

PROGRAMME STRUCTURE

Bachelor of Mechanical Engineering

| Courses | Content | Credit Hours |
|-------------------------------|--|--------------|
| University Courses | GIG1012: Philosophy and Current Issues* / GLT1017: Basic Malay Language** | 2 |
| | GIG1013: Appreciation of Ethics and Civilization | 2 |
| | GIG1003: Basic Entrepreneurship Enculturation | 2 |
| | GLTXXXX: English Communication Programme † | 4 |
| | University Elective Courses (Student Holistic Empowerment) | 8 |
| | Co-Curriculum | 2 |
| Sub-total Credit Hours | | 20 |
| Faculty Courses | Faculty Core Courses | 12 |
| Sub-total Credit Hours | | 12 |
| Department Courses | Department Core Courses | 93 |
| | Department Elective Courses | 18 |
| Sub-total Credit Hours | | 111 |
| Total Credit Hours | | 143 |

* Compulsory for local students.

** Compulsory for international students.

† Students are required to complete the courses based on their English Proficiency qualification (MUET/IELTS/TOEFL), as stipulated in the respective PATH on page 35.

ACADEMIC PLANNER

INTAKE SESSION 2022/2023

| YEAR 1 | | | | | | |
|--------------------------------|---|-----------|-----------|----|--------------|---------------|
| CODE | COURSE | S1 | S2 | SS | TOTAL CREDIT | PRE-REQUISITE |
| UNIVERSITY COURSES | | | | | | |
| GIG1012 / GLT1017 | Philosophy And Current Issues* / Basic Malay Language** | 2 | | | | |
| GLTXXXX | English Communication I | 2 | | | | |
| GLTXXXX | English Communication II | | 2 | | | |
| Sub-total Credit Hours | | 4 | 2 | | 6 | |
| FACULTY COURSES | | | | | | |
| KIX1001 | Engineering Mathematics 1 | 3 | | | | |
| KIX1002 | Engineering Mathematics 2 | | 3 | | | |
| Sub-total Credit Hours | | 3 | 3 | | 6 | |
| DEPARTMENT CORE COURSES | | | | | | |
| KIG1009 | Statics | 3 | | | | |
| KIG1010 | Fluid Mechanics 1 | 3 | | | | |
| KIG1011 | Engineering Materials 1 | 3 | | | | |
| KIG1012 | Engineering Design And Modelling | 3 | | | | |
| KIG1013 | Engineering Thermodynamics 1 | | 3 | | | |
| KIG1014 | Mechanics Of Materials 1 | | 3 | | | |
| KIG1015 | Dynamics | | 3 | | | |
| KIG1016 | Machining And Manufacturing Processes | | 4 | | | |
| Sub-total Credit Hours | | 12 | 13 | | 25 | |
| TOTAL CREDIT HOURS | | 19 | 18 | | 37 | |

* Compulsory for local students.

** Compulsory for international students.

| YEAR 2 | | | | | | |
|--------------------------------|--|-----------|-----------|----|--------------|---------------|
| CODE | COURSE | S1 | S2 | SS | TOTAL CREDIT | PRE-REQUISITE |
| UNIVERSITY COURSES | | | | | | |
| GIG1003 | Basic Entrepreneurship Enculturation | 2 | | | | |
| GIG1013 | Appreciation Of Ethics And Civilisations | | 2 | | | |
| Sub-total Credit Hours | | 2 | 2 | | 4 | |
| FACULTY COURSES | | | | | | |
| KIX2006 | Engineering Economics and Project Management | | 3 | | | |
| Sub-total Credit Hours | | | 3 | | 3 | |
| DEPARTMENT CORE COURSES | | | | | | |
| KIG2012 | Mechatronics 1 | 3 | | | | |
| KIG2013 | Computer Programming | 3 | | | | |
| KIG2014 | Fluid Mechanics 2 | 3 | | | | |
| KIG2015 | Mechanics Of Materials 2 | 3 | | | | |
| KIG2016 | Product Design And Innovation | 3 | | | | |
| KIG2017 | Design Of Machine Elements | | 3 | | | |
| KIG2018 | Engineering Thermodynamics 2 | | 3 | | | |
| KIG2019 | Numerical And Statistical Methods In Engineering | | 3 | | | |
| KIG2020 | Mechatronics 2 | | 3 | | | |
| Sub-total Credit Hours | | 15 | 12 | | 27 | |
| TOTAL CREDIT HOURS | | 17 | 17 | | 34 | |

