

Electronics



“This course has proven itself successful in equipping its students with not only technical knowledge but also innovative ability and problem-solving skills. We strongly believe that the graduates from this course will bring the engineering field to a whole new level.”

Liow Seow Poh
Senior Manager
Electronic Service Centre
SDDA Pte Ltd (A company of ST Kinetics)

Electronics is an important part of human advancement and is used everywhere – in homes, offices, schools, factories, hospitals, transportation and even for leisure. Applications such as smart systems, satellite communication, sophisticated defence systems, medical equipment and personal mobile devices are all made possible through electronics. This course will give you tremendous flexibility and width – a springboard to a wide range of career options.

This course is positioned to be in line with industry goals and trends. As Singapore progresses towards becoming a Smart Nation, this course prepares you for the current and emerging needs encompassing the Internet of Things (IoT), automation, digital transformation, advanced manufacturing, assistive technology and a green environment. It provides you with a solid foundation in the principles and applications of smart electronic devices, circuits, programming, and systems, so as to equip you to meet the changing needs of the industry. Special emphasis is placed on embedded systems, hardware, software, data analytics, power electronics and system control. You will also develop effective communication, problem-solving, collaborative and transcultural skills, as well as skills in project planning and management, to prepare you for the workplace.

To be better prepared for the advancements in technology, final year students can choose to take one of the following Cluster Electives: Avionics, Networking, Robotics & Automation, or Semiconductor Technology.

Career Opportunities

Many of the world's leading electronics and semiconductor manufacturers are based in Singapore, providing technological solutions to industries globally, and generating new products, applications and markets.

You will have excellent and flexible career prospects in the smart electronics systems, semiconductor, telecommunication, instrumentation & control, computing, consumer and industrial electronics industries. Your job areas may include product design, development & testing, process improvement, maintenance, marketing and sales. You can also look forward to career opportunities in the various industries that make use of applied electronics, such as the aerospace, robotics & automation, and land transportation, as well as the biomedical and pharmaceutical industries.

Graduation Requirements

Cumulative Grade Point Average : min 1.0

TP Fundamentals Subjects : 36 credit units

Diploma Core Subjects : 82 credit units

Diploma Cluster Elective Subjects : min 8 credit units

Total Credit Units Completed : min 126 credit units

Application

Apply during the Joint Admissions Exercise following the release of the GCE O Level results. For other categories of local applicants, please refer to the section on "Admission and Requirements". For international students, please refer to the section on "Information for International Students".

Entry Requirements for Singapore-Cambridge GCE O Level Qualification Holders

To be eligible for consideration for admission, applicants must obtain 26 points or better for the net ELR2B2 aggregate score (i.e. English Language, 2 relevant subjects and best 2 other subjects, including CCA Bonus Points) and meet the minimum entry requirements of this course. CCA cannot be used to meet the minimum entry requirements.

For details on GCE O Level Minimum Entry Requirements, refer to page 125.

Note: Applicants should not be suffering from severe colour vision deficiency, uncontrolled epilepsy, profound hearing loss or severe vision impairment.

Course Structure

TP FUNDAMENTALS (TPFun) SUBJECTS				
SUBJECT CODE	SUBJECT	LEVEL	CREDIT UNITS	
ECS1005	Communication & Information Literacy	1	2	
ECS1006	Workplace Communication	1	2	
ECS1007	Persuasive Communication	1	2	
EGS1002	Global Studies	1	3	
EGS1003	Managing Diversity at Work*	1	3	
EGS1004	Global Citizenship & Community Development*	1	3	
EGS1005	Expressions of Culture*	1	3	
EIN1001	Innovation & Entrepreneurship	1	2	
GCC1001	Current Issues & Critical Thinking	1	2	
LEA1011	Leadership: Essential Attributes & Practice 1	1	1	
LEA1012	Leadership: Essential Attributes & Practice 2	1	1	
LEA1013	Leadership: Essential Attributes & Practice 3	1	1	
LSW1002	Sports & Wellness	1	2	
MCR1001	Career Readiness 1	1	1	
MCR1002	Career Readiness 2	1	1	
MCR1003	Career Readiness 3	1	1	
TGL1001	Guided Learning	1	3	
ESI3001	Student Internship Programme	3	12	

* Students must choose one of these three subjects or TGL1001 Guided Learning.

