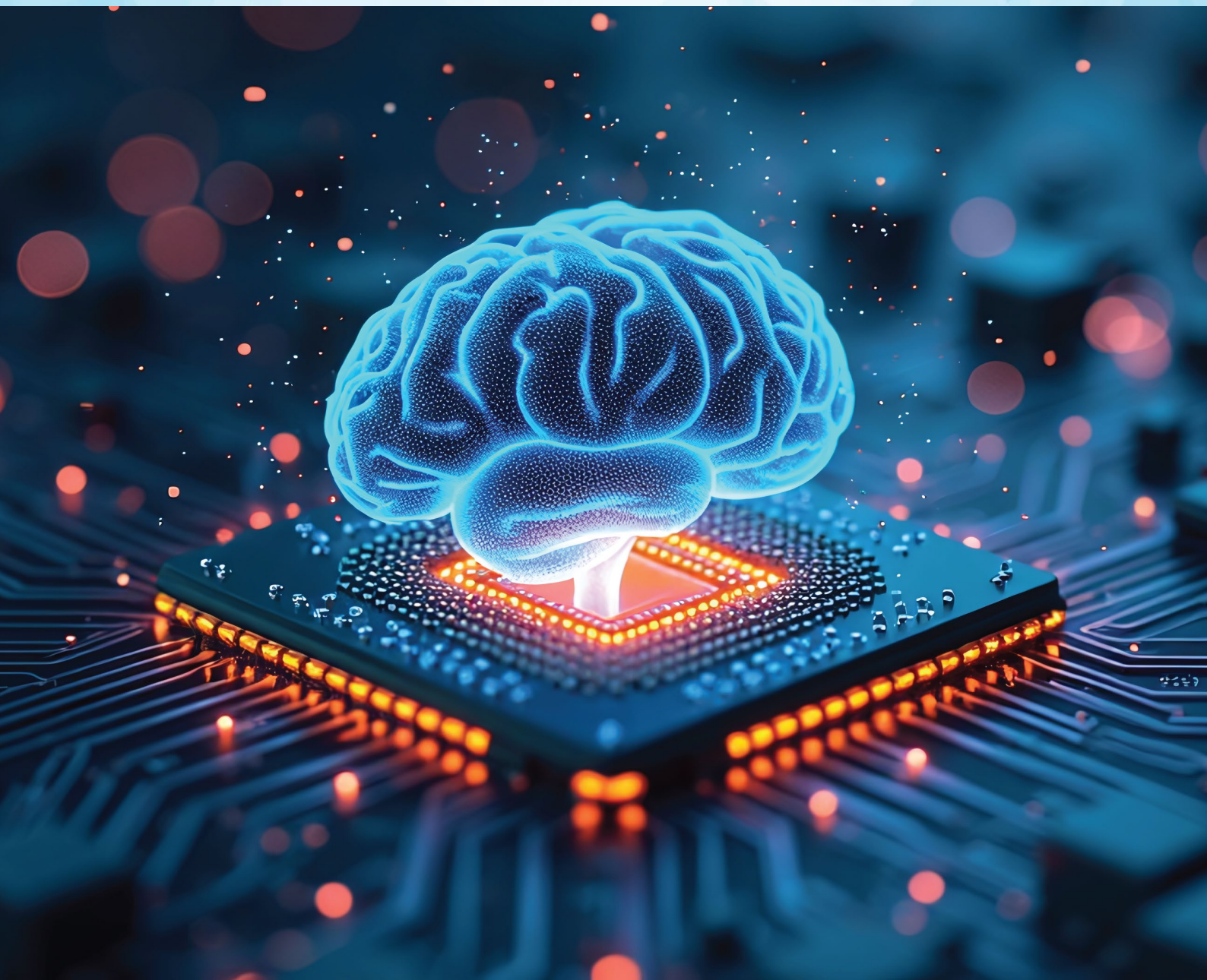
Program
Program
Objectives

Offer in-depth knowledge of AI and ML theories, methodologies, and applications.

