

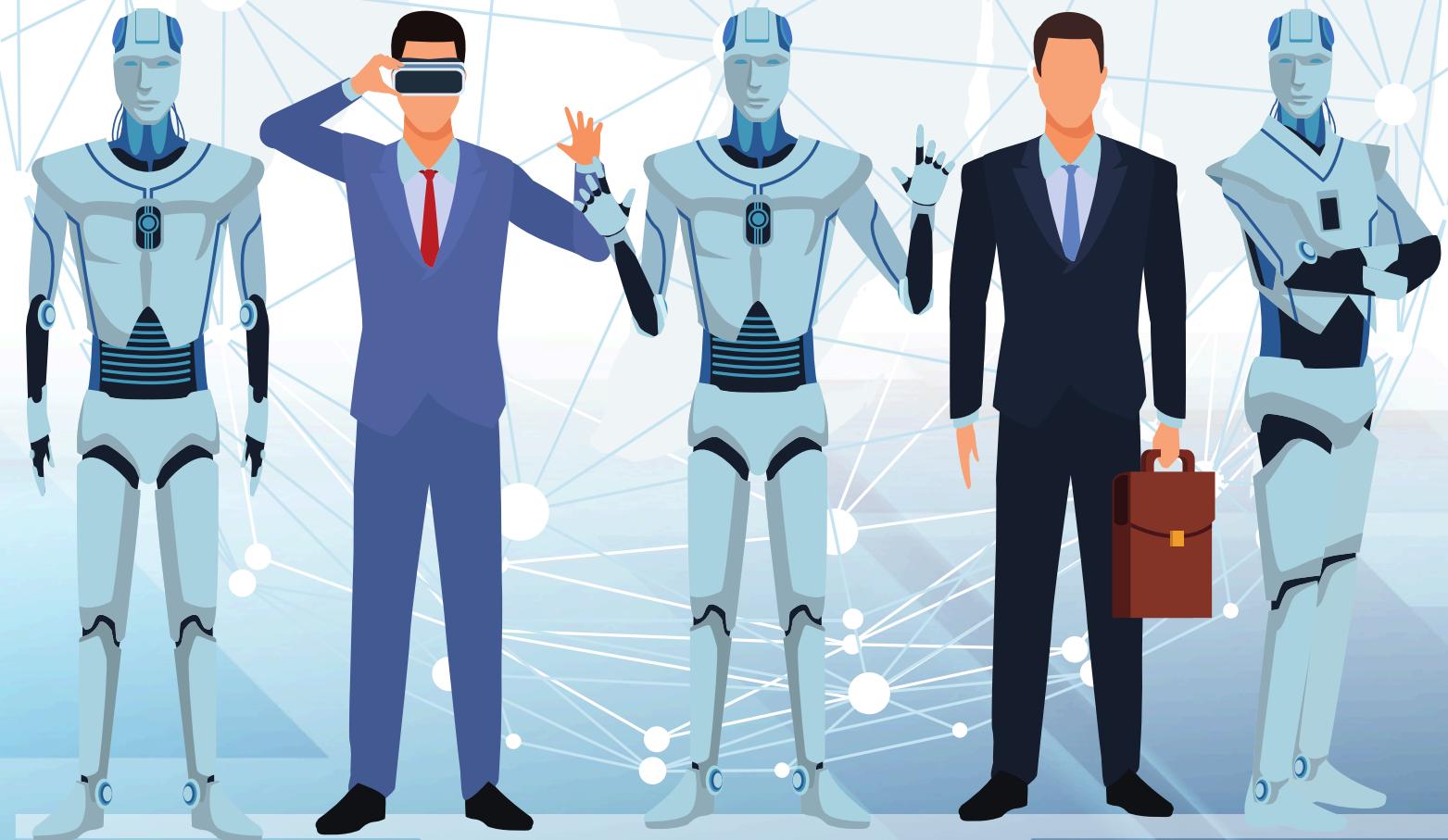
IIT-Ropar & ICE(India)

offers

AI Technocrat Program:

Empowering the Future of Engineering with AI

Academic Year 2025-26



IIT Ropar
in collaboration
with ICES

AI Technocrat Program:

The Institution of Civil Engineers Society (ICES), in collaboration with IIT Ropar, offers the AI Technocrat Program to equip B.Tech students with cutting-edge skills in Artificial Intelligence. This program is designed to empower future engineers to lead the charge in optimizing processes, enhancing efficiency, and promoting sustainability in diverse engineering sectors.

