Course List for Mechanical and Automation Engineering (MAEG) Programme
(Applicable for students admitted in 2024-25)
(Unless otherwise specified, all are 3-unit term courses. Note that this is a course list showing the titles of major courses for easy reference only. Please refer to student handbook for detailed Major Programme requirement.)

Faculty Package (9 units)
ENGG1110/ESTR1002 Problem Solving By Programming
ENGG1120/ESTR1005 Linear Algebra for Engineers
ENGG1130/ESTR1006 Multivariable Calculus for Engineers

Foundation Courses (13 units)
ENGG2720/ESTR2014 Complex Variables for Engineers (2 units)
ENGG2740/ESTR2016 Differential Equations for Engineers (2 units)
MAEG1020 Computational Design and Fabrication
MATH1510 Calculus for Engineers
PHYS1110 Engineering Physics: Mechanics and Thermodynamics

Major Required Courses (33 units)
EEEN3030/ESTR3402 Engineering Materials
ELEG2202 Fundamentals of Electric Circuits
MAEG2020/ESTR2400 Engineering Mechanics
MAEG2030/ESTR2402 Thermodynamics
MAEG2601 Technology, Society and Engineering Practice (2 units)
MAEG2602 Engineering Practicum (1 unit)
MAEG3010 Mechanics of Materials
MAEG3020/ESTR3404 Manufacturing Technology
MAEG3030 Fluid Mechanics
MAEG3040 Mechanical Design
MAEG3050/ESTR3406 Introduction to Control Systems
MAEG4030/ESTR4412 Heat Transfer

Research Component Courses (6 units)
MAEG4998/ESTR4998 Final Year Project I
MAEG4999/ESTR4999 Final Year Project II

Major Elective Courses (14 units) (at least 6 units of MAEG courses at 4000 and above level or their reciprocal ESTR courses or ENGG courses at 5000 level)

Breadth Electives (at least 6 units chosen from the following courses):
BMEG3420 Medical Robotics
CSCI1020 Hands-on Introduction to C++ (1 unit)
CSCI2040 Introduction to Python (2 units)
CSCI2100/ESTR2102 Data Structures
CSCI3170 Introduction to Database Systems
~DOTE1030 Economics for Business Studies I
EEEN2020 Renewable Energy Technologies
ENGG1820 Engineering Internship (1 unit)
ENGG2020/ESTR2104 Digital Logic and Systems
ENGG2760/ESTR2018 Probability for Engineers (2 units)
ENGG2780/ESTR2020 Statistics for Engineers (2 units)
ENGG5404 Micromachining and Microelectromechanical Systems
MAEG1010 Introduction to Robot Design
MAEG2050 Robot Development in Practice: From Design to Prototyping
MAEG3060/ESTR3408 Introduction to Robotics
MAEG3070 Fundamentals of Computer-Aided Design

MAEG3080 Fundamentals of Machine Intelligence
MAEG3920 Engineering Design and Applications
MAEG5080 Smart Materials and Structures
MAEG5120 Nanomaterials and Nanotechnology: Fundamentals and Applications
MAEG5130 Computational Mechanics
MAEG5140 Materials Characterization Techniques
MAEG5160 Design for Additive Manufacturing
MGNT1010 Introduction to Business
MGNT4090 Technology and Innovation Management
~SEEM2440/ESTR2500 Engineering Economics
SEEM3450/ESTR3502 Engineering Innovation and Entrepreneurship
SEEM3490 Information Systems Management
SEEM3500 Quality Control and Management

Depth Electives (at least 6 units chosen from the following courses):
EEEN4010/ESTR4400 Kinetic Energy Harvesting Devices and Systems
EEEN4020/ESTR4402 Solar Energy and Photovoltaic Technology
EEEN4030/ESTR4404 Nuclear Energy and Risk Assessment
EEEN4050/ESTR4422 Energy Storage Devices and Systems
EEEN4060/ESTR4424 Energy Distribution
ENGG5402 Advanced Robotics
ENGG5403 Linear System Theory and Design
ENGG5405 Theory of Engineering Design
MAEG4010/ESTR4408 Computer-Integrated Manufacturing
MAEG4020/ESTR4410 Finite Element Modelling and Analysis
MAEG4040/ESTR4414 Mechatronic Systems
MAEG4050/ESTR4416 Modern Control Systems Analysis and Design
MAEG4060 Virtual Reality Systems and Applications
MAEG4070/ESTR4418 Engineering Optimization
MAEG4080/ESTR4420 Introduction to Combustion
MAEG5030 Geometric Computing for Design and Manufacturing
MAEG5060 Computational Intelligence
MAEG5070 Nonlinear Control Systems
MAEG5090 Topics in Robotics
MAEG5110 Quantum Control and Quantum Information
MAEG5150 Advanced Heat Transfer and Fluid Mechanics

~ Students can take either SEEM2440 or DOTE1030 but not both

University Core Courses: Language and General Education Foundation Courses

Chinese Language (5 units)
CHLT1001 University Chinese I (3 units)
CHLT1002 University Chinese II (2 units)

