

B.S. in Engineering

Asia Program Requirements

General Education Requirements	38
Core Requirements	85
Program Support Courses	4
Total Credits	127

Program Details

The Bachelor of Science in Engineering at the Asia Campus requires successful completion of a minimum of 127 credit hours. Students should consult their advising report to determine which modules, if any, have been granted as exemptions. The courses required to earn this degree are listed below.

Students should be aware that many modules have prerequisites and/or corequisites. Students are responsible for ensuring that all prerequisite and degree requirements are satisfied prior to enrollment in advanced coursework. The suggested plan of study is provided as a guide. A student's actual plan of study may vary based on instructor availability, the number of modules taken during a term, and other academic considerations.

Based on placement examination results, students may be required to complete one or more of the following modules prior to beginning the program: COMM 104, COMM 106, MATH 100, and/or MATH 106. Students should consult with their academic advisor to develop an individualized plan of study.

Note: Asia campus students follow Worldwide prerequisite requirements unless otherwise specified.

General Education Requirements

Communication	9
COMM 122 English Composition	
COMM 219 Speech	
COMM 221 Technical Communication	
Humanities - Lower Level	3
SOSC 210 Introduction to Sociology	
Social Sciences - Lower Level	3
ECON 225 Engineering Economics	
Humanities/Social Sciences - Upper Level	6
HUMN 400 Science and Aviation/Aerospace Technology in Society	
HUMN 330 Values and Ethics	
Computer Science/Information Technology	3
ENGR 115 Introduction to Computing for Engineers	
Mathematics	8
MATH 241 Calculus and Analytical Geometry I	
MATH 242 Calculus and Analytical Geometry II	
Physical/Life Sciences	6
PHYS 150 Physics with Calculus I	
PHYS 160 Physics with Calculus II	
Total Credits	38

Core Requirements

Aeronautical Engineering		
AERO 309	Aerodynamic Performance of Flight Vehicles	3
ENGR 350	Engineering Project Management	3
Engineering		
ENGR 101W	Introduction to Engineering	3
ENGR 120	Graphical Communications	3

ENGR 330	Systems and Signal Processing	3
ENGR 330L	Systems and Signal Processing Laboratory	1
ENGR 400	Fundamentals of Energy Systems	3
ENGR 450	Systems and Controls	3
Engineering Science		
ESCI 201	Statics	3
ESCI 202	Solid Mechanics	3
ESCI 204	Dynamics	3
ESCI 326	Engineering Materials and Structures	3
Computer Engineering		
CESC 220	Digital Circuit Design	3
CESC 220L	Digital Circuit Design Laboratory	1
Electrical Engineering		
ELEC 220	Circuits	3
ELEC 220L	Circuits Laboratory	1
ELEC 230	Electronics	3
ELEC 230L	Electronics Laboratory	1
Physical Science		
PHYS 250	Physics with Calculus III	3
PHYS 250W	Physics with Calculus III Laboratory	2
ESCI 206	Fluid Mechanics	3
ESCI 208	Thermodynamics	3
Mechanical Engineering		
MECH 370	Introduction to Robotics	3
MECH 370L	Introduction to Robotics I Laboratory	1
ESCI 324	Measurements and Instrumentation	2
ESCI 324L	Measurements and Instrumentation Laboratory	1
MECH 470	Mechatronics	3
MECH 470L	Mechatronics Laboratory	1
Mathematics		
MATH 243	Calculus and Analytical Geometry III	4
MATH 345	Differential Equations and Matrix Methods	4
MATH 412	Probability and Statistics	3
Capstone		
ENGR 490	Capstone Design Project I	3
ENGR 491	Capstone Design Project II	3
Total Credits		85

Program Support Courses

UNIV 101	College Success	1
Singapore Specific		
COIN 496	Co-Operative Education *	3
or SCLM 420	Management of Production and Operations	
Total Credits		4

* COIN 496 is a mandatory 3-credit course module intended for all undergraduate students to take as part of the Bachelor of Science in Engineering offered through the Singapore location. Under certain extenuating circumstances, COIN 496 may be substituted on a case-by-case basis for SCLM 420 Management of Production and Operations in discussion with the Academic Advising Team. COIN 496 is an industry attachment serving as a structured supervised internship through which a student is personally coached by expert faculty. COIN 496 intends to add value to the student experience and benefit student employability upon completion of the degree program.

Suggested Plan of Study

Part-Time

Year One

Requirements	Credits
COMM 122 - English Composition	3
MATH 241 - Calculus and Analytical Geometry I	4
UNIV 101 - College Success	1
Semester Hours	8

Requirements	Credits
ENGR 101W - Introduction to Engineering	3
ENGR 115 - Introduction to Computing for Engineers	3
Semester Hours	6

Requirements	Credits
MATH 242 - Calculus and Analytical Geometry II	4
PHYS 150 - Physics with Calculus I	3
Semester Hours	7

Requirements	Credits
MATH 243 - Calculus and Analytical Geometry III	4
SOSC 210 - Introduction to Sociology	3
Semester Hours	7

Total Credits

Total Hours for All Requirements: 28

Year Two

Requirements	Credits
ENGR 120 - Graphical Communications	3
ESCI 201 - Statics	3
Semester Hours	6

Requirements	Credits
PHYS 160 - Physics with Calculus II	3
COMM 221 - Technical Communication	3
Semester Hours	6

Requirements	Credits
ESCI 202 - Solid Mechanics	3
ESCI 206 - Fluid Mechanics	3
Semester Hours	6