Program Overview

AI Technocrats design and implement AI solutions across engineering disciplines, utilizing intelligent algorithms and automation to optimize systems. Their work addresses key industry challenges, reduces waste, and promotes energy efficiency—fostering sustainability and improving operational performance. The syllabus is validated by IIT Ropar and approved by NCVET and recognised by leading employers and industries.



Who should Enrol?

B-Tech Pursuing Candidates



Delivery Mode -

Blended mode (Online + Offline)

Course Details

Duration

600 hours

NSQF Level

5.0

Credits

20

Key Benefits of the Program:



Program Offered for all disciplines of Engineering



Participant will get credits in ABC (Academic Bank of Credit)



Interactive Classes Conducted By Industry Experts & IIT Ropar



Dual Certification: AI Technocrat Certificate by NCVET- ICES & AI Minor Certificate by IIT Ropar



Better Job Prospects (Industry Ready & Future Proof)



AWS account will be provided to participant



Bridge gap between Academic Learning & Industry Requirements



Participant will Earn 20 Credits, Which will be equivalent to internship policy of AICTE



Convocation in IIT-ROPAR



Participant will get Alumni status of IIT Ropar

Hands-On
Experience with
10+ Industry Tools



AWS Integration

Real-world
Business
Applications



Immersive
Pedagogy

100+ Hours Live
Online Sessions



CURRICULUM

ARTIFICIAL INTELLIGENCE - COMMON MODULES

(300 HOURS)



1. Fundamentals of Artificial Intelligence (AI)

- Introduction to AI in all Technical Trades
- AI Ethics and Impact on society
- Aptitude & Mathematics Fundamentals
- Data Handling



2. Python Programming and Data Science for AI

- Introduction to Python
- Data Structures and Algorithms in Python
- Object-Oriented Programming (OOP) in Python
- Libraries for AI and Data Science

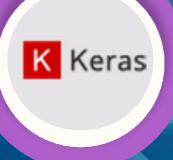


3. Build Blocks of Artificial Intelligence (A.I) Specializations

- Fundamentals of Machine Learning (ML)
- Basics of Deep Learning
- Fundamentals of Natural Language Processing (NLP)
- Basics of Computer Vision
- Fundamentals of Internet of Things (IoT)
- Basics of Robotics



4. Employability Skills



CORE ENGINEERING

(300 HOURS)



1. Elective 1: Computer Science and Information

Applications of AI tools/algorithms in Computer Science and Information Technology Engineering

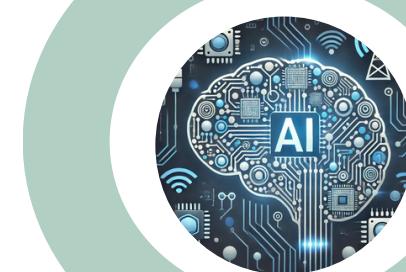
- Use AI tools/algorithms in Business Intelligence and Data Analysis
- Utilize AI tools/algorithms in Software Development Engineering
- Utilize AI tools/algorithms in Cyber security
- Use AI tools/algorithms in IoT and Edge Computing
- Utilize AI tools/algorithms in Cloud Computing
- Advancement in AI for CS and IT
- Project / OJT

2.