Prepare students to develop intelligent systems and solutions capable of solving complex problems in diverse domains.

Train students in the use of AI and ML tools, programming languages, and frameworks to build practical solutions.

Develop the ability to analyze complex problems and apply AI and ML techniques to create effective solutions.

Foster research and development skills, keeping graduates informed about emerging trends and technologies in AI and ML.

Promote cross-domain knowledge integration, enabling students to apply AI & ML in fields like healthcare, engineering, and business.

Ensure understanding of ethical, legal, and societal implications of AI and ML, guiding students to make responsible professional decisions.

Emphasize hands-on learning through practical labs and real-world projects to enhance learning outcomes.
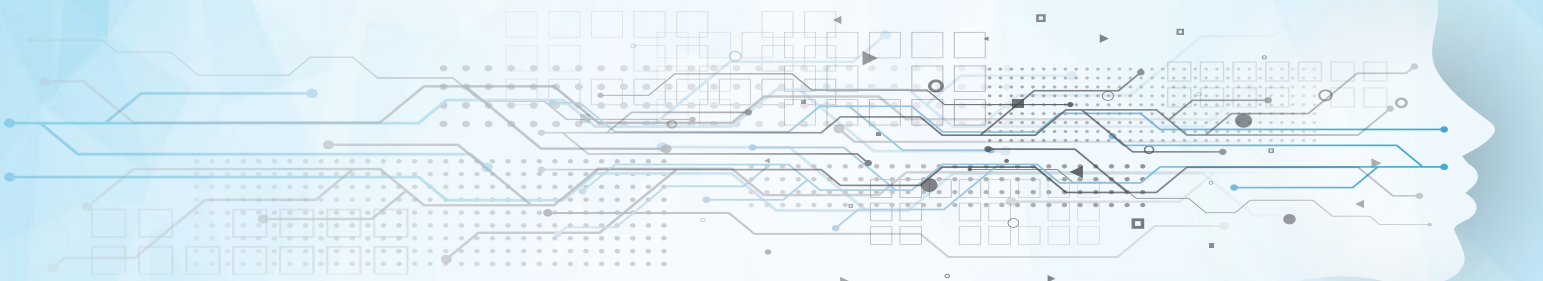
Course
Structure

Course Code	Course Name	L	T	P	C	Pre-requisites
BSCAIML 101	Introduction to Computer and Problem-Solving Techniques	3	1	0	4	None
BSCAIML 102	Programming Lab	0	0	4	2	None
BSCAIML 103	Fundamental of Artificial Intelligence	3	1	0	4	None
BSCAIML 104	Environmental Sustainability and Climate Change	2	0	0	2	None
BSCAIML 105	Introduction to IoT	3	0	0	3	None
BSCAIML 106	Communication Skill - 1	2	0	0	2	Basic English
BSCAIML 106	Ethics and Social Implications of AI	3	0	0	3	None

Total Credits for Semester I: 20

Semester II

Course Code	Course Name	L	T	P	C	Pre-requisites
BSCAIML 201	Object Oriented Programming	3	1	0	4	BSCAIML 101
BSCAIML 202	Object Oriented Programming Lab	0	0	4	2	None
BSCAIML 203	Probability and Statistics	3	1	0	4	None
BSCAIML 204	Computer Organization and Architecture	3	1	0	4	None
BSCAIML 205	Elective	2	0	0	2	Varies
BSCAIML 206	Elective Lab	0	0	4	2	Varies
BSCAIML 206	Communication Skill - 2	2	0	0	2	None

Electives

Course Code	Elective Name	L	T	P	C	Pre-requisites
BSCAIML 207	Web Analytics	3	1	0	4	None
BSCAIML 208	Web Analytics Lab	0	0	4	2	None
BSCAIML 209	Advance MS-Office	3	1	0	4	BSCAIML 101
BSCAIML 210	Advance MS-Office Lab	3	1	0	4	None

