

Get qualified and learn from the key drivers of Industrie 4.0

Specialist Diploma in Advanced Digital Manufacturing

January 2019 - September 2019



Photo: Festo Didactic

- **First Industrie 4.0 Specialist Diploma being offered in Singapore**
- **Up to 90% course fee funding for Singaporeans and Permanent Residents**
- **Post-Specialist Diploma On-Site Project under experts' mentorship**

Offered by:

TUM Asia

Supported by:

FESTO

SKILLS *future* SG



Photo: Festo Didactic

► WHY THIS COURSE

- **Upgrade your skills & learn from German experts who are the key drivers of Industrie 4.0**

Modules are taught by experts from TUM and qualified Festo Didactic trainers

- **Block Teaching system**
Quality instructional time emphasized using a Block Teaching system (5 full days per module)
- **Hands-on experience using Industrie 4.0 training equipment**
Equips participants with relevant Industrie 4.0 knowledge and skills to make an impact in the industry
- **Post Training Project mentorships are available**
Application of the knowledge learnt into the participant's company

► WHO SHOULD ATTEND

- **Electrical and Mechanical Engineers** interested to learn new skills in advanced manufacturing
- **IT, Infocomm, Science and Technology-related Professionals** looking to make a career switch to manufacturing sector

ADMISSION REQUIREMENTS

- **A recognized bachelor degree (or higher), preferably in Engineering, IT or related topics; OR**
- **A relevant polytechnic diploma with a minimum of 2 years' related working experience**

Applicants who do not meet the entry requirements may be considered based on:

- (i) Evidence of at least 5 years of relevant working experience; OR
- (ii) Supporting evidence of competency readiness

Suitable applicants who are shortlisted may have to go through an interview. TUM Asia reserves the right to shortlist and admit applicants.

PARTNERSHIPS WITH THE INDUSTRY

TUM Asia and Festo Didactic SE foster close partnerships between education and manufacturing industries to ensure that its curriculum meets the needs of the workforce. With the announcement of the Smart Nation initiative in Singapore, the national effort aims to create a better future through technology enabled solutions. As a result, **Industrie 4.0 (Industry 4.0), where the internet of things and automation are revolutionizing manufacturing**, has been a major topic of discussion in Singapore. Moving forward, the industry is looking to upskill its workforce to further equip the next generation's workforce. As a result, TUM Asia has been working closely with the Singapore-German Chamber of Industry and Commerce, which has launched multiple Industrie 4.0 activities in Singapore.

In 2016, **Festo Didactic SE and TUM Asia signed a Memorandum of Understanding (MoU)** to explore and develop **joint education programmes**, for students and employees interested in upskilling themselves in the areas of Automation Technology and Industrie 4.0 in Singapore. One of the outcomes from the MoU would be the launch of the Specialist Diploma in Advanced Digital Manufacturing, which is the **first Industrie 4.0 Specialist Diploma being offered in Singapore**.

SPECIALIST DIPLOMA IN ADVANCED DIGITAL MANUFACTURING

Course Description

- Course will adopt MOE's CET Qualifications Framework, where participants will be required to complete two Post-Diploma Certificates (PDCs) to be awarded the Specialist Diploma
- The 2 PDCs are **Advanced Manufacturing** and **Digital Manufacturing**
- Each PDC comprises of 2 theoretical modules and 1 project module
- To meet a wider range of training needs, participants can opt to enroll in individual theoretical modules and receive Modular Certificates after successfully completing them
- Upon completion, participants can carry out a Post-Specialist Diploma project at their companies, under the mentorship of our pool of experts

Post Diploma Certificate 1: Advanced Manufacturing (140 hours)

Course participants will be equipped with the essential knowledge on advanced manufacturing systems, which makes it possible to manage and optimize the manufacturing process through modelling, simulating, and analyzing all the machines and input materials.

Essentials of Advanced Manufacturing Systems January 2019 (5 full days, 40 hours)	This module provides an overview on the essentials of advanced manufacturing systems which involve more effective use of technology, management systems, production techniques and processes.
Manufacturing Management February 2019 (5 full days, 40 hours)	This module aims to equip modern manufacturing engineers and managers with deep insight on effective organization of manufacturing processes within companies.
Advanced Manufacturing Project March 2019 (7 full days, 60 hours)	This will be in partnership with Festo Didactic to provide a project setting for course participants to apply knowledge and skills acquired in the two theoretical modules.

Post Diploma Certificate 2: Digital Manufacturing (140 hours)

Course participants will be trained in the integrations of computation, networking, and physical processes to set up cyber physical systems. Course participants will also be trained in Industrial Internet of Things which incorporates machine to machine communication, harnessing of sensor data, and machine learning techniques to analyze the data.

Cyber Physical Systems July 2019 (5 full days, 40 hours)	This module trains participants to understand and apply software development approaches for development of cyber production systems. Model-based approaches will be presented especially in aspects such as modularity, variants and versions.
Industrial Internet of Things August 2019 (5 full days, 40 hours)	This module covers various aspects of IOT which include sensing, actuation, processing, and communication, that lead to development of skills and experiences employed in designing novel Industrial IOT systems.
Digital Manufacturing Project September 2019 (7 full days, 60 hours)	This will be in partnership with Festo Didactic to provide a project setting for course participants to apply knowledge and skills acquired in the two theoretical modules.

POST SPECIALIST DIPLOMA PROJECT MENTORSHIP

Following the completion of the Specialist Diploma in Advanced Digital Manufacturing, course participants are encouraged to embark on 12-month Post Specialist Diploma Projects at their respective companies under the Mentorship of our pool of experts. Following conditions apply:

- The projects' outcomes should contribute towards productivity improvement at the companies;
- Up to 90% of fees (excluding 7% GST) per Small Medium Enterprises (SMEs) subject to a cap of SGD 20,700 per company;
- Up to 70% of fees (excluding 7% GST) per non-SME subject to a cap of SGD 16,100 per company;
- Each company is eligible to the mentorship support grant of one project per company.

COURSE REGISTRATION

To register for the course or to find out more, please visit www.tum-asia.edu.sg/sdi4

COURSE VENUE

510 Dover Road, #05-01, SIT@SP Building, Singapore 139660

COURSE FEE AND FUNDING

The course fee for the Specialist Diploma is **SGD 18,000** before course fee funding and 7% GST.

The course fee for each theoretical module is **SGD 3,000** before course fee funding and 7% GST.

- All Singaporeans and Permanent Residents aged 21 and above can enjoy course fee funding of **up to 70%** of the course fee.
- Singaporean or Permanent Resident employees fully sponsored by SMEs can enjoy course fee funding support of **up to 90%** of the course fee under the Enhanced Training Support for Small & Medium Enterprises (SMEs) scheme, subject to eligibility criteria.
- Singaporeans aged 40 years and above can enjoy course fee funding of **up to 90%** of the course fee under the SkillsFuture Mid-career Enhanced Subsidy (MCES).
- Singaporeans aged 35 years and above with earnings not more than S\$2000 per month can enjoy course fee funding for **95%** of the course fee under the Workfare Training Support (WTS) scheme.
- Singaporeans aged 25 years old and above are **eligible for SkillsFuture Credit** which can be used to offset course fees.

Photo: Festo Didactic



Photo: TUM Asia



For more information or to find out the latest course schedule, please contact:

TUM Asia, Office of Executive Development

510 Dover Road, #05-01, SIT@SP Building, Singapore 139660

Tel: 6777 7407 | Email: exd@tum-asia.edu.sg