Elective 2: Electronics & Communication Engineering

Applications of AI tools/algorithms in Electronics & Communication Engineering

- Utilize AI tools /algorithms in Signal Processing
- Use AI tools /algorithms in Communication Systems
- Use AI tools /algorithms in Embedded Systems and IoT
- Utilize AI tools /algorithms in VLSI Design and Hardware Optimization
- Use AI tools /algorithms in Robotics and Autonomous
- Utilize AI tools /algorithms in Wireless Communication and Network Optimization
- Use AI tools /algorithms in Electronic System Design and Optimization
- Advancement in AI for ECE Project / OJT

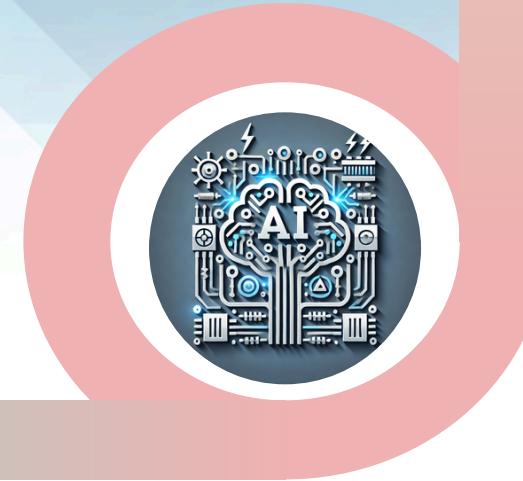


3.

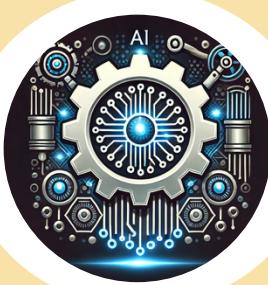
Elective 3: Electrical Engineering

Applications of AI tools/algorithms in Electrical Engineering

- Utilize AI tools /algorithms in Power Systems and Smart Grids
- Use AI tools /algorithms in Control Systems and Automation
- Utilize AI tools /algorithms in Signal Processing and Communication Systems
- Use AI tools /algorithms in Electronics and Embedded Systems
- Utilize AI tools /algorithms in Renewable Energy Systems
- Use AI tools /algorithms in Robotics and Autonomous
- Utilize AI tools /algorithms for Electric Vehicles
- Advancement in AI for Electrical Engineering Project / OJT



CORE ENGINEERING



4. Elective 4: Mechanical Engineering

Applications of AI tools/algorithms in Mechanical Engineering

- Utilize AI tools /algorithms in Product Development
- Use AI tools /algorithms in Manufacturing and Production Systems
- Utilize AI tools /algorithms in Predictive Maintenance and Reliability Engineering
- Use AI tools /algorithms in Control Systems and Automation
- Utilize AI tools /algorithms in Fluid Mechanics and Thermal Systems
- Use AI tools /algorithms in Energy Systems and Sustainability
- Utilize AI tools /algorithms in Materials Science and Additive Manufacturing
- Advancement in AI for Mechanical Engineering
- Project / OJT

5.

Elective 5: Civil Engineering

Applications of AI tools/algorithms in Civil Engineering

- Utilize AI tools /algorithms in Structural Engineering
- Use AI tools /algorithms in Construction Management
- Utilize AI tools /algorithms in Geotechnical Engineering
- Use AI tools /algorithms in Transportation Engineering
- Utilize AI tools /algorithms in Environmental and Water Resources Engineering
- Use AI tools /algorithms in Urban Planning and Smart Cities
- Utilize AI tools /algorithms in Construction Automation
- Utilize AI tools /algorithms in for sustainable Civil Engineering
- Advancement in AI for Civil Engineering
- Project / OJT