English Language (8 units)
ELTU1001 Foundation English for University Studies (3 units)
ELTU2014 English for Engineering Students I (3 units)
ELTU3014 English for Engineering Students II (2 units)

General Education Foundation Courses (6 units)
UGFH1000 In Dialogue with Humanity (3 units)

UGFN1000 In Dialogue with Nature (3 units)

Understanding China (1 unit)
UGCP1001 Understanding China (1 unit)

Hong Kong in the Wider Constitutional Order (1 unit)
UGCP1002 Hong Kong in the Wider Constitutional Order (1 unit)

Information Technology (3 units)
ENGG1004 Digital Literacy and Computational Thinking (Version R) (3 units)

Course List for Mechanical and Automation Engineering (MAEG) Programme

(Applicable for students admitted in 2023-24)

(Unless otherwise specified, all are 3-unit term courses. Note that this is a course list showing the titles of major courses for easy reference only. Please refer to student handbook for detailed Major Programme requirement.)

Faculty Package (9 units)

ENGG1110/ESTR1002 Problem Solving By Programming
ENGG1120/ESTR1005 Linear Algebra for Engineers
ENGG1130/ESTR1006 Multivariable Calculus for Engineers

Foundation Courses (13 units)

ENGG2720/ESTR2014 Complex Variables for Engineers (2 units)
ENGG2740/ESTR2016 Differential Equations for Engineers (2 units)
MAEG1020 Computational Design and Fabrication
MATH1510 Calculus for Engineers
PHYS1110 Engineering Physics: Mechanics and Thermodynamics

Major Required Courses (33 units)

EEEN3030/ESTR3402 Engineering Materials
ELEG2202 Fundamentals of Electric Circuits
MAEG2020/ESTR2400 Engineering Mechanics
MAEG2030/ESTR2402 Thermodynamics
MAEG2601 Technology, Society and Engineering Practice (2 units)
MAEG2602 Engineering Practicum (1 unit)
MAEG3010 Mechanics of Materials
MAEG3020/ESTR3404 Manufacturing Technology
MAEG3030 Fluid Mechanics
MAEG3040 Mechanical Design
MAEG3050/ESTR3406 Introduction to Control Systems
MAEG4030/ESTR4412 Heat Transfer

Research Component Courses (6 units)

MAEG4998/ESTR4998 Final Year Project I
MAEG4999/ESTR4999 Final Year Project II

Major Elective Courses (14 units) (at least 6 units of MAEG courses at 4000 and above level or their reciprocal ESTR courses or ENGG courses at 5000 level)

Breadth Electives (at least 6 units chosen from the following courses):
BMEG3420 Medical Robotics
CSCI1020 Hands-on Introduction to C++ (1 unit)
CSCI2040 Introduction to Python (2 units)
CSCI2100/ESTR2102 Data Structures
CSCI3170 Introduction to Database Systems
~DOTE[DSME]1030 Economics for Business Studies I
EEEN2020 Renewable Energy Technologies
ELEG2401 Introduction to Embedded Systems
ENGG1820 Engineering Internship (1 unit)
ENGG2020/ESTR2104 Digital Logic and Systems
ENGG2760/ESTR2018 Probability for Engineers (2 units)
ENGG2780/ESTR2020 Statistics for Engineers (2 units)
ENGG5404 Micromachining and Microelectromechanical Systems
MAEG1010 Introduction to Robot Design
MAEG2050 Robot Development in Practice: From Design to Prototyping

MAEG3060/ESTR3408 Introduction to Robotics
MAEG3070 Fundamentals of Computer-Aided Design
MAEG3080 Fundamentals of Machine Intelligence
MAEG3920 Engineering Design and Applications
MAEG5080 Smart Materials and Structures
MAEG5120 Nanomaterials and Nanotechnology: Fundamentals and Applications
MAEG5130 Computational Mechanics
MAEG5140 Materials Characterization Techniques
MAEG5160 Design for Additive Manufacturing
MGNT1010 Introduction to Business
MGNT4090 Technology and Innovation Management
~SEEM2440/ESTR2500 Engineering Economics
SEEM3450/ESTR3502 Engineering Innovation and Entrepreneurship
SEEM3490 Information Systems Management
SEEM3500 Quality Control and Management

Depth Electives (at least 6 units chosen from the following courses):
EEEN4010/ESTR4400 Kinetic Energy Harvesting Devices and Systems
EEEN4020/ESTR4402 Solar Energy and Photovoltaic Technology
EEEN4030/ESTR4404 Nuclear Energy and Risk Assessment
EEEN4050/ESTR4422 Energy Storage Devices and Systems
EEEN4060/ESTR4424 Energy Distribution
ENGG5402 Advanced Robotics
ENGG5403 Linear System Theory and Design
ENGG5405 Theory of Engineering Design
MAEG4010/ESTR4408 Computer-Integrated Manufacturing
MAEG4020/ESTR4410 Finite Element Modelling and Analysis
MAEG4040/ESTR4414 Mechatronic Systems
MAEG4050/ESTR4416 Modern Control Systems Analysis and Design
MAEG4060 Virtual Reality Systems and Applications
MAEG4070/ESTR4418 Engineering Optimization
MAEG4080/ESTR4420 Introduction to Combustion
MAEG5030 Geometric Computing for Design and Manufacturing
MAEG5060 Computational Intelligence
MAEG5070 Nonlinear Control Systems
MAEG5090 Topics in Robotics
MAEG5110 Quantum Control and Quantum Information
MAEG5150 Advanced Heat Transfer and Fluid Mechanics

