

**Bachelor of Engineering (Electrical Engineering)
with Second Major in Innovation & Design**

Cohort AY2023/2024

| Course Requirements | Units |
|---|--------------|
| Common Curriculum | |
| GEA1000 Quantitative Reasoning with Data | 4 |
| CS1010E Programming Methodology | 4 |
| ES2631 Critique and Communication of Thinking and Design ¹ | 4 |
| GE: Cultures and Connections ¹ | 4 |
| GE: Singapore Studies ¹ | 4 |
| GE: Communities and Engagement ¹ | 4 |
| CDE2000 Creating Narratives | 4 |
| CDE2501 Liveable Cities | 4 |
| DTK1234 Design Thinking | 4 |
| EE2211 Introduction to Machine Learning | 4 |
| EG1311 Design and Make | 4 |
| IE2141 Systems Thinking and Dynamics | 4 |
| PF1101 Fundamentals of Project Management | 4 |
| CDE4301 Innovation & Design Capstone <u>or</u> CDE4301A Ideas to Start-up (over 2 consecutive semesters) ² | 8 |
| Sub-total for Common Curriculum | 60 |
| Engineering Core | |
| MA1511 Engineering Calculus | 2 |
| MA1512 Differential Equations for Engineering | 2 |
| MA1508E Linear Algebra for Engineering | 4 |
| EG2401A Engineering Professionalism | 2 |
| EG3611A Industrial Attachment <u>or</u> CFG2101 NUS Vacation Internship Programme ³ <u>and</u> EG3612 Vacation Industrial Attachment | 10 |
| Sub-total for Engineering Core | 20 |
| Engineering Programme Requirements | |
| EE1111A Electrical Engineering Principles and Practice I | 4 |
| EE2111A Electrical Engineering Principles and Practice II | 4 |
| EE2012 Analytical Methods in Electrical and Computer Engineering | 4 |
| EE2022 Electrical Energy Systems | 4 |
| EE2023 Signals and Systems | 4 |
| EE2026 Digital Design <u>or</u> EE2028 Microcontroller Programming and Interfacing | 4 |
| EE2027 Electronic Circuits | 4 |
| PC2020 Electromagnetics for Electrical Engineers | 4 |
| Technical electives | 8 |
| Sub-total for Engineering Programme Requirements | 40 |
| Unrestricted Electives | |
| Group A course for Second Major | 4 |
| Group B course for Second Major | 4 |
| Group C courses for Second Major (Innovation & Enterprise electives) | 8 |
| CDE3301/EG3301R Ideas to Proof-of-Concept (over 2 consecutive semesters) | 12 |
| CDE4301 Innovation & Design Capstone <u>or</u> CDE4301A Ideas to Start-up (over 2 consecutive semesters) ² | 4 |
| Other unrestricted electives | 8 |
| Sub-total for Unrestricted Electives | 40 |
| Total | 160 |

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Notes:

- ¹ Students may read equivalent courses in NUS College (NUSC), University Town College Programme (UTCP), and Ridge View Residential Programme (RVRC).
- ² The 12 units for CDE4301/CDE4301A are counted towards 8 units for the Integrated Project requirement in the Common Curriculum while 4 units are counted as unrestricted elective.
- ³ May be replaced by CDE2605 Undergraduate Research Opportunities Programme or CDE2605R Undergraduate Research Experience (UREx).

