

NUS DEPARTMENT OF MECHANICAL ENGINEERING

Summary of ME Modular Requirements and Credits (For student matriculating from AY16/17)

| MODULAR REQUIREMENTS | MCS | TERM ⁴ | NOTES |
|---|------------|-------------------|--|
| UNIVERSITY LEVEL REQUIREMENTS | 20 | | |
| General Education (GE) (5 Modules, each of 4MCs) – Human Cultures (HC), Quantitative Reasoning (QR), Thinking and Expression (T&E), Singapore Studies (SS), Asking Questions (AQ) | 20 | | |
| UNRESTRICTED ELECTIVE MODULES (UEM) | 20 | | |
| UEM 1: | | | |
| UEM 2: | | | |
| UEM 3: | | | |
| UEM 4: | | | |
| UEM 5: | | | |
| PROGRAMME REQUIREMENTS | | | |
| Faculty Requirements | 11 | | |
| ES1531 Critical Thinking and Writing | 4 | | |
| ES2331 Communicating Engineering | 4 | | |
| EG2401 Engineering Professionalism | 3 | | |
| ES1xxx English ¹ | (0) | | |
| Foundational Modules | 28 | | |
| MA1505 Mathematics I | 4 | | |
| MA1506 Mathematics II | 4 | | |
| PC1431 Physics IE | 4 | | |
| CS1010E Programming Methodology | 4 | | |
| EG1111 Engineering Principles & Practice I | 6 | | |
| EG1112 Engineering Principles & Practice II | 6 | | |
| Mechanical Engineering Major Requirements | | | |
| ME Essential Modules: | 58 | | |
| ME2102 Engineering Innovation and Modelling | 4 | Even | |
| ME2112 Strength of Materials | 4 | Odd | |
| ME2121 Engineering Thermodynamics | 4 | Even | |
| ME2134 Fluids Mechanics I | 4 | Odd | |
| ME2142 Feedback Control Systems | 4 | Even | |
| ME2151 Principles of Mechanical Engineering Materials | 4 | Odd | |
| ME3112 Mechanics of Machines | 4 | Even | |
| ME3162 Manufacturing Processes | 4 | Odd | |
| ME3103 Mechanical Systems Design (under TE) | 6 | Odd/Even | Students in DCP will take EG3301R in replacement of ME3103 |
| ME4101A B.Eng Dissertation (Over 2 semesters) | 8 | Odd/Even | Students in DCP will take EG4301 in replacement of ME4101A |
| EG3601 Industrial Attachment (Free Electives x 3 for Poly Students) | 12 | | |
| MA1301 Introductory Mathematics (For direct poly intake only)² | | | |
| | | | |
| ME Technical Electives | 15 | | |
| | | | |
| Pathway Requirements | 8 | | |
| TOTAL | 160 | | |

¹For students who have not passed or been exempted from the Qualifying English Test at the time of admission to the Faculty, they will have to read ES1000 and/or ES1103. This will be decided by CELC. ES1000 carries zero (0) MCs but students will have to pass in order to graduate while ES1103 carries 4 MCs to be used to fulfil the UEMs. Students are recommended to take the English module in the 1st semester, as ES1103 is a pre-requisite of ES1531 & ES2331.

²Accredited Polytechnic Direct Entry Students will have to take MA1301 Introductory Mathematics to be counted towards Free Elective.

³Please check the current schedule regularly via <http://me.nus.edu.sg/current-students/sample-schedules/> for possible changes if any.

⁴Students in Design Centric Programme (DCP) will be required to take 1 Technical Elective (4MCs) only.