~ Students can take either SEEM2440 or DOTE[DSME]1030 but not both
[] Subject area code "DSME" changed to "DOTE" with effect from 2024-25.

University Core Courses: Language and General Education Foundation Courses

Chinese Language (5 units)
CHLT1001 University Chinese I (3 units)
CHLT1002 University Chinese II (2 units)

English Language (8 units)
ELTU1001 Foundation English for University Studies (3 units)
ELTU2014 English for Engineering Students I (3 units)
ELTU3014 English for Engineering Students II (2 units)

General Education Foundation Courses (6 units)
UGFH1000 In Dialogue with Humanity (3 units)
UGFN1000 In Dialogue with Nature (3 units)

Understanding China (1 unit)
UGCP1001 Understanding China (1 unit)

Hong Kong in the Wider Constitutional Order (1 unit)
UGCP1002 Hong Kong in the Wider Constitutional Order (1 unit)

Information Technology (3 units)
ENGG1004 Digital Literacy and Computational Thinking (Version R) (3 units)

Course List for Mechanical and Automation Engineering (MAEG) Programme
(Applicable for students admitted in 2022-23)
(Unless otherwise specified, all are 3-unit term courses. Note that this is a course list showing the titles of major courses for easy reference only. Please refer to student handbook for detailed Major Programme requirement.)

Faculty Package (9 units)
ENGG1110/ESTR1002 Problem Solving By Programming
ENGG1120/ESTR1005 Linear Algebra for Engineers
ENGG1130/ESTR1006 Multivariable Calculus for Engineers

Foundation Courses (13 units)
ENGG2720/ESTR2014 Complex Variables for Engineers (2 units)
ENGG2740/ESTR2016 Differential Equations for Engineers (2 units)
MAEG1020 Computational Design and Fabrication
MATH1510 Calculus for Engineers
PHYS1110 Engineering Physics: Mechanics and Thermodynamics

Major Required Courses (33 units)
EEEN3030/ESTR3402 Engineering Materials
ELEG2202 Fundamentals of Electric Circuits
MAEG2020/ESTR2400 Engineering Mechanics
MAEG2030/ESTR2402 Thermodynamics
MAEG2601 Technology, Society and Engineering Practice (2 units)
MAEG2602 Engineering Practicum (1 unit)
MAEG3010 Mechanics of Materials
MAEG3020/ESTR3404 Manufacturing Technology
MAEG3030 Fluid Mechanics
MAEG3040 Mechanical Design
MAEG3050/ESTR3406 Introduction to Control Systems
MAEG4030/ESTR4412 Heat Transfer

Research Component Courses (6 units)
MAEG4998/ESTR4998 Final Year Project I
MAEG4999/ESTR4999 Final Year Project II

Major Elective Courses (14 units) (at least 6 units of MAEG courses at 4000 and above level or their reciprocal ESTR courses or ENGG courses at 5000 level)

Breadth Electives (at least 6 units chosen from the following courses):
BMEG3420 Medical Robotics
CSCI1020 Hands-on Introduction to C++ (1 unit)
CSCI2040 Introduction to Python (2 units)
CSCI2100/ESTR2102 Data Structures
CSCI3170 Introduction to Database Systems
~DOTE[DSME]1030 Economics for Business Studies I
EEEN2020 Renewable Energy Technologies
ELEG2401 Introduction to Embedded Systems
ENGG1820 Engineering Internship (1 unit)
ENGG2020/ESTR2104 Digital Logic and Systems
ENGG2760/ESTR2018 Probability for Engineers (2 units)
ENGG2780/ESTR2020 Statistics for Engineers (2 units)
ENGG5404 Micromachining and Microelectromechanical Systems
MAEG1010 Introduction to Robot Design
MAEG2050 Robot Development in Practice: From Design to Prototyping
MAEG3060/ESTR3408 Introduction to Robotics

MAEG3070 Fundamentals of Computer-Aided Design
MAEG3080 Fundamentals of Machine Intelligence
MAEG3920 Engineering Design and Applications
MAEG5080 Smart Materials and Structures
MAEG5120 Nanomaterials and Nanotechnology: Fundamentals and Applications
MAEG5130 Computational Mechanics
MAEG5140 Materials Characterization Techniques
MAEG5160 Design for Additive Manufacturing
MGNT1010 Introduction to Business
MGNT4090 Technology and Innovation Management
~SEEM2440/ESTR2500 Engineering Economics
SEEM3450/ESTR3502 Engineering Innovation and Entrepreneurship
SEEM3490 Information Systems Management
SEEM3500 Quality Control and Management

