PG DIPLOMA IN
INTELLIGENT AND SUSTAINABLE MANUFACTURING

BECOME A TECHNOLOGY CHAMPION IN BUILDING INTELLIGENT INDUSTRIES

AT PSG COLLEGE OF TECHNOLOGY
COIMBATORE
ABOUT THIS PROGRAM

This program builds on the foundation provided by a B.E. / B. Tech. degree. It offers a curriculum that is grounded in the real-world intelligent and sustainable manufacturing technology environment. This program integrates experiential learning through masterclass lectures, industrial visits, capstone projects, and lab exercises utilizing state-of-the-art digital tools to create future Techno-Managers & Champions to drive transformation.

- Duration 12 months | 4 modules, each of 12 weeks duration
- 2 Hours per day | Offline Program | Evening Classes
- 4 Industrial Visits | 4 Capstone Projects

OBJECTIVES

To equip engineering graduates and industrial professionals with the future technologies and hands-on skills required to transform and manage Smart, Digital, Future Industries by,

- Learning and experiencing advanced manufacturing practices like Lean and TPM for increased efficiency, production, and process quality
- Developing skills in Intelligent digital manufacturing through Industrial IoT, Artificial Intelligence, Immersive Technology (AR), Robotics & Automation and Sustainable manufacturing solutions
- Initiating and enabling life-long learnings through experiential, skill based and industry oriented program
OUTCOMES

On successful completion of the programme, the students will:

- Attain Skill Level 8 according to the National Skill Qualification Framework (NSQF) in advanced manufacturing practices and intelligent digital manufacturing technologies

- Gain hands on experience to integrate cutting-edge technologies and innovative strategies to transform the traditional manufacturing processes into intelligent manufacturing systems

- Be ready for various career paths including industrial jobs, research opportunities, and entrepreneurship
COURSE CURRICULUM

MODULE I
ADVANCED MANUFACTURING

This module is designed to meet the rising demand for automation skills in the manufacturing sector. It offers a comprehensive framework for understanding advanced manufacturing processes and technologies, including Lean Manufacturing, Supply Chain, and TPM. Through theoretical learning, hands-on labs, and practical applications, students gain a holistic educational experience.

1. THEORY I
   Introduction to Manufacturing Systems
   Theory - 15 hrs

2. THEORY CUM LAB I
   Lean Manufacturing
   Theory - 15 hrs
   Lab - 30 hrs

3. THEORY CUM LAB II
   Total Productive Maintenance
   Theory - 15 hrs
   Lab - 15 hrs

4. CAPSTONE PROJECT I
   Industrial Visit & Capstone Project I
   Lab - 30 hrs

MODULE II
DIGITAL MANUFACTURING

This module aims to provide a comprehensive understanding of the fourth revolution in manufacturing. Explore the transformative changes taking place in the manufacturing industry, driven by digital-based technologies like IIoT, Artificial Intelligence, AR/VR, RPA, and Data Analytics & Artificial Intelligence. Gain insights into the development of a smart industrial ecosystem enabled by these advancements.

1. THEORY CUM LAB III
   Introduction to Industry 4.0 and OT-IT Integration
   Theory - 15 hrs
   Lab - 30 hrs

2. THEORY II
   Digital Industries – IIoT, Artificial Intelligence, AR/VR, RPA
   Theory - 30 hrs

3. PRACTICAL I
   Data Analytics & Artificial Intelligence Lab
   Lab - 15 hrs

4. CAPSTONE PROJECT II
   Industrial Visit & Capstone Project II
   Lab - 30 hrs
COURSE CURRICULUM

MODULE III
ROBOTICS AND AUTOMATION

Immerse yourself in the fundamental concepts of robotics and automation, covering design, programming, and the latest advancements in robotics technologies like AMR, COBOTs and Intelligent Automation. Develop expertise in design of intelligent robotic systems that are both efficient and adhere to industry standards.

1. THEORY III
   Introduction to Advanced Robotics
   - Theory: 30 hrs
2. THEORY CUM LAB IV
   AMR, COBOTs and Intelligent Automation
   - Theory: 15 hrs
   - Lab: 30 hrs
3. PRACTICAL II
   Design of Automation Systems Lab (Assessment Practices)
   - Lab: 15 hrs
4. CAPSTONE PROJECT III
   Industrial Visit & Capstone Project III
   - Lab: 30 hrs

MODULE IV
SUSTAINABILITY

The primary objective of this module is to concentrate on the essential aspects of Industrial sustainability goals and its assessments. It provides candidates with the opportunity to explore practical strategies that contribute to the development of a sustainable ecosystem. These strategies encompass enhancing energy efficiency, reducing carbon footprints, and building a future that is sustainable and free from carbon emissions.

1. THEORY CUM LAB V
   Introduction to Industrial Sustainability Goals (Incl. Assessment Practices)
   - Theory: 15 hrs
   - Lab: 30 hrs
2. THEORY IV
   Energy Efficiency, Alternate Energy and Carbon offsets
   - Theory: 30 hrs
3. PRACTICAL III
   Sustainability Lab
   - Lab: 15 hrs
4. CAPSTONE PROJECT IV
   Industrial Visit & Capstone Project IV
   - Lab: 30 hrs
FACULTY

- Learn from global industry renowned factoryscience’s faculty and thought leaders in smart and sustainable manufacturing technology.

- PSG Tech’s distinguished faculty is a pool of highly qualified academicians who bring with them, a wealth of expertise and diverse experiences.

- The faculty uses experiential content and blended learning approaches to equip students with necessary skills in technologies. Collaborations with industry professionals and experts to bring real-world experience into the classroom and laboratories.