Total Credits for Semester II: 20

Semester III

Course Code	Course Name	L	T	P	C	Pre-requisites
BSCAIML 301	Data Structures and Algorithms	3	1	0	4	BSCAIML 201
BSCAIML 302	Data Structures and Algorithms Lab	0	0	2	1	None
BSCAIML 303	Python Programming	3	1	0	4	BSCAIML 101
BSCAIML 304	Python Programming Lab	0	0	2	1	None
BSCAIML 305	DBMS	3	1	0	4	None
BSCAIML 306	DBMS Lab	0	0	2	1	None
BSCAIML 307	Introduction to Software Engineering	2	0	0	2	None
BSCAIML 308	Human Values and Ethics	1	0	0	1	None
BSCAIML 309	Seminar	0	0	4	2	None

Total Credits for Semester III: 20
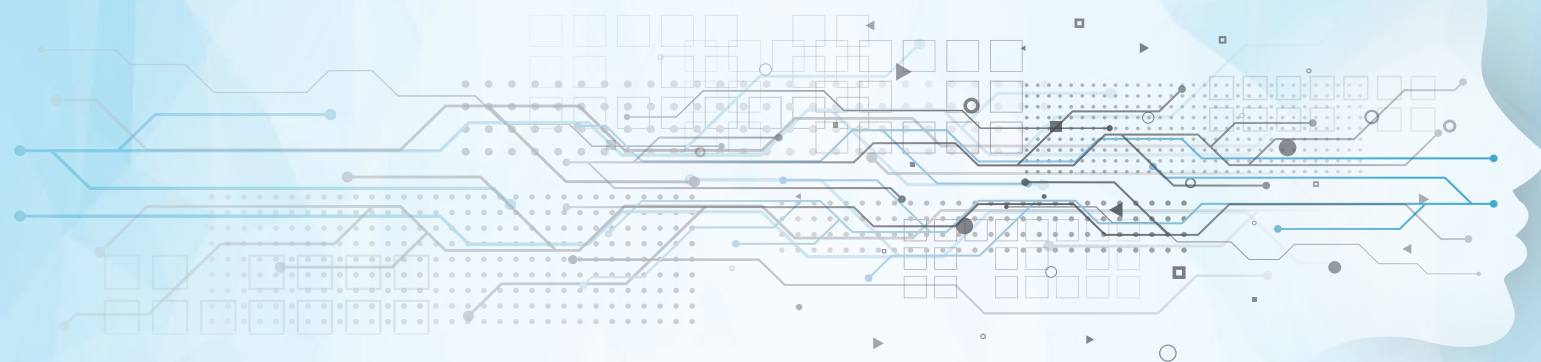
Semester IV

Course Code	Course Name	L	T	P	C	Pre-requisites
BSCAIML 401	Computer Networks	3	1	0	4	None
BSCAIML 402	Computer Networks Lab	0	0	2	1	None
BSCAIML 403	Introduction to Operating System	3	1	0	4	None
BSCAIML 404	Exploratory Data Analysis and Visualization	2	0	0	2	BSCAIML 303
BSCAIML 405	Exploratory Data Analysis and Visualization Lab	0	0	4	2	BSCAIML 303
BSCAIML 406	Fundamental of Machine Learning	3	1	0	4	BSCAIML 303
BSCAIML 407	Internship / Project	0	0	4	2	None

