



B.Eng. (Hons) in Mechanical and Automation Engineering (For Senior Year Admission)



Admission

Local students with excellent results in their Associate Degree or Higher Diploma study can apply for admission to the senior year of the programme. Please visit the website of the Office of Admissions and Financial Aid at <https://admission.cuhk.edu.hk> for admission details.

Major Programme Requirements

Year 1

Faculty Package

ENGG1110 Problem Solving By Programming

Foundation Course

MAEG1020 Computational Design and Fabrication

Major Required Courses

ELEG2202 Fundamentals of Electric Circuits/

MAEG2030 Thermodynamics

MAEG2020 Engineering Mechanics

MAEG2601 Technology, Society and Engineering Practice (2 units)

MAEG3010 Mechanics of Materials

MAEG3030 Fluid Mechanics

MAEG3050 Introduction to Control Systems

MAEG2602 Engineering Practicum (1 unit)
(5 weeks)

Year 2

Major Required Courses

MAEG3020 Manufacturing Technology

MAEG3040 Mechanical Design

MAEG4030 Heat Transfer

MAEG4998 Final Year Project I

MAEG4999 Final Year Project II

Major Electives**

For Associate Degree Holders: 15 units

For Higher Diploma Holders: 12 units

Unless otherwise specified, all are 3-unit courses.

** For Major Electives, at least 6 units of MAEG courses at 4000 and above level or their reciprocal ESTR courses or ENGG courses at 5000 level are required.

(B) - Breadth Electives (at least 6 units are required)

(C) - Compulsory Courses in specific streams

(D) - Depth Electives (at least 6 units are required)

(E) - Electives in specific streams

~ Students can take either DOTE1030 or SEEM2440 but not both.

To qualify for a stream, students must complete a minimum of 12 units taken under the stream.

Major Electives

Design and Manufacturing Stream

(B) / (C) CSCI1020 Hands-on Introduction to C++ (1 unit)

(B) / (E) ENGG5404 Micromachining and Microelectromechanical Systems

(D) / (E) ENGG5405 Theory of Engineering Design

(B) / (E) MAEG2050 Robot Development in Practice: From Design to Prototyping

(B) / (E) MAEG3060 Introduction to Robotics

(B) / (E) MAEG3070 Fundamentals of Computer-Aided Design

(B) / (E) MAEG3080 Fundamentals of Machine Intelligence

(B) / (E) MAEG3920 Engineering Design and Applications

(D) / (E) MAEG4010 Computer-Integrated Manufacturing

(D) / (E) MAEG4020 Finite Element Modelling and Analysis

(D) / (E) MAEG4060 Virtual Reality Systems and Applications

(D) / (E) MAEG4070 Engineering Optimization

(D) / (E) MAEG5030 Geometric Computing for Design and Manufacturing

(B) / (E) MAEG5120 Nanomaterials and Nanotechnology: Fundamentals and Applications

(B) / (E) MAEG5130 Computational Mechanics

(B) / (E) MAEG5160 Design for Additive Manufacturing

(B) / (E) SEEM3500 Quality Control and Management

Mechatronics Stream

(B) / (C) CSCI1020 Hands-on Introduction to C++ (1 unit)

(C) / (D) MAEG4040 Mechatronic Systems

(C) / (D) MAEG4050 Modern Control Systems Analysis and Design

(B) / (E) ELEG3701 Embedded Systems Design

(B) / (E) ENGG2020 Digital Logic and Systems

(B) / (E) ENGG5404 Micromachining and Microelectromechanical Systems

(B) / (E) MAEG2050 Robot Development in Practice: From Design to Prototyping

(B) / (E) MAEG3080 Fundamentals of Machine Intelligence

(B) / (E) MAEG5080 Smart Materials and Structures

Robotics and Automation Stream

(B) / (C) CSCI1020 Hands-on Introduction to C++ (1 unit)

(B) / (C) MAEG3060 Introduction to Robotics

(C) / (D) MAEG4050 Modern Control Systems Analysis and Design

(B) / (E) BMEG3420 Medical Robotics

(D) / (E) ENGG5402 Advanced Robotics

(D) / (E) ENGG5403 Linear System Theory and Design

(B) / (E) ENGG5404 Micromachining and Microelectromechanical Systems

(B) / (E) MAEG1010 Introduction to Robot Design

(B) / (E) MAEG2050 Robot Development in Practice: From Design to Prototyping

(D) / (E) MAEG4010 Computer-Integrated Manufacturing

(D) / (E) MAEG5090 Topics in Robotics

(B) / (E) MAEG5120 Nanomaterials and Nanotechnology: Fundamentals and Applications

Others

(B) CSCI2040 Introduction to Python (2 units)

(B) CSCI2100 Data Structures

(B) CSCI3170 Introduction to Database Systems

(B) ~DOTE1030 Economics for Business Studies I

(B) EEEN2020 Renewable Energy Technologies

(D) EEEN4010 Kinetic Energy Harvesting Devices and Systems

(D) EEEN4020 Solar Energy and Photovoltaic Technology

(D) EEEN4030 Nuclear Energy and Risk Assessment

(D) EEEN4050 Energy Storage Devices and Systems

(D) EEEN4060 Energy Distribution

(B) ENGG1820 Engineering Internship (1 unit)

(B) ENGG2760 Probability for Engineers (2 units)

(B) ENGG2780 Statistics for Engineers (2 units)

(D) MAEG4080 Introduction to Combustion

(D) MAEG5060 Computational Intelligence

(D) MAEG5070 Nonlinear Control Systems

(D) MAEG5110 Quantum Control and Quantum Information

(B) MAEG5140 Materials Characterization Techniques

(D) MAEG5150 Advanced Heat Transfer and Fluid Mechanics

(B) MGNT1010 Introduction to Business

(B) MGNT4090 Technology and Innovation Management

(B) ~SEEM2440 Engineering Economics

(B) SEEM3450 Engineering Innovation and Entrepreneurship

(B) SEEM3490 Information Systems Management

The course list above is subject to curriculum changes. For fulfillment of graduation after admission, please refer to Undergraduate Student Handbook available at Academic and Quality Section Registry website: <http://www.aqs.cuhk.edu.hk>. Updated information will also be uploaded to MAE Department website: <http://www.mae.cuhk.edu.hk>.