Requirements	Credits
MATH 345 - Differential Equations and Matrix Methods	4
PHYS 250 - Physics with Calculus III	3
Semester Hours	7

Total Credits

Total Hours for All Requirements: 25

Year Three

Requirements	Credits
ESCI 204 - Dynamics	3
COMM 219 - Speech	3
PHYS 250W - Physics with Calculus III Laboratory	2
Semester Hours	8

Requirements	Credits
ECON 225 - Engineering Economics	3
CESC 220 - Digital Circuit Design	3
CESC 220L - Digital Circuit Design Laboratory	1
Semester Hours	7

Requirements	Credits
ELEC 220 - Circuits	3
ELEC 220L - Circuits Laboratory	1
ELEC 230 - Electronics	3
ELEC 230L - Electronics Laboratory	1
Semester Hours	8

Requirements	Credits
ESCI 208 - Thermodynamics	3
ENGR 330 - Systems and Signal Processing	3
ENGR 330L - Systems and Signal Processing Laboratory	1
Semester Hours	7

Total Credits

Total Hours for All Requirements: 30

Year Four

Requirements	Credits
AERO 309 - Aerodynamic Performance of Flight Vehicles	3
MECH 370 - Introduction to Robotics	3
MECH 370L - Introduction to Robotics I Laboratory	1
Semester Hours	7

Requirements	Credits
ESCI 324 - Measurements and Instrumentation	2
ESCI 324L - Measurements and Instrumentation Laboratory	1
ESCI 326 - Engineering Materials and Structures	3
Semester Hours	6

Requirements	Credits
MECH 470 - Mechatronics	3
MECH 470L - Mechatronics Laboratory	1
ENGR 350 - Engineering Project Management	3
Semester Hours	7

Requirements	Credits
ENGR 450 - Systems and Controls	3
MATH 412 - Probability and Statistics	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 26

Year Five

Requirements	Credits
ENGR 400 - Fundamentals of Energy Systems	3
ENGR 490 - Capstone Design Project I	3
Semester Hours	6

Requirements	Credits
HUMN 400 - Science and Aviation/ Aerospace Technology in Society	3
COIN 496 - Co-Operative Education or SCLM 420 - Management of Production and Operations	3
Semester Hours	6

Requirements	Credits
ENGR 491 - Capstone Design Project II	3
HUMN 330 - Values and Ethics	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 18

Full-Time

Year One

Requirements	Credits
COMM 122 - English Composition	3
MATH 241 - Calculus and Analytical Geometry I	4
ENGR 101W - Introduction to Engineering	3
UNIV 101 - College Success	1
Semester Hours	11

Requirements	Credits
ENGR 115 - Introduction to Computing for Engineers	3
MATH 242 - Calculus and Analytical Geometry II	4
PHYS 150 - Physics with Calculus I	3
Semester Hours	10

Requirements	Credits
MATH 243 - Calculus and Analytical Geometry III	4
SOSC 210 - Introduction to Sociology	3
ENGR 120 - Graphical Communications	3
Semester Hours	10

Requirements	Credits
ESCI 201 - Statics	3
PHYS 160 - Physics with Calculus II	3
COMM 221 - Technical Communication	3
Semester Hours	9

Total Credits

Total Hours for All Requirements: 40

Year Two

Requirements	Credits
ESCI 202 - Solid Mechanics	3
ESCI 206 - Fluid Mechanics	3
MATH 345 - Differential Equations and Matrix Methods	4
Semester Hours	10

Requirements	Credits
PHYS 250 - Physics with Calculus III	3
ESCI 204 - Dynamics	3
COMM 219 - Speech	3
PHYS 250W - Physics with Calculus III Laboratory	2
Semester Hours	11

Requirements	Credits
ECON 225 - Engineering Economics	3
CESC 220 - Digital Circuit Design	3
CESC 220L - Digital Circuit Design Laboratory	1
ELEC 220 - Circuits	3
ELEC 220L - Circuits Laboratory	1
Semester Hours	11

Requirements	Credits
ELEC 230 - Electronics	3
ELEC 230L - Electronics Laboratory	1
ESCI 208 - Thermodynamics	3
ENGR 330 - Systems and Signal Processing	3
ENGR 330L - Systems and Signal Processing Laboratory	1
Semester Hours	11

Total Credits

Total Hours for All Requirements: 43

Year Three

Requirements	Credits
AERO 309 - Aerodynamic Performance of Flight Vehicles	3
MECH 370 - Introduction to Robotics	3
MECH 370L - Introduction to Robotics I Laboratory	1
ESCI 324 - Measurements and Instrumentation	2
ESCI 324L - Measurements and Instrumentation Laboratory	1
Semester Hours	10

Requirements	Credits
ESCI 326 - Engineering Materials and Structures	3
MECH 470 - Mechatronics	3
MECH 470L - Mechatronics Laboratory	1
ENGR 350 - Engineering Project Management	3
Semester Hours	10

Requirements	Credits
ENGR 450 - Systems and Controls	3
MATH 412 - Probability and Statistics	3
ENGR 400 - Fundamentals of Energy Systems	3
Semester Hours	9

Requirements	Credits
ENGR 490 - Capstone Design Project I	3
HUMN 400 - Science and Aviation/ Aerospace Technology in Society	3
COIN 496 - Co-Operative Education or SCLM 420 - Management of Production and Operations	3
Semester Hours	9

Total Credits

Total Hours for All Requirements: 38

Year Four

Requirements	Credits
ENGR 491 - Capstone Design Project II	3
HUMN 330 - Values and Ethics	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 6