Sample Semester Schedule for ME students (matriculating from AY16/17 onwards) – Industrial Attachment in Sem 5

| Semester 1 | | MCs | Semester 2 | | |
|--|---|-----|--|--------------------------------------|------------|
| MA1505 | Mathematics I | 4 | MA1506 | Mathematics II | 4 |
| PC1431 | Physics IE | 4 | CS1010E | Programming Methodology | 4 |
| GER1000 | Quantitative Reasoning (GE 1 - QR) ¹ | 4 | ES1531 | Critical Thinking and Writing | 4 |
| EG1111 | Engineering Principles & Practice I | 6 | EG1112 | Engineering Principles & Practice II | 6 |
| | | | GE 2 ¹ | | 4 |
| Sub-total | | 18 | Sub-total | | 22 |
| Semester 3 | | | Semester 4 | | |
| ME2112 | Strength of Materials | 4 | ME2102 | Engineering Innovation and Modelling | 4 |
| ME2151 | Principles of Mechanical Engineering Materials | 4 | ME2121 | Engineering Thermodynamics | 4 |
| ME2134 | Fluid Mechanics I | 4 | ME3112 | Mechanics of Machines | 4 |
| ME3162 | Manufacturing Processes | 4 | ES2331 | Communicating Engineering | 4 |
| GE 3 ¹ | | 4 | GE 4 ¹ | | 4 |
| Sub-total | | 20 | Sub-total | | 20 |
| Semester 5 | | | Semester 6 | | |
| EG3601 | Industrial Attachment | 12 | ME2142 | Feedback Control Systems | 4 |
| EG2401 | Engineering Professionalism | 3 | ME3103 | Mechanical Systems Design I | 6 |
| ME Technical Elective 1 | | 4 | GE 5 ¹ | | 4 |
| | | | Unrestricted Elective Module 1. ² | | 4 |
| | | | ME Technical Elective 2 | | 4 |
| Sub-total | | 19 | Sub-total | | 22 |
| Semester 7 | | | Semester 8 | | |
| ME4101A | B.Eng. Dissertation | 4 | ME4101A | B.Eng. Dissertation | 4 |
| ME Technical Elective 3 | | 4 | ME Technical Elective 4 | | 4 |
| Professional Development | | 4 | Professional Development | | 4 |
| Unrestricted Elective Module 2. ² | | 4 | Unrestricted Elective Module 4. ² | | 4 |
| Unrestricted Elective Module 3. ² | | 4 | Unrestricted Elective Module 5. ² | | 4 |
| Sub-total | | 20 | Sub-total | | 20 |
| Total | | | | | 161 |

¹Students are strongly encouraged to complete all the five GE modules latest by the end of Year 2.

²UEM can be read in any semester and can be any modules out of your major requirements.

Please note that this semester schedule is only a sample, you can customized your own schedule taking into considerations the semester the modules are offered and the pre- and co-requisites of a module.

Sample Semester Schedule for ME students (matriculating from AY16/17 onwards) – Industrial Attachment in Sem 6

| Semester 1 | | MCS | Semester 2 | | |
|--|---|-----|--|--------------------------------------|------------|
| MA1505 | Mathematics I | 4 | MA1506 | Mathematics II | 4 |
| PC1431 | Physics IE | 4 | CS1010E | Programming Methodology | 4 |
| GER1000 | Quantitative Reasoning (GE 1 - QR) ¹ | 4 | ES1531 | Critical Thinking and Writing | 4 |
| EG1111 | Engineering Principles & Practice I | 6 | EG1112 | Engineering Principles & Practice II | 6 |
| | | | GE 2 ¹ | | 4 |
| Sub-total | | 18 | Sub-total | | 22 |
| Semester 3 | | | Semester 4 | | |
| ME2112 | Strength of Materials | 4 | ME2102 | Engineering Innovation and Modelling | 4 |
| ME2151 | Principles of Mechanical Engineering Materials | 4 | ME2121 | Engineering Thermodynamics | 4 |
| ME2134 | Fluid Mechanics I | 4 | ME3112 | Mechanics of Machines | 4 |
| ME3162 | Manufacturing Processes | 4 | ES2331 | Communicating Engineering | 4 |
| GE 3 ¹ | | 4 | GE 4 ¹ | | 4 |
| Sub-total | | 20 | Sub-total | | 20 |
| Semester 5 | | | Semester 6 | | |
| ME3103 | Mechanical Systems Design I | 6 | EG3601 | Industrial Attachment | 12 |
| ME Technical Elective 1 | | 4 | EG2401 | Engineering Professionalism | 3 |
| ME Technical Elective 2 | | 4 | ME2142 | Feedback Control Systems | 4 |
| GE 5 ¹ | | 4 | | | |
| Unrestricted Elective Module 1. ² | | 4 | | | |
| Sub-total | | 22 | Sub-total | | 19 |
| Semester 7 | | | Semester 8 | | |
| ME4101A | B.Eng. Dissertation | 4 | ME4101A | B.Eng. Dissertation | 4 |
| ME Technical Elective 3 | | 4 | ME Technical Elective 4 | | 4 |
| Professional Development | | 4 | Professional Development | | 4 |
| Unrestricted Elective Module 2. ² | | 4 | Unrestricted Elective Module 4. ² | | 4 |
| Unrestricted Elective Module 3. ² | | 4 | Unrestricted Elective Module 5. ² | | 4 |
| Sub-total | | 20 | Sub-total | | 20 |
| Total | | | | | 161 |