Recommended semester schedule – JC-intake students or equivalent
(for students who opt for vacation internships)

| Semester 1 | Units | Semester 2 | Units |
|--|-----------|---|-----------|
| EE1111A Electrical Engineering Principles and Practice I | 4 | EE2111A Electrical Engineering Principles and Practice II | 4 |
| CS1010E Programming Methodology | 4 | GEA1000 Quantitative Reasoning with Data | 4 |
| EG1311 Design & Make | 4 | DTK1234 Design Thinking | 4 |
| MA1511 Engineering Calculus | 2 | MA1508E Linear Algebra for Engineering | 4 |
| MA1512 Differential Equations for Engineering | 2 | PF1101 Fundamentals of Project Management | 4 |
| GE | 4 | Group A/B course for Second Major ^ | 4 |
| Sub-total | 20 | Sub-total | 24 |

| Summer vacation between Semesters 2 and 3 | Units |
|---|----------|
| CFG2101 NUS Vacation Internship Programme | 4 |
| Sub-total | 4 |

| Semester 3 | Units | Semester 4 | Units |
|---|-----------|---|-----------|
| EE2023 Signals and Systems | 4 | CDE2000 Creating Narratives | 4 |
| EE2026 Digital Design or EE2028 Microcontroller Programming and Interfacing | 4 | CDE2501 Liveable Cities | 4 |
| ES2631 Critique and Communication of Thinking and Design | 4 | EE2027 Electronic Circuits | 4 |
| IE2141 Systems Thinking & Dynamics | 4 | EE2211 Introduction to Machine Learning | 4 |
| Group A/B course for Second Major ^ | 4 | CDE3301/EG3301R Ideas to Proof-of-Concept | 6 |
| Sub-total | 20 | Sub-total | 22 |

| Summer vacation between Semesters 4 and 5 | Units |
|---|----------|
| EG3612 Vacation Internship Attachment | 6 |
| Sub-total | 6 |

| Semester 5 | Units | Semester 6 – can be used for SEP | Units |
|--|-----------|------------------------------------|-----------|
| CDE3301/EG3301R Ideas to Proof-of-Concept | 6 | Innovation & Enterprise Elective 1 | 4 |
| EE2012 Analytical Methods in Electrical and Computer Engineering | 4 | GE | 4 |
| EE2022 Electrical Energy Systems | 4 | GE | 4 |
| PC2020 Electromagnetics for Electrical Engineers | 4 | UE | 4 |
| EG2401A Engineering Professionalism | 2 | UE | 4 |
| Sub-total | 20 | Sub-total | 20 |

| Semester 7 | Units | Semester 8 | Units |
|--------------------------------------|-----------|--------------------------------------|-----------|
| CDE4301 Innovation & Design Capstone | 6 | CDE4301 Innovation & Design Capstone | 6 |
| Innovation & Enterprise Elective 2 | 4 | Technical Elective 2 | 4 |
| Technical Elective 1 | 4 | | |
| Sub-total | 14 | Sub-total | 10 |

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^ Students can only take CDE2310/EG2310 or CDE2301/EG2301 in Semester 2. Those who wish to take CDE2300/EG2201A (in lieu of CDE2310/EG2310) and CDE2311/EG2311/CDE2605R/CDE2606B/EG2606B (in lieu of CDE2301/EG2301) may clear both courses concurrently in Semester 3.

Recommended semester schedule – JC-intake students or equivalent
(for students who opt for vacation internships **plus a specialisation**)

| Semester 1 | Units | Semester 2 | Units |
|--|-----------|---|-----------|
| EE1111A Electrical Engineering Principles and Practice I | 4 | EE2111A Electrical Engineering Principles and Practice II | 4 |
| CS1010E Programming Methodology | 4 | GEA1000 Quantitative Reasoning with Data | 4 |
| EG1311 Design & Make | 4 | DTK1234 Design Thinking | 4 |
| MA1511 Engineering Calculus | 2 | MA1508E Linear Algebra for Engineering | 4 |
| MA1512 Differential Equations for Engineering | 2 | PF1101 Fundamentals of Project Management | 4 |
| GE | 4 | Group A/B course for Second Major ^ | 4 |
| Sub-total | 20 | Sub-total | 24 |

| Summer vacation between Semesters 2 and 3 | Units |
|---|----------|
| CFG2101 NUS Vacation Internship Programme | 4 |
| Sub-total | 4 |