Depth Electives (at least 6 units chosen from the following courses):
EEEN4010/ESTR4400 Kinetic Energy Harvesting Devices and Systems
EEEN4020/ESTR4402 Solar Energy and Photovoltaic Technology
EEEN4030/ESTR4404 Nuclear Energy and Risk Assessment
EEEN4050/ESTR4422 Energy Storage Devices and Systems
EEEN4060/ESTR4424 Energy Distribution
ENGG5402 Advanced Robotics
ENGG5403 Linear System Theory and Design
ENGG5405 Theory of Engineering Design
MAEG4010/ESTR4408 Computer-Integrated Manufacturing
MAEG4020/ESTR4410 Finite Element Modelling and Analysis
MAEG4040/ESTR4414 Mechatronic Systems
MAEG4050/ESTR4416 Modern Control Systems Analysis and Design
MAEG4060 Virtual Reality Systems and Applications
MAEG4070/ESTR4418 Engineering Optimization
MAEG4080/ESTR4420 Introduction to Combustion
MAEG5030 Geometric Computing for Design and Manufacturing
MAEG5060 Computational Intelligence
MAEG5070 Nonlinear Control Systems
MAEG5090 Topics in Robotics
MAEG5110 Quantum Control and Quantum Information
MAEG5150 Advanced Heat Transfer and Fluid Mechanics

~ Students can take either SEEM2440 or DSME1030 but not both
[] Subject area code “DSME” changed to “DOTE” with effect from 2024-25.

University Core Courses: Language and General Education Foundation Courses

Chinese Language (5 units)
CHLT1001 University Chinese I (3 units)
CHLT1002 University Chinese II (2 units)

English Language (8 units)
ELTU1001 Foundation English for University Studies (3 units)
ELTU2014 English for Engineering Students I (3 units)
ELTU3014 English for Engineering Students II (2 units)

General Education Foundation Courses (6 units)

UGFH1000 In Dialogue with Humanity (3 units)
UGFN1000 In Dialogue with Nature (3 units)

Understanding China (1 unit)
UGCP1001 Understanding China (1 unit)

Hong Kong in the Wider Constitutional Order (1 unit)
UGCP1002 Hong Kong in the Wider Constitutional Order (1 unit)

Information Technology (3 units)
ENGG1004 Digital Literacy and Computational Thinking (Version R) (3 units)

Course List for Mechanical and Automation Engineering (MAEG) Programme
(Applicable for students admitted in 2021-22)
(Unless otherwise specified, all are 3-unit term courses. Note that this is a course list showing the titles of major courses for easy reference only. Please refer to student handbook for detailed Major Programme requirement.)

Faculty Package (9 units)
ENGG1110/ESTR1002 Problem Solving By Programming
ENGG1120/ESTR1005 Linear Algebra for Engineers
ENGG1130/ESTR1006 Multivariable Calculus for Engineers

Foundation Courses (13 units)
ENGG2720/ESTR2014 Complex Variables for Engineers (2 units)
ENGG2740/ESTR2016 Differential Equations for Engineers (2 units)
MAEG1020 Computational Design and Fabrication
MATH1510 Calculus for Engineers
PHYS1110 Engineering Physics: Mechanics and Thermodynamics

Major Required Courses (33 units)
EEEN3030/ESTR3402 Engineering Materials
ELEG2202 Fundamentals of Electric Circuits
MAEG2020/ESTR2400 Engineering Mechanics
MAEG2030/ESTR2402 Thermodynamics
MAEG2601 Technology, Society and Engineering Practice (2 units)
MAEG2602 Engineering Practicum (1 unit)
MAEG3010 Mechanics of Materials
MAEG3020/ESTR3404 Manufacturing Technology
MAEG3030 Fluid Mechanics
MAEG3040 Mechanical Design
MAEG3050/ESTR3406 Introduction to Control Systems
MAEG4030/ESTR4412 Heat Transfer

Research Component Courses (6 units)
MAEG4998/ESTR4998 Final Year Project I
MAEG4999/ESTR4999 Final Year Project II

Major Elective Courses (14 units) (at least 6 units of MAEG courses at 4000 and above level or their reciprocal ESTR courses or ENGG courses at 5000 level)

Breadth Electives (at least 6 units chosen from the following courses):
BMEG3420 Medical Robotics
CSCI1020 Hands-on Introduction to C++ (1 unit)
CSCI2040 Introduction to Python (2 units)
CSCI2100/ESTR2102 Data Structures
CSCI2120 Introduction to Software Engineering (2 units)
CSCI3170 Introduction to Database Systems
~DOTE[DSME]1030 Economics for Business Studies I
EEEN2020 Renewable Energy Technologies
ELEG2401 Introduction to Embedded Systems
ELEG3101 Medical Instrumentation and Sensors
ENGG1820 Engineering Internship (1 unit)
ENGG2020/ESTR2104 Digital Logic and Systems
ENGG2760/ESTR2018 Probability for Engineers (2 units)
ENGG2780/ESTR2020 Statistics for Engineers (2 units)
ENGG5404 Micromachining and Microelectromechanical Systems
MAEG1010 Introduction to Robot Design