TECHNOLOGY PARTNERS
GLOBAL DEMAND FOR INDUSTRY 4.0 PROFESSIONALS

- Digital Manufacturing Lead
- Digital Manufacturing Consultant
- Manufacturing Execution System Application Developer
- Manufacturing Application Developer
- Smart Factory Manufacturing Engineer
- Industrial Engineer - Digital Manufacturing
ABOUT PSG COLLEGE OF TECHNOLOGY

PSG College of Technology (PSG CT), established in the year 1951 by PSG & Sons’ Charities, is an ISO 9001 - 2015 certified autonomous college affiliated to Anna University, Chennai. The college offers 21 undergraduate programmes and 24 postgraduate programmes including Engineering and Technology, computer applications, management sciences, basic and advance sciences. PSG CT is equipped with several state-of-the-art Centers of Excellence that include TIFAC-Core in Product Design, Machine Tool Research Centre, Engineering Design Centre, Virtual Reality Centre, Tool and Die Centre, Centre for Nano-technology, Centre for Robotics, Centre for excellence in Artificial Intelligence and Software, Centre for Non-Linear Dynamics, Danfoss Centre of Excellence in Climate and Energy, Centre of Excellence for Welding Engineering and Technology. Under the banner of PSG Industrial Institute, there are in-campus manufacturing units of machine tools, pumps, motors and off-campus foundry units. Furthermore, PSG CT has established very good network with industry, research institutes, alumni and entrepreneurs. PSG CT was ranked second under Colleges/Institutes (Govt. & Govt. Aided) (Technical) by ATAL Ranking of Institutions on Innovation Achievements (ARIIA), Ministry of Education, Government of India in the year 2021 and the best industry linked institution by AICTE-CII in the year 2012. During the occasion of India assuming the G20 Presidency on December 1, 2022, PSG CT was identified as one among the 75 educational institutions across India, with a special responsibilities towards organizing special lectures, student exchange programmes, academic and cultural activities to spread awareness among the youth and the academic community on the G20 agenda.
ABOUT THE FACTORY SCIENCE

The Factory Science, powered by Maxbyte Technologies Services Private Limited, offers Industry 4.0 Learning Solutions to students, academics, and industry professionals. Utilizing its Industrial digitization expertise, the platform extends its services from individuals and educational institutions to industrial ecosystems and governments entities. This interactive and experiential learning platform is designed for students, faculty members, and working professionals to enhance their skills in Industry 4.0. It features a smart manufacturing experience setup with byteFACTORY applications, enabling users to explore smart manufacturing key use cases. Furthermore, the platform provides a range of training programs to empower users in learning and adopting Industrial Digitization.

Maxbyte Technologies Services Private Limited was founded in 2016. The company serves as a global Industry 4.0 solutions provider, enhancing the industrial product lifecycle. Through our products and services, we facilitate smart connected engineering, manufacturing, and services to enhance productivity, quality, cost-efficiency, energy reduction, and the adoption of new business models. Presently, we are driving the transformation of over 50 top manufacturing companies in India across sectors such as automobile, air cooling, renewable energy, industrial products, pharmaceuticals, and machine tools.
PROGRAM JOURNEY

CANDIDATES

ADMISSION
- Online Registration
- Review, Interview & Selection
- Admission Confirmation

PGD - ISM PROGRAM
- Program Initiation
- Theory Classes
- Practical Labs
- Capstone Projects & Industrial Visits
- Internal & External Assessment
- Graduation

CAREER
- Industry

ADMISSION PROCESS

ONLINE REGISTRATION
www.psgtech.edu or https://thefactoryscience.com
01 Mar’24 - 12 Apr’24

APPLICATION SUBMISSION
Complete online application form and submit along with the application fees
4 Mar’24 - 19 Apr’24

APPLICATION REVIEW
Application review and candidates interview by PSG Tech & Maxbyte
25 Mar’24 - 26 Apr’24

OFFICIAL ADMISSION OFFER
Shortlisted candidates are provided with an admission offer letter
25 Mar’24 - 26 Apr’24

CONFIRM ADMISSION
Pay tuition fees in the stipulated time and confirm admission
25 Mar’24 - 3 May’24

PROGRAM INITIATION
Candidates can join the Course on the program initiation date
13 May’24
WHO CAN APPLY?

B.E. / B.TECH. GRADUATES
Applicants who have appeared in the B.E. / B.Tech. examination or have successfully graduated in any engineering discipline are eligible to submit their application.

INDUSTRY PROFESSIONALS
Professionals from the private or government sectors holding B.E. or B.Tech. qualifications, along with expertise in the manufacturing industry.

RESEARCH & DEVELOPMENT PROFESSIONALS
Research Scholars, Industrial Product Developers or Application Engineers, Technologist & Lifecycle Managers.

FEES
During the online application process, a registration fee of ₹ 1,000 needs to be paid. Post receipt of a formal letter of admission, a candidate has to pay the stipulated tuition fees.

Course Fees ₹ 1.6 lakhs + GST for the whole program (to be paid in total at the beginning of the program within one week of receiving Admission offer). If tuition fees are paid in instalments, the following schedule will apply:

<table>
<thead>
<tr>
<th>Installment</th>
<th>Amount</th>
<th>Time of Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>₹ 40,000 + GST</td>
<td>At the beginning of the Module I</td>
</tr>
<tr>
<td>Second</td>
<td>₹ 40,000 + GST</td>
<td>At the beginning of the Module II</td>
</tr>
<tr>
<td>Third</td>
<td>₹ 40,000 + GST</td>
<td>At the beginning of the Module III</td>
</tr>
<tr>
<td>Fourth</td>
<td>₹ 40,000 + GST</td>
<td>At the beginning of the Module IV</td>
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Contacts

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