**Bachelor of Engineering (Civil Engineering) (Hons)**

**(from Cohort AY2025/26 onwards)**

|  |  |
| --- | --- |
| **NEW CURRICULUM REQUIREMENTS** | **UNIT** |
| **COMMON CURRICULUM REQUIREMENTS** | **40** |
| Singapore Studies (GE) - CDE2501 Liveable Cities | 4 |
| Cultures and Connections (GE) | 4 |
| Communities and Engagement (GE) | 4 |
| Critique and Expression (GE) - ES2631 Critical Thinking and Writing | 4 |
| Digital Literacy (GE) - CS1010% Programming Methodology *[CS1010E]* | 4 |
| Data Literacy (GE) *– GEA1000 Quantitative Reasoning with Data* | 4 |
| Design Thinking - DTK1234 Design Thinking | 4 |
| Maker Space – EG1311BE Design and Make | 4 |
| Artificial Intelligence - EE2211 Introduction to Machine Learning | 4 |
| Project Management - PF1101A Project Management and Finance | 4 |
| **MAJOR REQUIREMENTS** | **80** |
| **Engineering Core** | **20** |
| MA1511 Engineering Calculus | 2 |
| MA1513 Linear Algebra with Differential Equations | 2 |
| CE2407A Uncertainty Analysis for Engineers | 2 |
| CE2407B Introduction to Numerical Methods for Engineers | 2 |
| EG2401A Engineering Professionalism | 2 |
| EG3611A Industrial Attachment # (or equivalent) | 10 |
| **Major Programme** | **60** |
| CE1109 Structural Engineering Principles | 4 |
| CE2112 Soil Mechanics | 4 |
| CE2155 Principles of Structural Mechanics and Materials | 4 |
| CE2134 Fluid Mechanics | 4 |
| CE3115 Stability of Slopes and Earth Retention Systems | 4 |
| CE3116 Foundation Systems for Urban Infrastructure | 4 |
| CE3121 Urban Transportation Engineering | 4 |
| CE3132 Hydrology and Free Surface Flows | 4 |
| CE3155A Structural Behaviour | 2 |
| CE3155B Structural Modelling | 2 |
| CE3165 Concrete Design for Urban Infrastructure | 4 |
| CE3166 Steel Design for Urban Infrastructure | 4 |
| CE4103 Design Project | 4 |
| Integrated Project 2 *- CE4104 B. Eng. Dissertation* | 8 |
| Sustainable/Environmental Elective:   * CE4002 Carbon Management in the Built Environment (4 units) * ESE4408 Environmental Impact Assessment (4 units) | 4 |
| **UNRESTRICTED ELECTIVES**   * **Build Your Own Degree** | **40** |
| **TOTAL** | **160** |

# Engineering students may take up to 20 UNITs of credit-bearing internships, of which up to 10 UNITs can be used to fulfil the major internship requirement and the remaining will be counted towards Unrestricted Electives. This limit does not apply to students enrolled in the co-op degree programme.