MAEG2050 Robot Development in Practice: From Design to Prototyping
MAEG3060/ESTR3408 Introduction to Robotics
MAEG3070 Fundamentals of Computer-Aided Design
MAEG3080 Fundamentals of Machine Intelligence
MAEG3920 Engineering Design and Applications
MAEG5080 Smart Materials and Structures
MAEG5120 Nanomaterials and Nanotechnology: Fundamentals and Applications
MAEG5130 Computational Mechanics
MAEG5140 Materials Characterization Techniques
MAEG5160 Design for Additive Manufacturing
MGNT1010 Introduction to Business
MGNT4090 Technology and Innovation Management
~SEEM2440/ESTR2500 Engineering Economics
SEEM3450/ESTR3502 Engineering Innovation and Entrepreneurship
SEEM3490 Information Systems Management
SEEM3500 Quality Control and Management

Depth Electives (at least 6 units chosen from the following courses):
EEEN4010/ESTR4400 Kinetic Energy Harvesting Devices and Systems
EEEN4020/ESTR4402 Solar Energy and Photovoltaic Technology
EEEN4030/ESTR4404 Nuclear Energy and Risk Assessment
EEEN4050/ESTR4422 Energy Storage Devices and Systems
EEEN4060/ESTR4424 Energy Distribution
ENGG5402 Advanced Robotics
ENGG5403 Linear System Theory and Design
ENGG5405 Theory of Engineering Design
MAEG4010/ESTR4408 Computer-Integrated Manufacturing
MAEG4020/ESTR4410 Finite Element Modelling and Analysis
MAEG4040/ESTR4414 Mechatronic Systems
MAEG4050/ESTR4416 Modern Control Systems Analysis and Design
MAEG4060 Virtual Reality Systems and Applications
MAEG4070/ESTR4418 Engineering Optimization
MAEG4080/ESTR4420 Introduction to Combustion
MAEG5030 Geometric Computing for Design and Manufacturing
MAEG5060 Computational Intelligence
MAEG5070 Nonlinear Control Systems
MAEG5090 Topics in Robotics
MAEG5110 Quantum Control and Quantum Information
MAEG5150 Advanced Heat Transfer and Fluid Mechanics

~ Students can take either SEEM2440 or DSME1030 but not both
[] Subject area code “DSME” changed to “DOTE” with effect from 2024-25.

University Core Courses: Language and General Education Foundation Courses

Chinese Language (6 units)
CHLT1100 University Chinese I
CHLT1200 University Chinese II

English Language (9 units)
ELTU1001 Foundation English for University Studies
ELTU1002 English Communication for University Studies
ELTU2014 English for Engineering Students I

ELTU3014 English for Engineering Students II

General Education Foundation Courses (6 units)
UGFH1000 In Dialogue with Humanity
UGFN1000 In Dialogue with Nature

Course List for Mechanical and Automation Engineering (MAEG) Programme
(Applicable for students admitted in 2020-21)
(Unless otherwise specified, all are 3-unit term courses. Note that this is a course list showing the titles of major courses for easy reference only. Please refer to student handbook for detailed Major Programme requirement.)

Faculty Package (9 units)
ENGG1110/ESTR1002 Problem Solving By Programming
ENGG1120/ESTR1005 Linear Algebra for Engineers
ENGG1130/ESTR1006 Multivariable Calculus for Engineers

Foundation Courses (13 units)
ENGG2720/ESTR2014 Complex Variables for Engineers (2 units)
ENGG2740/ESTR2016 Differential Equations for Engineers (2 units)
MAEG1020 Computational Design and Fabrication
MATH1510 Calculus for Engineers
PHYS1110 Engineering Physics: Mechanics and Thermodynamics

Major Required Courses (33 units)
EEEN3030/ESTR3402 Engineering Materials
ELEG2202 Fundamentals of Electric Circuits
MAEG2020/ESTR2400 Engineering Mechanics
MAEG2030/ESTR2402 Thermodynamics
MAEG2601 Technology, Society and Engineering Practice (2 units)
MAEG2602 Engineering Practicum (1 unit)
MAEG3010 Mechanics of Materials
MAEG3020/ESTR3404 Manufacturing Technology
MAEG3030 Fluid Mechanics
MAEG3040 Mechanical Design
MAEG3050/ESTR3406 Introduction to Control Systems
MAEG4030/ESTR4412 Heat Transfer

Research Component Courses (6 units)
MAEG4998/ESTR4998 Final Year Project I
MAEG4999/ESTR4999 Final Year Project II

Major Elective Courses (14 units) (at least 6 units of MAEG courses at 4000 and above level or their reciprocal ESTR courses or ENGG courses at 5000 level)