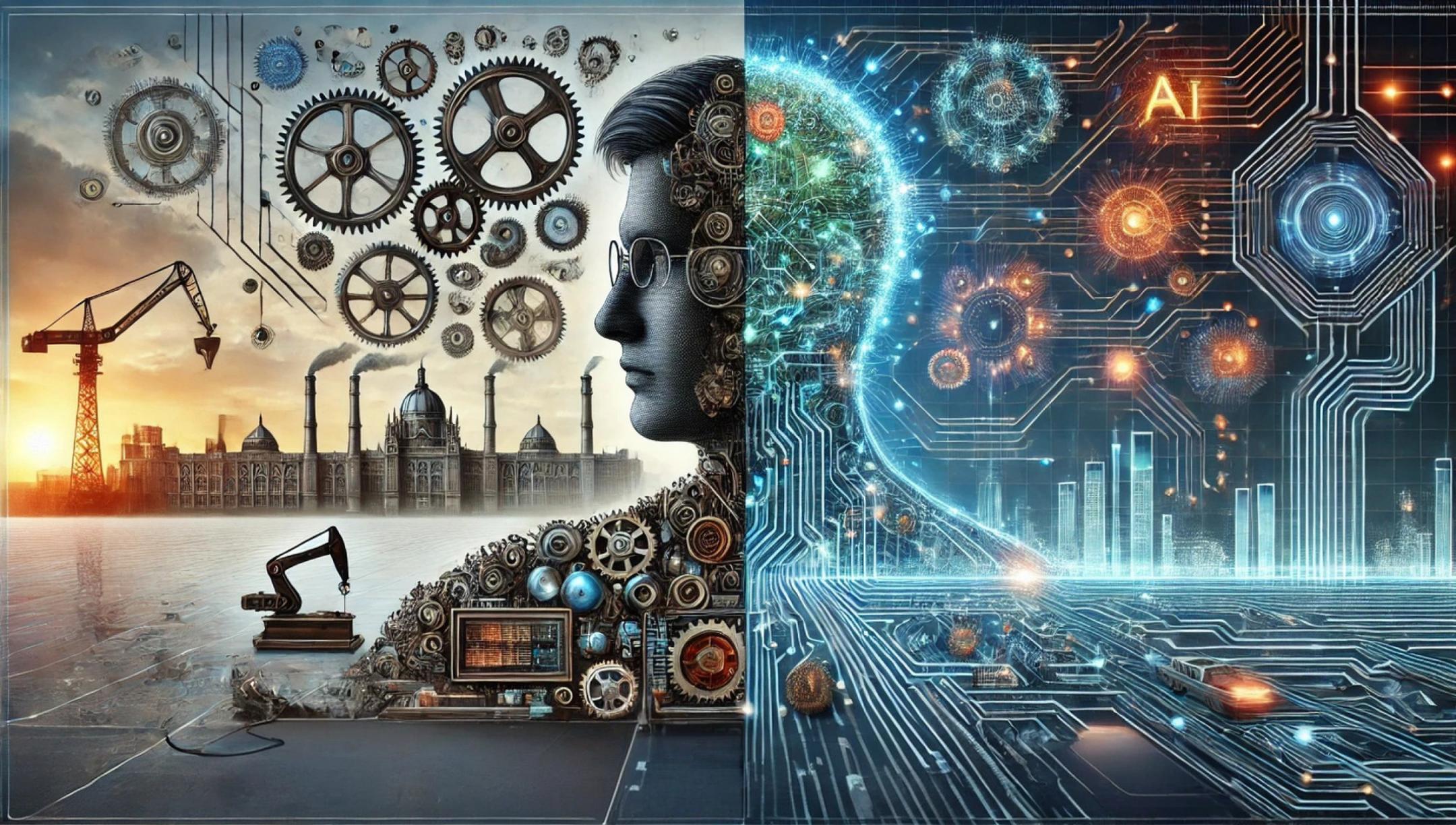
6.

Elective 6: Metallurgical and Materials Engineering

Applications of AI tools/algorithms in Metallurgical and Materials Engineering

- Use AI tools/algorithms for Materials Design
- Utilize Process Optimization and Control in Metallurgy
- Use Computational Techniques in Microstructure Analysis
- Utilize AI tools/algorithms for Predictive Modelling of Material Behaviour
- Use AI tools/algorithms Utilize in Smart Manufacturing and Industry 4.0
- Utilize AI in Materials Recycling and Circular Economy
- Advancement in AI for Metallurgy and Materials Engineering
- Project/OJT





For inquiries, please contact us at:



Phone: 9899118473/ 0124-4128301/201



E-mail: info@iceskills.in



<https://ices-iitrpr-ai.vercel.app>



Address: Indian Institute of Technology (IIT) , Nangal Road, Rupnagar, Punjab - 140001