| Semester 3 | Units | Semester 4 | Units |
|---|-----------|---|-----------|
| EE2023 Signals and Systems | 4 | CDE2000 Creating Narratives | 4 |
| EE2026 Digital Design or EE2028 Microcontroller Programming and Interfacing | 4 | CDE2501 Liveable Cities | 4 |
| ES2631 Critique and Communication of Thinking and Design | 4 | EE2027 Electronic Circuits | 4 |
| IE2141 Systems Thinking & Dynamics | 4 | EE2211 Introduction to Machine Learning | 4 |
| Group A/B course for Second Major ^ | 4 | CDE3301/EG3301R Ideas to Proof-of-Concept | 6 |
| Sub-total | 20 | Sub-total | 22 |

| Summer vacation between Semesters 4 and 5 | Units |
|---|----------|
| EG3612 Vacation Internship Attachment | 6 |
| Sub-total | 6 |

| Semester 5 | Units | Semester 6 – can be used for SEP | Units |
|--|-----------|------------------------------------|-----------|
| CDE3301/EG3301R Ideas to Proof-of-Concept | 6 | Innovation & Enterprise Elective 1 | 4 |
| EE2012 Analytical Methods in Electrical and Computer Engineering | 4 | GE | 4 |
| EE2022 Electrical Energy Systems | 4 | GE | 4 |
| PC2020 Electromagnetics for Electrical Engineers | 4 | Specialisation course 1 | 4 |
| EG2401A Engineering Professionalism | 2 | Specialisation course 2 | 4 |
| Sub-total | 20 | Sub-total | 20 |

| Semester 7 | Units | Semester 8 | Units |
|--------------------------------------|-----------|--------------------------------------|-----------|
| CDE4301 Innovation & Design Capstone | 6 | CDE4301 Innovation & Design Capstone | 6 |
| Innovation & Enterprise Elective 2 | 4 | Specialisation course 4 | 4 |
| Specialisation course 3 | 4 | Specialisation course 5 | 4 |
| Sub-total | 14 | Sub-total | 14 |

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^ Students can only take CDE2310/EG2310 or CDE2301/EG2301 in Semester 2. Those who wish to take CDE2300/EG2201A (in lieu of CDE2310/EG2310) and CDE2311/EG2311/CDE2605R/CDE2606B/EG2606B (in lieu of CDE2301/EG2301) may clear both courses concurrently in Semester 3.

Recommended semester schedule – JC-intake students or equivalent
(for students who opt for industrial attachment)

| Semester 1 | Units | Semester 2 | Units |
|--|-----------|---|-----------|
| EE1111A Electrical Engineering Principles and Practice I | 4 | EE2111A Electrical Engineering Principles and Practice II | 4 |
| CS1010E Programming Methodology | 4 | GEA1000 Quantitative Reasoning with Data | 4 |
| EG1311 Design & Make | 4 | DTK1234 Design Thinking | 4 |
| MA1511 Engineering Calculus | 2 | MA1508E Linear Algebra for Engineering | 4 |
| MA1512 Differential Equations for Engineering | 2 | PF1101 Fundamentals of Project Management | 4 |
| GE | 4 | Group A/B course for Second Major ^ | 4 |
| Sub-total | 20 | Sub-total | 24 |

| Semester 3 | Units | Semester 4 | Units |
|---|-----------|---|-----------|
| EE2023 Signals and Systems | 4 | CDE2000 Creating Narratives | 4 |
| EE2026 Digital Design or EE2028 Microcontroller Programming and Interfacing | 4 | CDE2501 Liveable Cities | 4 |
| ES2631 Critique and Communication of Thinking and Design | 4 | EE2027 Electronic Circuits | 4 |
| IE2141 Systems Thinking & Dynamics | 4 | EE2211 Introduction to Machine Learning | 4 |
| Group A/B course for Second Major ^ | 4 | CDE3301/EG3301R Ideas to Proof-of-Concept | 6 |
| Sub-total | 20 | Sub-total | 22 |