Breadth Electives (at least 6 units chosen from the following courses):
BMEG3420 Medical Robotics
CSCI1020 Hands-on Introduction to C++ (1 unit)
CSCI2040 Introduction to Python (2 units)
CSCI2100/ESTR2102 Data Structures
CSCI2120 Introduction to Software Engineering (2 units)
CSCI3170 Introduction to Database Systems
~DOTE[DSME]1030 Economics for Business Studies I
EEEN2020 Renewable Energy Technologies
ELEG2401 Introduction to Embedded Systems
ELEG3101 Medical Instrumentation and Sensors
ENGG1820 Engineering Internship (1 unit)
ENGG2020/ESTR2104 Digital Logic and Systems
ENGG2760/ESTR2018 Probability for Engineers (2 units)
ENGG2780/ESTR2020 Statistics for Engineers (2 units)
ENGG5404 Micromachining and Microelectromechanical Systems
MAEG1010 Introduction to Robot Design

MAEG2050 Robot Development in Practice: From Design to Prototyping
MAEG3060/ESTR3408 Introduction to Robotics
MAEG3070 Fundamentals of Computer-Aided Design
MAEG3080 Fundamentals of Machine Intelligence
MAEG3920 Engineering Design and Applications
MAEG5080 Smart Materials and Structures
MAEG5120 Nanomaterials and Nanotechnology: Fundamentals and Applications
MAEG5130 Computational Mechanics
MAEG5140 Materials Characterization Techniques
MAEG5160 Design for Additive Manufacturing
MGNT1010 Introduction to Business
MGNT4090 Technology and Innovation Management
~SEEM2440/ESTR2500 Engineering Economics
SEEM3450/ESTR3502 Engineering Innovation and Entrepreneurship
SEEM3490 Information Systems Management
SEEM3500 Quality Control and Management

Depth Electives (at least 6 units chosen from the following courses):
EEEN4010/ESTR4400 Kinetic Energy Harvesting Devices and Systems
EEEN4020/ESTR4402 Solar Energy and Photovoltaic Technology
EEEN4030/ESTR4404 Nuclear Energy and Risk Assessment
EEEN4050/ESTR4422 Energy Storage Devices and Systems
EEEN4060/ESTR4424 Energy Distribution
ENGG5402 Advanced Robotics
ENGG5403 Linear System Theory and Design
ENGG5405 Theory of Engineering Design
MAEG4010/ESTR4408 Computer-Integrated Manufacturing
MAEG4020/ESTR4410 Finite Element Modelling and Analysis
MAEG4040/ESTR4414 Mechatronic Systems
MAEG4050/ESTR4416 Modern Control Systems Analysis and Design
MAEG4060 Virtual Reality Systems and Applications
MAEG4070/ESTR4418 Engineering Optimization
MAEG4080/ESTR4420 Introduction to Combustion
MAEG5030 Geometric Computing for Design and Manufacturing
MAEG5060 Computational Intelligence
MAEG5070 Nonlinear Control Systems
MAEG5090 Topics in Robotics
MAEG5110 Quantum Control and Quantum Information
MAEG5150 Advanced Heat Transfer and Fluid Mechanics

~ Students can take either SEEM2440 or DSME1030 but not both
[] Subject area code “DSME” changed to “DOTE” with effect from 2024-25.

University Core Courses: Language and General Education Foundation Courses

Chinese Language (6 units) CHLT1100
University Chinese I CHLT1200
University Chinese II

English Language (9 units)
ELTU1001 Foundation English for University Studies
ELTU1002 English Communication for University Studies
ELTU2014 English for Engineering Students I
ELTU3014 English for Engineering Students II

General Education Foundation Courses (6 units)
UGFH1000 In Dialogue with Humanity
UGFN1000 In Dialogue with Nature

Course List for Mechanical and Automation Engineering (MAEG) Programme
(Applicable for students admitted in 2019-20)
(Unless otherwise specified, all are 3-unit term courses. Note that this is a course list showing the titles of major courses for easy reference only. Please refer to student handbook for detailed Major Programme requirement.)

Faculty Package (9 units)
ENGG1110/ESTR1002 Problem Solving By Programming
ENGG1120/ESTR1005 Linear Algebra for Engineers
ENGG1130/ESTR1006 Multivariable Calculus for Engineers

Foundation Courses (13 units)
ENGG2720/ESTR2014 Complex Variables for Engineers (2 units)
ENGG2740/ESTR2016 Differential Equations for Engineers (2 units)
MAEG1020 Computational Design and Fabrication
MATH1510 Calculus for Engineers
PHYS1110 Engineering Physics: Mechanics and Thermodynamics

Major Required Courses (33 units)
EEEN3030/ESTR3402 Engineering Materials
ELEG2202 Fundamentals of Electric Circuits
MAEG2020/ESTR2400 Engineering Mechanics
MAEG2030/ESTR2402 Thermodynamics
MAEG2601 Technology, Society and Engineering Practice (2 units)
MAEG2602 Engineering Practicum (1 unit)
MAEG3010 Mechanics of Materials
MAEG3020/ESTR3404 Manufacturing Technology
MAEG3030 Fluid Mechanics
MAEG3040 Mechanical Design
MAEG3050/ESTR3406 Introduction to Control Systems
MAEG4030/ESTR4412 Heat Transfer