| YEAR 3 | | | | | | |
|---|---|-----------|-----------|----------|--------------|---------------|
| CODE | COURSE | S1 | S2 | SS | TOTAL CREDIT | PRE-REQUISITE |
| UNIVERSITY ELECTIVE COURSES (STUDENT HOLISTIC EMPOWERMENT) | | | | | | |
| Cluster 1 | Thinking Matters: Mind And Intellect | 4 | | | | |
| Cluster 2 | Emotional, Physical And Spiritual Intelligence: Heart, Body & Soul | | | | | |
| Cluster 3 | Technology/Artificial Intelligence And Data Analytics: I-Techie | | | | | |
| Cluster 4 | Global Issues and Community Sustainability: Making the World a Better Place | | | | | |
| Sub-total Credit Hours | | 4 | | | 4 | |
| UNIVERSITY COURSES | | | | | | |
| | Co-Curriculum | | 2 | | | |
| Sub-Total Credit Hours | | | 2 | | 2 | |
| FACULTY COURSES | | | | | | |
| KIX2005 | Law, Ethics and Sustainability for Engineers | | 3 | | | |
| Sub-total Credit Hours | | | 3 | | 3 | |
| DEPARTMENT CORE COURSES | | | | | | |
| KIG3007 | Integrated Design 1 | 3 | | | | |
| KIG3008 | Instrumentation And Measurement Techniques | 3 | | | | |
| KIG3009 | Mechanical Vibrations | 3 | | | | |
| KIG3010 | Engineering Materials 2 | 3 | | | | |
| KIG3011 | Integrated Design 2 | | 3 | | | |
| KIG3012 | Control Engineering | | 3 | | | |
| KIG3013 | Heat Transfer | | 3 | | | |
| KIG3014 | Finite Element Analysis | | 3 | | | |
| KIG3015 | Industrial Training | | | 5 | | |
| Sub-total Credit Hours | | 12 | 12 | 5 | 29 | |
| TOTAL CREDIT HOURS | | 16 | 17 | 5 | 38 | |

| YEAR 4 | | | | | | |
|---|---|-----------|-----------|----|--------------|---------------|
| CODE | COURSE | S1 | S2 | SS | TOTAL CREDIT | PRE-REQUISITE |
| UNIVERSITY ELECTIVE COURSES (STUDENT HOLISTIC EMPOWERMENT) | | | | | | |
| Cluster 1 | Thinking Matters: Mind And Intellect | 2 | 2 | | | |
| Cluster 2 | Emotional, Physical And Spiritual Intelligence: Heart, Body & Soul | | | | | |
| Cluster 3 | Technology/Artificial Intelligence And Data Analytics: I-Techie | | | | | |
| Cluster 4 | Global Issues And Community Sustainability: Making The World A Better Place | | | | | |
| Sub-total Credit Hours | | 2 | 2 | | 4 | |
| DEPARTMENT CORE COURSES | | | | | | |
| KIG4052 | Materials Selection In Mechanical Design | 3 | | | | |
| KIG4053 | Production And Operations Management | 3 | | | | |
| KIG4054 | Final Year Project 1 | 3 | | | | |
| KIG4055 | Final Year Project 2 | | 3 | | | |
| Sub-total Credit Hours | | 9 | 3 | | 12 | |
| DEPARTMENT ELECTIVE COURSES | | | | | | |
| | Elective Course I | 3 | | | | |
| | Elective Course II | 3 | | | | |
| | Elective Course III | | 3 | | | |
| | Elective Course IV | | 3 | | | |
| | Elective Course V | | 3 | | | |
| | Elective Course VI | | 3 | | | |
| Sub-total Credit Hours | | 6 | 12 | | 18 | |
| TOTAL CREDIT HOURS | | 17 | 17 | | 34 | |

DEPARTMENT ELECTIVE COURSES

| CODE | COURSE | CREDIT HOURS | PRE-REQUISITE |
|---------|--|--------------|---------------------|
| KIG4056 | Tribology | 3 | |
| KIG4057 | Machinery Vibration And Condition Monitoring | 3 | |
| KIG4058 | Engineering Acoustics And Noise Control | 3 | |
| KIG4059 | Internal Combustion Engine | 3 | |
| KIG4060 | Heat Exchanger Equipments | 3 | |
| KIG4061 | Pump Characteristics And Application | 3 | |
| KIG4062 | Computational Fluid Dynamics | 3 | |
| KIG4063 | Heating, Ventilation, Air Conditioning And Refrigeration | 3 | KIG2018, KIG3013 |
| KIG4064 | Human Factors Design | 3 | |
| KIG4065 | Sustainable Design | 3 | |
| KIG4066 | Rapid Manufacturing Technology | 3 | |
| KIG4067 | Manufacturing Strategy | 3 | |
| KIG4068 | Machine Learning | 3 | |
| KIG4069 | Ceramic Engineering | 3 | |
| KIG4070 | Constitutive Modeling Of Materials | 3 | |
| KIG4071 | Electronic Packaging | 3 | |
| KIG4072 | Failure Analysis And Prevention | 3 | |
| KIG4073 | Metals And Alloys Engineering | 3 | |
| KIG4074 | Nanomaterials | 3 | |
| KIG4075 | Polymer And Rubber Engineering | 3 | |
| KIG4076 | Semiconductor Manufacturing Process And Technology | 3 | |