¹Students are strongly encouraged to complete all the five GE modules latest by the end of Year 2.

²UEM can be read in any semester and can be any modules out of your major requirements.

Please note that this semester schedule is only a sample, you can customized your own schedule taking into considerations the semester the modules are offered and the pre- and co-requisites of a module.

Sample Semester Schedule for Accredited Poly Direct Entry ME students (matriculating in AY16/17)

| Year 2 | | | |
|---|------------|---|------------|
| Semester 3 | MCs | Semester 4 | MCs |
| MA1301 Introductory Mathematics ¹ | 4 | MA1505 Mathematics I | 4 |
| PC1431 Physics IE | 4 | ME2102 Engineering Innovation and Modelling | 4 |
| ME2151 Principles of Mechanical Engineering Materials | 4 | ME3112 Mechanics of Machines | 4 |
| GER1000 Quantitative Reasoning (GE 1 - QR) ² | 4 | ES1531 Critical Thinking and Writing | 4 |
| Free Elective 2 ² | 4 | GE 2 ² | 4 |
| ES1xxx English ³ | - | | |
| Sub-Total | 20 | Sub-Total | 20 |
| Year 3 | | | |
| Semester 5 | MCs | Semester 6 | MCs |
| MA1506 Mathematics II | 4 | EG2401 Engineering Professionalism | 3 |
| ME2112 Strength of Materials | 4 | ME2121 Engineering Thermodynamics | 4 |
| ME2134 Fluid Mechanics I | 4 | ME2142 Feedback Control Systems | 4 |
| ME3162 Manufacturing Processes | 4 | ME3103 Mechanical Systems Design | 6 |
| GE 3 ² | 4 | ME Technical Elective 1 | 4 |
| Sub-Total | 20 | Sub-Total | 21 |
| Year 4 | | | |
| Semester 7 | MCs | Semester 8 | MCs |
| ME4101A B.Eng. Dissertation | 4 | ME4101A B.Eng. Dissertation (cont'd) | 4 |
| ME Technical Elective 2 | 4 | ME Technical Elective 4 | 4 |
| ME Technical Elective 3 | 4 | Professional Development | 4 |
| Professional Development | 4 | GE 5 ² | 4 |
| GE 4 ² | 4 | Free Elective 3 ² | 4 |
| Sub-Total | 20 | Sub-Total | 20 |
| Total | | | 121 |

¹MA1301 will be counted towards Free Elective.

²These modules (GE, Free Electives) can be read in any semester.

³Either ES1000 and/or ES1103 depending on the results of your QET and decided by CELC.

Please note that this semester schedule is only a sample, you can customized your own schedule taking into considerations the semester the modules are offered and the pre- and co-requisites of a module.