Research Component Courses (6 units)
MAEG4998/ESTR4998 Final Year Project I
MAEG4999/ESTR4999 Final Year Project II

Major Elective Courses (14 units) (at least 6 units of MAEG courses at 4000 and above level or their reciprocal ESTR courses or ENGG courses at 5000 level)

Breadth Electives (at least 6 units chosen from the following courses):
BMEG3420 Medical Robotics
CSCI1020 Hands-on Introduction to C++ (1 unit)
CSCI2040 Introduction to Python (2 units)
CSCI2100/ESTR2102 Data Structures
CSCI2120 Introduction to Software Engineering (2 units)
CSCI3170 Introduction to Database Systems
~DOTE[DSME]1030 Economics for Business Studies I
EEEN2020 Renewable Energy Technologies
ELEG2401 Introduction to Embedded Systems
ELEG3101 Medical Instrumentation and Sensors
ENGG1820 Engineering Internship (1 unit)
ENGG2020/ESTR2104 Digital Logic and Systems
ENGG2760/ESTR2018 Probability for Engineers (2 units)
ENGG2780/ESTR2020 Statistics for Engineers (2 units)
MAEG1010 Introduction to Robot Design
MAEG2050 Robot Development in Practice: From Design to Prototyping

MAEG3060/ESTR3408 Introduction to Robotics
MAEG3070 Fundamentals of Computer-Aided Design
MAEG3080 Fundamentals of Machine Intelligence
MAEG3920 Engineering Design and Applications
MAEG5050 MEMS and Nano-Robotics
[or ENGG5404 Micromachining and Microelectromechanical Systems]
MAEG5080 Smart Materials and Structures
MAEG5120 Nanomaterials and Nanotechnology: Fundamentals and Applications
MAEG5130 Computational Mechanics
MAEG5140 Materials Characterization Techniques
MAEG5160 Design for Additive Manufacturing
MGNT1010 Introduction to Business
MGNT4090 Technology and Innovation Management
~SEEM2440/ESTR2500 Engineering Economics
SEEM3450/ESTR3502 Engineering Innovation and Entrepreneurship
SEEM3490 Information Systems Management
SEEM3500 Quality Control and Management

Depth Electives (at least 6 units chosen from the following courses):
EEEN4010/ESTR4400 Kinetic Energy Harvesting Devices and Systems
EEEN4020/ESTR4402 Solar Energy and Photovoltaic Technology
EEEN4030/ESTR4404 Nuclear Energy and Risk Assessment
EEEN4050/ESTR4422 Energy Storage Devices and Systems
EEEN4060/ESTR4424 Energy Distribution
MAEG4010/ESTR4408 Computer-Integrated Manufacturing
MAEG4020/ESTR4410 Finite Element Modelling and Analysis
MAEG4040/ESTR4414 Mechatronic Systems
MAEG4050/ESTR4416 Modern Control Systems Analysis and Design
MAEG4060 Virtual Reality Systems and Applications
MAEG4070/ESTR4418 Engineering Optimization
MAEG4080/ESTR4420 Introduction to Combustion
MAEG5010 Advanced Robotics
[or ENGG5402 Advanced Robotics]
MAEG5020 Topics in Linear Control Systems
[or ENGG5403 Linear System Theory and Design]
MAEG5030 Geometric Computing for Design and Manufacturing
MAEG5060 Computational Intelligence
MAEG5070 Nonlinear Control Systems
MAEG5090 Topics in Robotics
MAEG5100 Advanced Engineering Design and Optimization
[or ENGG5405 Theory of Engineering Design]
MAEG5110 Quantum Control and Quantum Information
MAEG5150 Advanced Heat Transfer and Fluid Mechanics

~ Students can take either SEEM2440 or DSME1030 but not both
[] Subject area code “DSME” changed to “DOTE” with effect from 2024-25.

University Core Courses: Language and General Education Foundation Courses

Chinese Language (6 units) CHLT1100
University Chinese I CHLT1200
University Chinese II

English Language (9 units)

ELTU1001 Foundation English for University Studies
ELTU1002 English Communication for University Studies
ELTU2014 English for Engineering Students I
ELTU3014 English for Engineering Students II

General Education Foundation Courses (6 units)
UGFH1000 In Dialogue with Humanity
UGFN1000 In Dialogue with Nature

Course List for Mechanical and Automation Engineering (MAEG) Programme
(Applicable for students admitted in 2018-19)
(Unless otherwise specified, all are 3-unit term courses. Note that this is a course list showing the titles of major courses for easy reference only. Please refer to student handbook for detailed Major Programme requirement.)