DIPLOMA SUBJECTS - CORE SUBJECTS

SUBJECT CODE	SUBJECT	LEVEL	CREDIT UNITS
EED1001	Electronic Prototyping	1	3
EEE1001	Circuit Analysis	1	6
EEE1002	Electronic Devices & Circuits	1	6
EEE1003	Digital Fundamentals 1	1	5
EEE1004	Digital Fundamentals 2	1	5
EMA1002	Engineering Mathematics 2	1	4
EMA1003	Engineering Mathematics 1	1	4
ESC1004	Engineering Physics	1	3
ESE1006	Computer Programming for Problem Solving	1	4
EED3014	Advanced Skills Practices	3	8
EMP3002	Major Project	3	8

DIPLOMA SUBJECTS – CLUSTER ELECTIVES

You can opt to take Cluster Electives when offered. These optional subjects will stretch your potential and help you to meet your aspirations.

SUBJECT CODE	SUBJECT	LEVEL	CREDIT UNITS
<u>Advanced Engineering Skills</u>			
EED3014	Advanced Skills Practices	3	8
<u>Avionics</u>			
EAE1006	Avionic Systems	1	4
EED1002	Printed Circuit Board Design	1	3
ESE1007	Engineering Analytics	1	3
ECT2005	Circuits & Control Systems	2	4
EEE2005	Integrated Circuit Applications	2	3
EMA2003	Engineering Mathematics 3	2	4
EMC2001	Microcontroller Technology	2	5
EAE3018	Aircraft Digital Systems	3	5
EEE3004	Power Electronics & Drives	3	4
EEE3005	Advanced Electronics & Communication	3	4
EMC3002	Embedded Control & Applications	3	4

SUBJECT CODE	SUBJECT	LEVEL	CREDIT UNITS
<u>Networking</u>			
ECC1002	Networking Fundamentals	1	4
EED1002	Printed Circuit Board Design	1	3
ESE1007	Engineering Analytics	1	3
ECT2005	Circuits & Control Systems	2	4
EEE2005	Integrated Circuit Applications	2	3
EMA2003	Engineering Mathematics 3	2	4
EMC2001	Microcontroller Technology	2	5
EEE3004	Power Electronics & Drives	3	4
EEE3005	Advanced Electronics & Communication	3	4
EMC3002	Embedded Control & Applications	3	4
EMC3005	System & Network Integration	3	4
<u>Robotics & Automation</u>			
EED1002	Printed Circuit Board Design	1	3
ESE1007	Engineering Analytics	1	3
ECT2005	Circuits & Control Systems	2	4
EEE2005	Integrated Circuit Applications	2	3
EMA2003	Engineering Mathematics 3	2	4
EMC2001	Microcontroller Technology	2	5
ECT3002	Analytical Robotics	3	4
EEE3004	Power Electronics & Drives	3	4
EEE3005	Advanced Electronics & Communication	3	4
EMC3002	Embedded Control & Applications	3	4
EMF3004	Automation & Machine Vision	3	4
<u>Semiconductor Technology</u>			
EED1002	Printed Circuit Board Design	1	3
ESE1007	Engineering Analytics	1	3
ECT2005	Circuits & Control Systems	2	4
EEE2005	Integrated Circuit Applications	2	3
EMA2003	Engineering Mathematics 3	2	4
EMC2001	Microcontroller Technology	2	5
EMI2008	IC Process Integration	2	4
EEE3004	Power Electronics & Drives	3	4
EEE3005	Advanced Electronics & Communication	3	4
EMC3002	Embedded Control & Applications	3	4
EMI3005	Cleanroom Equipment & Technology	3	4

DIPLOMA SUBJECTS – SPECIAL ELECTIVES

You can opt to take Special Electives when offered. These optional subjects, taken in addition to the diploma cluster electives, will stretch your potential and help you to meet your aspirations.

SUBJECT CODE	SUBJECT	LEVEL	CREDIT UNITS
EED3009	Special Project 1	3	2
EED3010	Special Project 2	3	2
EED3011	Higher Engineering Skills 1	3	2
EED3012	Higher Engineering Skills 2	3	2
EMA3001	Higher Engineering Mathematics	3	4