Course Overview

From smart homes and the smart phones we own, to the electric cars we see on the roads, we live in a hyper-connected world driven by cutting edge technologies. Electronic circuits and devices are key enablers of technological advancements in today's digital revolution. This Diploma will empower you to spearhead our digital transformation and gear you up for the future!

In this course, you will acquire a strong foundation in the principles of electronics with computer skills in smart electronics, connected devices, software programming, data analytics, power electronics, control systems, electronics prototyping, IoT, artificial intelligence, semiconductors, robotics, green technology, cyber security and avionics. You will also be equipped with skill sets in emerging technologies and their applications in various fields such as healthcare, assistive technology, and green innovations for the environment.

During your final year, choose from an array of exciting elective clusters to gain further specialisation: Aerospace Electronics (Avionics), Industrial Artificial Intelligence, Intralogistics & Cybersecurity, Robotics, Semiconductor Technology, Structured Work-based Learning, or the University Pathway Programme.

✔ Earn industry certifications such as those from OMRON, CISCO, Machine Learning from Microsoft Azure, or AI4I from AI Singapore.

✔ Choose the new "Sustainability in Engineering" elective cluster to equip yourself for emerging green technologies.

✔ Do a year-long internship under our "Work-based Learning" programme to gain in depth industry experience and ready yourself for full time employment upon graduation!

UNIVERSITY PATHWAY PROGRAMMES

Our University Pathway Programmes allow you to take university modules during your final year of this diploma, and gain conditional admission into selected university courses. This shortens the time needed for you to obtain your degree.

MULTIDISCIPLINARY AND EXPERIENTIAL LEARNING

You will receive multidisciplinary and experiential training in our state-of-the-art research centres of excellence, working alongside skilled research engineers and learning from industry leaders such as Omron, PTC and Festo. This will equip you to ride the wave of digital transformation!

ROBUST STUDENT INTERNSHIP

You will have the opportunity to be attached to a leading organisation locally or overseas for student internship to be exposed to leading industry practices and latest technological trends. Selected students can embark on a year-long student internship (compared to 4 months normally), so as to get more in-depth industry experience and a head-start in their future jobs.

University Pathway Programmes

The TP-NUS/TP-SUTD University Pathway Programme allows you to take university modules during your final year of this diploma, and gain conditional admission into NUS/SUTD. This shortens the time needed for you to get your degree. You also get a taste of university life during your diploma studies at TP!

Multi-disciplinary and experiential learning

You will receive authentic and multi-disciplinary experiential training in our high-tech research centres of excellence, working alongside skilled research engineers and learning from industry leaders such as Omron, PTC and Festo. This will make you future-ready to ride the wave of the digital transformation!

Wide array of career choices in various sectors

You will be groomed for an extremely wide variety of exciting careers in areas such as electronics, semiconductors, aerospace, AI, robotics, IoT, autonomous electrical vehicles, renewable energy, intra-logistics, bio-pharmaceuticals and healthcare. Your internship in Year 3 will give you the work experience needed to get a career head-start!

What You'll Learn

Year 1

Core Subjects

Subject Code	Subject	Credit Units
EEE1001	Circuit Analysis	5
ESE1006	Computer Programming for Problem Solving	4
EEE1003	Digital Fundamentals 1	5
EEE1004	Digital Fundamentals 2	5
EEE1002	Electronic Devices & Circuits	5
EED1001	Electronic Prototyping	3
EMA1003	Engineering Mathematics 1	4
EMA1002	Engineering Mathematics 2	4
ESC1004	Engineering Physics	3

Year 2

Core Subjects

Subject Code	Subject	Credit Units
EEE3005	Advanced Electronics & Communications	4
ESE1009	Artificial Intelligence in Engineering	2
ECT2005	Circuits & Control Systems	4
ESE1008	Data Visualisation & Analytics	3
EEE2006	Digital Systems & Integrated Circuit Applications	4
EMA2003	Engineering Mathematics 3	4
EED2011	Integrated Project	3
EMC3006	Microcontroller Applications	5
EEE3004	Power Electronics & Drives	4
EED1002	Printed Circuit Board Design	3

Year 3

Core Subjects

Subject Code	Subject	Credit Units
EMP3002	Major Project	8

Cluster Elective Subjects

Students to choose one of these elective clusters

Advanced Engineering Skills Elective Cluster

Subject Code	Subject	Credit Units
EED3014	Advanced Skills Practices	8

Avionics Elective Cluster

Subject Code	Subject	Credit Units
EAE3018	Aircraft Digital Systems	4
EAE1006	Avionic Systems	4

Intralogistics & Cybersecurity Elective Cluster

Subject Code	Subject	Credit Units
BLO2010	Distribution Centre Management	4
CCF2C02	IOT Security	4

Robotics Elective Cluster

Subject Code	Subject	Credit Units
EMF3005	Robotics Vision & Automation	4
EMF2002	Smart Manufacturing System	4

Sustainability In Engineering Elective Cluster

Subject Code	Subject	Credit Units
EER3003	Solar Photovoltaic Technology & Leasing	4
EGT3001	Green Urban Transportation & Energy Storage	4

Wafer Fabrication Process & Equipment Technologies

Subject Code	Subject	Credit Units
EMI3011	Cleanroom & Vacuum Technology	5
EMI3010	Wafer Fabrication Technology	5

Industry Practice Elective Cluster

Subject Code	Subject	Credit Units
EED3015	Guided Work-Based Learning	8

University Pathway Programme (NUS/EE)

Subject Code	Subject	Credit Units
EER3004	Electrical Engineering Principles & Practice	4
EMA3003	Introductory Mathematics	4
ESC3003	Fundamentals of Physics	4
ESE3016	Programming Methodology	4

University Pathway Programme (SUTD)

Subject Code	Subject	Credit Units
ECD3001	Social Science: Understanding Behaviour, Culture & Society	4
EMA3002	Modelling & Analysis	4
ESC3002	Physical World	4
ESE3015	Computational Thinking for Design	4

University Pathway Programme (SMU/IS)

Subject Code	Subject	Credit Units
ECC3013	Algorithms & Programming	4
EBZ3012	Business Process Analysis & Solutioning	4

University Pathway Programme (SMU/CS)

Subject Code	Subject	Credit Units
EMA3004	Mathematical Foundations of Computing	4
ECC3012	Collaborative Software Development	4

University Pathway Programme (SMU/SW)

Subject Code	Subject	Credit Units
ECC3013	Algorithms & Programming	4
ECC3014	Operating Systems & Networking	4