Faculty Package (9 units)
ENGG1100/ESTR1000 Introduction to Engineering Design
ENGG1110/ESTR1002 Problem Solving By Programming
ENGG1410/ESTR1004 Linear Algebra and Vector Calculus for Engineers

Foundation Science Courses (9 units)
CHEM1380 Basic Chemistry for Engineers
ENGG1310/ESTR1003 Engineering Physics: Electromagnetics, Optics and Modern Physics
LSCI1001 Basic Concepts in Biological Sciences
LSCI1003 Life Sciences for Engineers
PHYS1003 General Physics for Engineers
PHYS1110 Engineering Physics: Mechanics and Thermodynamics

Foundation Mathematics Courses (9 units)
ENGG2420/ESTR2000 Complex Analysis and Differential Equations for Engineers
ENGG2430/ESTR2002 Probability and Statistics for Engineers
MATH1510 Calculus for Engineers

Major Required Courses (24 units)
ELEG2202 Fundamentals of Electric Circuits
MAEG2020/ESTR2400 Engineering Mechanics
MAEG2030/ESTR2402 Thermodynamics
MAEG2601 Technology, Society and Engineering Practice (2 units)
MAEG2602 Engineering Practicum (1 unit)
MAEG3010 Mechanics of Materials
MAEG3020/ESTR3404 Manufacturing Technology
MAEG3030 Fluid Mechanics
MAEG3050/ESTR3406 Introduction to Control Systems

Research Component Courses (6 units)
MAEG4998/ESTR4998 Final Year Project I
MAEG4999/ESTR4999 Final Year Project II

Major Elective Courses (18 units) (at least 9 units of MAEG courses at 4000 and above level or ENGG courses at 5000 level)

Breadth Electives (9 units chosen from the following courses):
CSCI1020 Hands-on Introduction to C++ (1 unit)
CSCI1040 Hands-on Introduction to Python (1 unit)
CSCI1050 Hands-on Introduction to MATLAB (1 unit)
CSCI2100/ESTR2102 Data Structures
CSCI2120 Introduction to Software Engineering (2 units)
CSCI2800 Numerical Computation
CSCI3170 Introduction to Database Systems
~DSME1030 Economics for Business Studies I
EEEN2020 Renewable Energy Technologies
EEEN3030/ESTR3402 Engineering Materials
ELEG2401 Introduction to Embedded Systems
ELEG3101 Medical Instrumentation and Sensors
ENGG1820 Engineering Internship (1 unit)

ENGG2020/ESTR2104 Digital Logic and Systems
MAEG1010 Introduction to Robot Design
MAEG2010 Computer-Aided Drafting (2 units)
[or MAEG1020 Computational Design and Fabrication]
MAEG2050 Robot Development in Practice: From Design to Prototyping
MAEG3040 Mechanical Design
MAEG3060/ESTR3408 Introduction to Robotics
MAEG3070 Fundamentals of Computer-Aided Design
MAEG3080 Fundamentals of Machine Intelligence
MAEG3920 Engineering Design and Applications
MAEG5050 MEMS and Nano-Robotics
[or ENGG5404 Micromachining and Microelectromechanical Systems]
MAEG5080 Smart Materials and Structures
MAEG5120 Nanomaterials and Nanotechnology: Fundamentals and Applications
MAEG5130 Computational Mechanics
MAEG5140 Materials Characterization Techniques
MAEG5160 Design for Additive Manufacturing
MGNT1010 Introduction to Business
MGNT4090 Technology and Innovation Management
~SEEM2440/ESTR2500 Engineering Economics
SEEM3450/ESTR3502 Engineering Innovation and Entrepreneurship
SEEM3490 Information Systems Management
SEEM3500 Quality Control and Management

Depth Electives (9 units chosen from the following courses):
EEEN4010/ESTR4400 Kinetic Energy Harvesting Devices and Systems
EEEN4020/ESTR4402 Solar Energy and Photovoltaic Technology
EEEN4030/ESTR4404 Nuclear Energy and Risk Assessment
EEEN4050/ESTR4422 Energy Storage Devices and Systems
EEEN4060/ESTR4424 Energy Distribution
MAEG4010/ESTR4408 Computer-Integrated Manufacturing
MAEG4020/ESTR4410 Finite Element Modelling and Analysis
MAEG4030/ESTR4412 Heat Transfer
MAEG4040/ESTR4414 Mechatronic Systems
MAEG4050/ESTR4416 Modern Control Systems Analysis and Design
MAEG4060 Virtual Reality Systems and Applications
MAEG4070/ESTR4418 Engineering Optimization
MAEG4080/ESTR4420 Introduction to Combustion
MAEG5010 Advanced Robotics
[or ENGG5402 Advanced Robotics]
MAEG5020 Topics in Linear Control Systems
[or ENGG5403 Linear System Theory and Design]
MAEG5030 Geometric Computing for Design and Manufacturing
MAEG5060 Computational Intelligence
MAEG5070 Nonlinear Control Systems
MAEG5090 Topics in Robotics
MAEG5100 Advanced Engineering Design and Optimization
[or ENGG5405 Theory of Engineering Design]
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