Total Credits for Semester IV: 19

Semester V

Course Code	Course Name	L	T	P	C	Pre-requisites
BSCAIML 501	Machine Learning Techniques	3	1	0	4	BSCAIML 406
BSCAIML 502	Machine Learning Techniques Lab	0	0	2	2	BSCAIML 406
BSCAIML 503	Basics of Natural Language Processing	3	0	0	3	BSCAIML 406
BSCAIML 504	Research Methodology	2	0	0	2	None
BSCAIML 505	Elective	2	1	0	3	Varies
BSCAIML 506	Elective Lab	0	0	2	1	Varies
BSCAIML 507	Mini Project	0	0	12	6	Varies
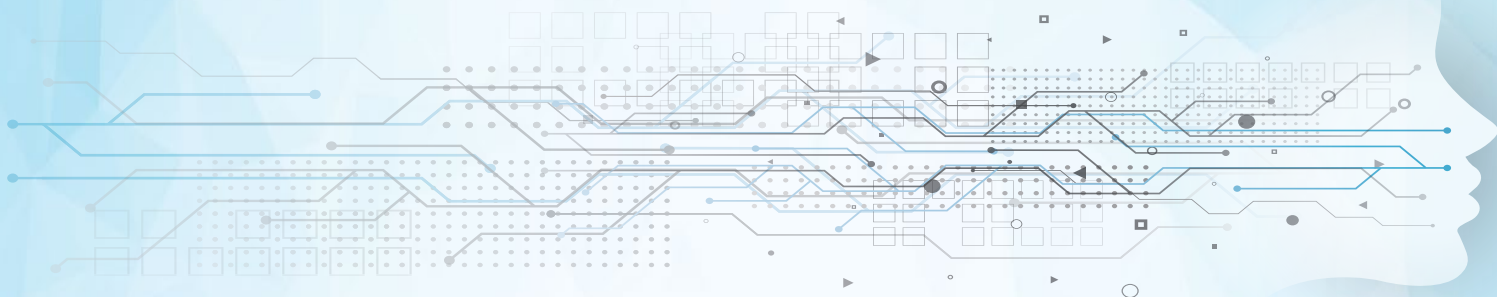
Electives

Course Code	Elective Name	L	T	P	C	Pre-requisites
BSCAIML 508	Artificial Neural Networks	3	1	0	4	BSCAIML 501
BSCAIML 509	Artificial Neural Networks Lab	0	0	4	2	BSCAIML 501
BSCAIML 510	Big Data	3	1	0	4	None
BSCAIML 511	Big Data Lab Lab	3	1	0	4	None
BSCAIML 512	Data Mining					None
BSCAIML 513	Data Mining lab					None
BSCAIML 514	IoT					None
BSCAIML 515	IoT Lab					None

Total Credits for Semester V: 21

Semester VI

Course Code	Course Name	L	T	P	C	Pre-requisites
BSCAIML 601	Deep Learning Techniques	3	1	0	4	BSCAIML 501
BSCAIML 602	Deep Learning Techniques Lab	0	0	2	1	BSCAIML 501
BSCAIML 603	Elective – 1	3	0	0	3	Varies
BSCAIML 604	Elective - 2	2	0	0	2	Varies
BSCAIML 605	Major Project	0	0	20	10	Varies
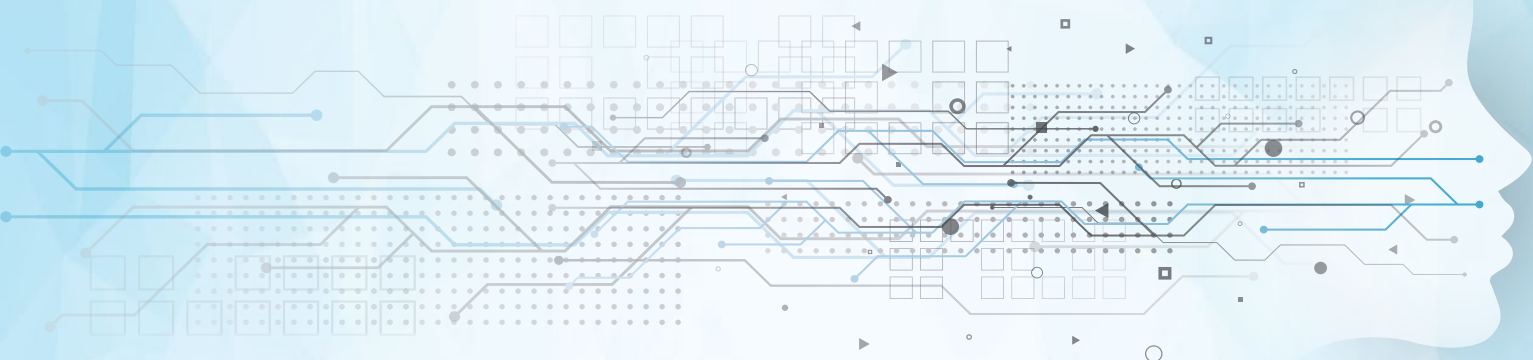
Electives