**Catalogue of Courses**

|  |  |
| --- | --- |
| **Common Curriculum Pillar** | **Basket of Courses**2 |
| Singapore Studies | CDE2501 Liveable Cities |
| Cultures and Connections (**GE**C) | Students may read any course from the curated list of courses as approved by the NUS General Education Committee for this pillar (4 Units) |
| Communities and Engagement (**GE**N) | Students may read any course from the curated list of courses as approved by the NUS General Education Committee for this pillar (4 Units) |
| Critique and Expression (GE) | ES2631 Critical Thinking and Writing |
| Digital Literacy (GE) | CS1010% Programming Methodology - CS1010E Programming Methodology is the default course |
| Data Literacy (GE) | Students may read any course from the basket of courses approved by the NUS General Education Committee for this pillar (4 Units) - GEA1000 Quantitative Reasoning with Data is the default course |
| Design Thinking | DTK1234 Design Thinking |
| Maker Space | EG1311BE Design and Make |
| Artificial Intelligence | EE2211 Introduction to Machine Learning |
| Project Management | PF1101A Project Management and Finance |
|  | **Basket of Courses2** |
| Integrated Project 2 | Complete 8 UNIT from the following list of modules:   * AR3102 - Design 6 (8 Units) * LAD3001 - Design 5 (8 Units) * LAD3002 - Design 6 (8 Units) * ID3109 - Design Platforms G ### (4 Units) * ID3110 - Design Platforms H ### (4 Units) * BN4101 - B.Eng. Dissertation (8 Units) * CN4119 - Final Year Design Project (8 Units) * CE4104 - B. Eng. Dissertation (8 Units) * CG4002 - Computer Engineering Capstone Project (8 units) * EE4002D - Design Capstone (8 units) * EE4002R - Research Capstone (8 units) * ESE4502R - B. Eng. Dissertation (8 units) * ESP4901 - Research Project (8 units) * IE3100R - Systems Design Project (8 units) * IPM4101 - Dissertation (8 units) * MLE4101B - B.Eng. Dissertation (8 units) * MLE4102A - Design Project (8 units) * ME4101A - Bachelor of Engineering Dissertation (8 units) * XFE4401 - Integrated Honours Project ## (16 units) * CDE4301 - Innovation & Design Capstone ## (12 units) * CDE4301A - Ideas to Start-up ## (12 units) * RB4101A - B.Eng. Dissertation (8 units) |

2 The listing of modules is expected to grow and evolve over time, to suit curricular needs.

## Students taking this course will fulfil the Integrated Project pillar (8 units) and the remaining will be counted towards Unrestricted Electives.

### Students must read both ID3109 and ID3110 to satisfy the Integrated Project pillar.

***Recommended Semester Schedule for A-level & equivalent Students***

|  |  |  |  |
| --- | --- | --- | --- |
| **Semester 1** |  | **Semester 2** |  |
| GEA1000 Quantitative Reasoning with Data ^ | 4 | CS1010E Programming Methodology | 4 |
| DTK1234 Design Thinking | 4 | EG1311BE Design and Make | 4 |
| MA1513 Linear Algebra with Differential Equations | 2 | UE (Physics bridging PC1201 ^ for students without A-level Physics) | 4 |
| PF1101 Fundamentals of Project Management | 4 | MA1511 Engineering Calculus | 2 |
| CE1109 Structural Engineering Principles | 4 | CE2155 Principles of Structural Mechanics and Materials | 4 |
| CE2407A Engineering Uncertainty Analysis | 2 | CE2407B Introduction to Numerical Methods for Engineers | 2 |
| **Sub-total** | **20** | **Sub-total** | **20** |
| **Semester 3** |  | **Semester 4** |  |
| CDE2501 Liveable Cities | 4 | ES2631 Critical Thinking and Writing | 4 |
| CE2112 Soil Mechanics | 4 | CE3115 Stability of Slopes and Earth Retention Systems | 4 |
| CE2134 Fluid Mechanics | 4 | CE3166 Steel Design for Urban Infrastructure | 4 |
| CE3155A Structural Behaviour | 2 | CE3132 Hydrology and Free Surface Flows | 4 |
| CE3155B Structural Modelling | 2 | GE | 4 |
| UE | 4 |  |  |
| **Sub-total** | **20** | **Sub-total** | **20** |
| **Semester 5** |  | **Semester 6** |  |
| EE2211 Introduction to Machine Learning | 4 | CE3116 Foundation Systems for Urban Infrastructure | 4 |
| EG2401A Engineering Professionalism | 2 | Sustainable/ Environmental Elective | 4 |
| CE3121 Urban transportation engineering | 4 | CE4104 B. Eng. Dissertation | 4 |
| CE3165 Concrete Design for Urban Infrastructure | 4 | UE | 4 |
| GE | 4 | UE | 4 |
| UE | 4 |  |  |
| **Sub-total** | **22** | **Sub-total** | **20** |
| **Semester 7** |  | **Semester 8** |  |
| CE4104 B. Eng. Dissertation [continuation] | 4 | EG3611A Industrial Attachment | 10 |
| CE4103 Design Project | 4 | UE | 4 |
| UE | 4 | UE | 4 |
| UE | 4 |  |  |
| UE | 4 |  |  |
| **Sub-total** | **20** | **Sub-total** | **18** |