| Semester 5 | Units | Semester 6 | Units |
|--|-----------|-------------------------------|-----------|
| CDE3301/EG3301R Ideas to Proof-of-Concept | 6 | EG3611A Industrial Attachment | 10 |
| EE2012 Analytical Methods in Electrical and Computer Engineering | 4 | | |
| EE2022 Electrical Energy Systems | 4 | | |
| PC2020 Electromagnetics for Electrical Engineers | 4 | | |
| EG2401A Engineering Professionalism | 2 | | |
| Sub-total | 20 | Sub-total | 10 |

| Semester 7 | Units | Semester 8 | Units |
|--------------------------------------|-----------|--------------------------------------|-----------|
| CDE4301 Innovation & Design Capstone | 6 | CDE4301 Innovation & Design Capstone | 6 |
| Innovation & Enterprise Elective 1 | 4 | Innovation & Enterprise Elective 2 | 4 |
| Technical Elective 1 | 4 | Technical Elective 2 | 4 |
| GE | 4 | UE | 4 |
| GE | 4 | UE | 4 |
| Sub-total | 22 | Sub-total | 22 |

^ Students can only take CDE2310/EG2310 or CDE2301/EG2301 in Semester 2. Those who wish to take CDE2300/EG2201A (in lieu of CDE2310/EG2310) and CDE2311/EG2311/CDE2605R/CDE2606B/EG2606B (in lieu of CDE2301/EG2301) may clear both courses concurrently in Semester 3.

Recommended semester schedule – JC-intake students or equivalent
(for students who opt for industrial attachment **plus a specialisation**)

| Semester 1 | Units | Semester 2 | Units |
|--|-----------|---|-----------|
| EE1111A Electrical Engineering Principles and Practice I | 4 | EE2111A Electrical Engineering Principles and Practice II | 4 |
| CS1010E Programming Methodology | 4 | GEA1000 Quantitative Reasoning with Data | 4 |
| EG1311 Design & Make | 4 | DTK1234 Design Thinking | 4 |
| MA1511 Engineering Calculus | 2 | MA1508E Linear Algebra for Engineering | 4 |
| MA1512 Differential Equations for Engineering | 2 | PF1101 Fundamentals of Project Management | 4 |
| GE | 4 | Group A/B course for Second Major ^ | 4 |
| Sub-total | 20 | Sub-total | 24 |

| Semester 3 | Units | Semester 4 | Units |
|---|-----------|---|-----------|
| EE2023 Signals and Systems | 4 | CDE2000 Creating Narratives | 4 |
| EE2026 Digital Design or EE2028 Microcontroller Programming and Interfacing | 4 | CDE2501 Liveable Cities | 4 |
| ES2631 Critique and Communication of Thinking and Design | 4 | EE2027 Electronic Circuits | 4 |
| IE2141 Systems Thinking & Dynamics | 4 | EE2211 Introduction to Machine Learning | 4 |
| Group A/B course for Second Major ^ | 4 | CDE3301/EG3301R Ideas to Proof-of-Concept | 6 |
| Sub-total | 20 | Sub-total | 22 |

| Semester 5 | Units | Semester 6 | Units |
|--|-----------|-------------------------------|-----------|
| CDE3301/EG3301R Ideas to Proof-of-Concept | 6 | EG3611A Industrial Attachment | 10 |
| EE2012 Analytical Methods in Electrical and Computer Engineering | 4 | | |
| EE2022 Electrical Energy Systems | 4 | | |
| PC2020 Electromagnetics for Electrical Engineers | 4 | | |
| EG2401A Engineering Professionalism | 2 | | |
| GE | 4 | | |
| Sub-total | 24 | Sub-total | 22 |

| Semester 7 | Units | Semester 8 | Units |
|--------------------------------------|-----------|--------------------------------------|-----------|
| CDE4301 Innovation & Design Capstone | 6 | CDE4301 Innovation & Design Capstone | 6 |
| Innovation & Enterprise Elective 1 | 4 | Innovation & Enterprise Elective 2 | 4 |
| Specialisation course 1 | 4 | Specialisation course 3 | 4 |
| Specialisation course 2 | 4 | Specialisation course 4 | 4 |
| GE | 4 | Specialisation course 5 | 4 |
| Sub-total | 22 | Sub-total | 22 |