Course Code	Elective Name	L	T	P	C	Pre-requisites
BSCAIML 606	Computer Vision	3	0	0	3	None
BSCAIML 607	Cyber Security	3	0	0	3	None
BSCAIML 608	Cloud Computing	3	0	0	3	None
BSCAIML 609	AI in Healthcare	3	0	0	3	None
BSCAIML 610	Introduction to R	2	0	0	2	None
BSCAIML 611	Information Security and Cyber Laws	2	0	0	2	None
BSCAIML 612	Predictive Analytics	2	0	0	2	None

Total Credits for Semester VI: 20
Total Program Credits - 120

Pedagogy and
Assessment

Combination of theoretical lectures, practical labs, and real-world projects.

Continuous assessment through quizzes, assignments, and lab work.

Final evaluations through exams, project reports, and presentations.

Program
Outcomes

➢ Graduates will possess a strong foundation in the core concepts and techniques of artificial intelligence and machine learning, including algorithms, data structures, statistical methods, and computational theory.

➢ Graduates will be proficient in programming languages, software development, and the use of AI and ML tools and frameworks, enabling them to design, implement, and evaluate AI and ML solutions for various applications.

➢ Graduates will demonstrate the ability to analyze complex problems, identify appropriate AI and ML techniques, and develop effective solutions by applying mathematical, computational, and analytical methods.

➢ Graduates will be equipped to engage in research and development activities, contributing to advancements in AI and ML through innovative approaches and original research, while staying current with emerging trends and technologies.

➢ Graduates will be capable of integrating AI and ML knowledge with other domains such as computer science, engineering, business, and healthcare, enabling them to develop comprehensive and multidisciplinary solutions.

➢ Graduates will understand the ethical, legal, and societal implications of AI and ML technologies, and will be prepared to address these considerations responsibly, ensuring that their professional practice adheres to ethical standards and promotes positive social impact.

Admission
Process

STEP 1:
Online Application

STEP 2:
Payment of Application Fees
(Non Refundable)

STEP 3:
Document Verification

STEP 4:
Payment of Admission Fees

STEP 5:
Acknowledgement

Fee Structure

Sr No	Fees Components	Sem I	Sem II	Sem III	Sem IV	Sem V	Sem VI
1	Caution Deposit (Refundable)	10000	10000	-	-	-	-
2	I Card Fee (One time)	100	-	-	-	-	-
3	Institute Development Contribution (IDC) (One time)	-	-	-	-	-	-
4	Tuition Fee	37500	37500	37500	37500	37500	37500
5	Campus Immersion Fee	3000	-	-	-	-	3000
6	Institute Registration Fees	1000	1000	1000	1000	1000	1000
7	Alumni Fee	1000	1000	1000	1000	1000	1000
8	Convocation Fee	1000	1000	1000	1000	1000	1000
9	Life Insurance*	100		100		100	
10	Medical Insurance*	1400		1400		1400	
	Total	**55100**	**50500**	**42000**	**40500**	**42000**	**43500**

Note

≫ All fees are non-refundable.

≫ Additional fees may be incurred in case of repetition of courses.

≫ You have the option to learn at your own pace and can also register for fewer courses than prescribed in a given semester.