**Note:**

* ^for students without A-level Physics, you may consider taking PC1201 in Semester 1 – swapping place with GEA1000
* UE and GE can be taken in any semester

**Recommended Semester Schedule for Poly Direct-Entry Students**

Regardless of engineering course, all freshmen with a polytechnic diploma will be granted the following APCs from Admit Year 2025/26 onwards:

*For diplomas: Hotel and Leisure Facilities Management, NP; Real Estate Business, NP; Facilities Management, SP; Hotel and Leisure Facilities Management, SP; Integrated Events and Project Management, SP; Aviation Management, TP; Aviation Management & Services, TP; Integrated Facility Management, TP.*

* Unrestricted Electives: 20 UNITs
* EG3611P Industrial Attachment: 10 UNITs
* PF1101 Fundamentals of Project Management: 4 UNITs

**Total: 34 UNITs**

*For ALL other diplomas.*

* Unrestricted Elective Modules: 20 UNITs
* EG3611P Industrial Attachment: 10 UNITs
* EG1311BE Design and Make: 4 UNITs
* DTK1234 Design Thinking: 4 UNITs

**Total: 38 UNITs**

|  |  |  |  |
| --- | --- | --- | --- |
| **Semester 1** |  | **Semester 2** |  |
| GEA1000 Quantitative Reasoning with Data | 4 | CS1010E Programming Methodology | 4 |
| MA1301 Introductory Mathematics  *(fulfil UE requirement)* | 4 | MA1511 Engineering Calculus | 2 |
| PF1101 Fundamentals of Project Management/ DTK1234 Design Thinking | 4 | CE2407B Introduction to Numerical Methods for Engineers | 4 |
| CE1109 Structural Engineering Principles | 4 | CE2155 Principles of Structural Mechanics and Materials | 2 |
| GE | 4 | GE | 2 |
|  |  | UE | 4 |
| **Sub-total** | **20** | **Sub-total** | **20** |
| **Semester 3** |  | **Semester 4** |  |
| UE | 4 | ES2631 Critical Thinking and Writing | 4 |
| MA1513 Linear Algebra with Differential Equations | 2 | CE3115 Stability of Slopes and Earth Retention Systems | 4 |
| CE2407A Engineering Uncertainty Analysis | 2 | CE3132 Hydrology and Free Surface Flows | 4 |
| CE2112 Soil Mechanics | 4 | CE3166 Steel Design for Urban Infrastructure | 4 |
| CE2134 Fluid Mechanics | 4 | UE | 4 |
| CE3155A Structural Behaviour | 2 |  |  |
| CE3155B Structural Modelling | 2 |  |  |
| **Sub-total** | **20** | **Sub-total** | **20** |
| **Semester 5** |  | **Semester 6** |  |
| CDE2501 Liveable Cities | 4 | CE3116 Foundation Systems for Urban Infrastructure | 4 |
| EE2211 Introduction to Machine Learning | 4 | Sustainable/ Environmental Elective | 4 |
| EG2401A Engineering Professionalism | 2 | CE4103 Design Project | 4 |
| CE3121 Urban transportation engineering | 4 | CE4104 B. Eng. Dissertation [continuation] | 4 |
| CE3165 Concrete Design for Urban Infrastructure | 4 | UE | 4 |
| CE4104 B. Eng. Dissertation | 4 |  |  |
| **Sub-total** | **22** | **Sub-total** | **20** |

**Note**:

* UE and GE can be taken in any semester.
* MA1301 can be used to fulfil UE requirement for students who must take this bridging math module. For students who are exempted from this bridging math module, your UE requirements remain as 20 UNITs.

Proceed to take CE2407A & MA1513.

* If EG1311BE is not exempted, students can take it in any semester e.g. Semester 2.