≫ There is no minimum credit requirement each semester, however, if you plan to not register for any credit in a semester, you need to maintain your active enrollment by paying a Program Continuation Fee of Rs. 3,000 per semester

≫ Medical insurance (group insurance) fees may change depending on the cohort size.
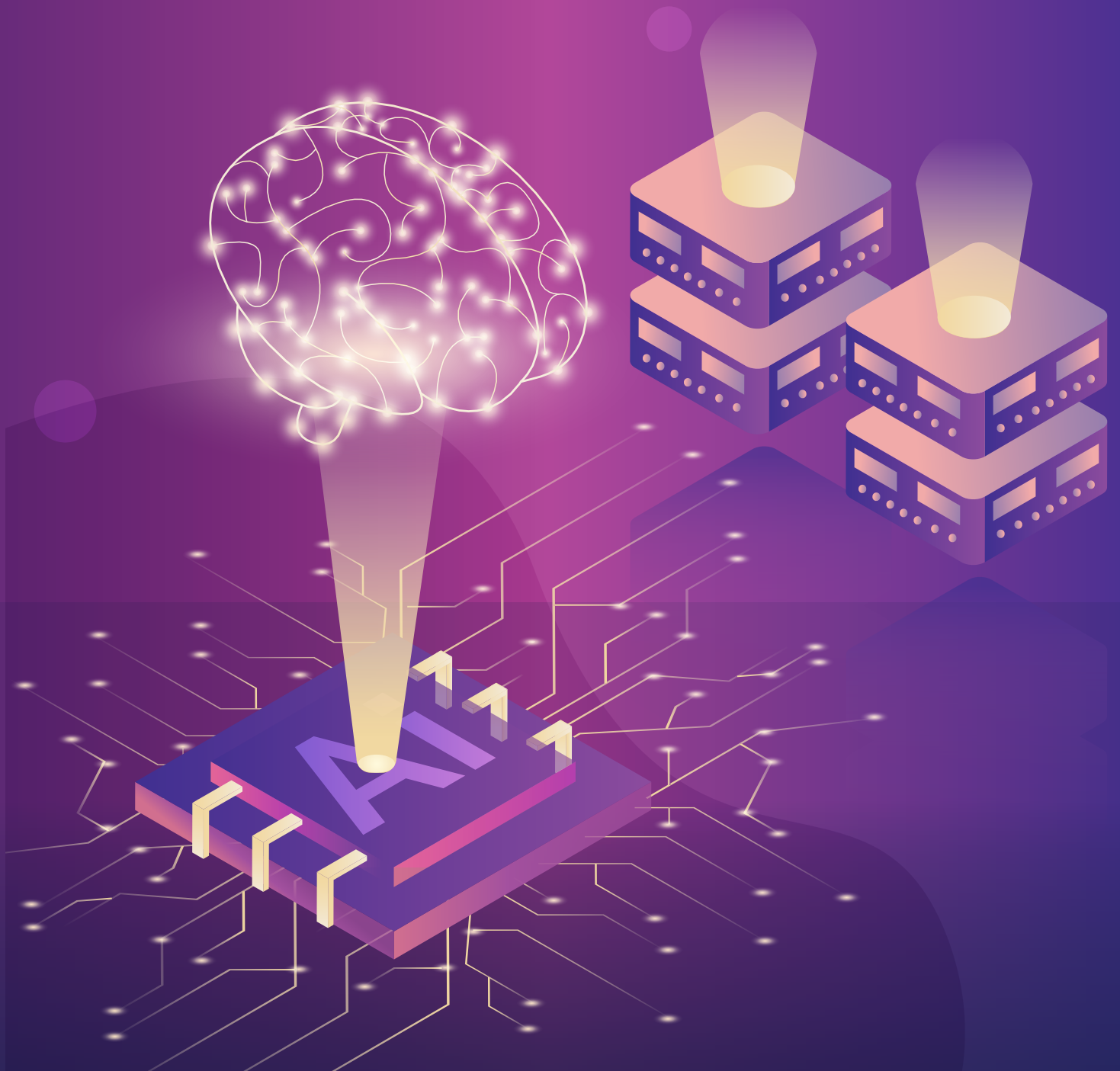
Apply Now

Contact Us :

For application and any other information please get in touch with us

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🌐 https://cep.digivarsity.com/iiit-vadodara