^ Students can only take CDE2310/EG2310 or CDE2301/EG2301 in Semester 2. Those who wish to take CDE2300/EG2201A (in lieu of CDE2310/EG2310) and CDE2311/EG2311/CDE2605R/CDE2606B/EG2606B (in lieu of CDE2301/EG2301) may clear both courses concurrently in Semester 3.

Recommended semester schedule – JC-intake students or equivalent
(for students in year-long NOC programmes)

| Semester 1 | Units | Semester 2 | Units |
|--|-----------|---|-----------|
| EE1111A Electrical Engineering Principles and Practice I | 4 | EE2111A Electrical Engineering Principles and Practice II | 4 |
| CS1010E Programming Methodology | 4 | GEA1000 Quantitative Reasoning with Data | 4 |
| EG1311 Design & Make | 4 | DTK1234 Design Thinking | 4 |
| MA1511 Engineering Calculus | 2 | MA1508E Linear Algebra for Engineering | 4 |
| MA1512 Differential Equations for Engineering | 2 | PF1101 Fundamentals of Project Management | 4 |
| GE | 4 | Group A/B course for Second Major ^ | 4 |
| Sub-total | 20 | Sub-total | 24 |

| Semester 3 | Units | Semester 4 | Units |
|---|-----------|---|-----------|
| EE2023 Signals and Systems | 4 | CDE2000 Creating Narratives | 4 |
| EE2026 Digital Design or EE2028 Microcontroller Programming and Interfacing | 4 | CDE2501 Liveable Cities | 4 |
| ES2631 Critique and Communication of Thinking and Design | 4 | EE2027 Electronic Circuits | 4 |
| IE2141 Systems Thinking & Dynamics | 4 | EE2211 Introduction to Machine Learning | 4 |
| Group A/B course for Second Major ^ | 4 | CDE3301/EG3301R Ideas to Proof-of-Concept | 6 |
| Sub-total | 20 | Sub-total | 22 |

| Semester 5 | Units | Semester 6 – NOC | Units |
|--|-----------|------------------|-----------|
| CDE3301/EG3301R Ideas to Proof-of-Concept | 6 | NOC | |
| EE2012 Analytical Methods in Electrical and Computer Engineering | 4 | | |
| EE2022 Electrical Energy Systems | 4 | | |
| PC2020 Electromagnetics for Electrical Engineers | 4 | | |
| Sub-total | 18 | Sub-total | 22 |

| Semester 7 – NOC | Units | Semester 8 | Units |
|------------------|-----------|----------------------|-----------|
| NOC | | Technical Elective 1 | 4 |
| | | Technical Elective 2 | 4 |
| | | GE | 4 |
| | | GE | 4 |
| | | UE | 2 |
| Sub-total | 20 | Sub-total | 18 |

^ Students can only take CDE2310/EG2310 or CDE2301/EG2301 in Semester 2. Those who wish to take CDE2300/EG2201A (in lieu of CDE2310/EG2310) and CDE2311/EG2311/CDE2605R/CDE2606B/EG2606B (in lieu of CDE2301/EG2301) may clear both courses concurrently in Semester 3.

A year-long NOC programme comprises the following courses:

- ETP3206L Innovation & Enterprise Internship (16 units) – replaces EG3611A (10 units), EG2401A (2 units), and UE (4 units)
- ETP3202L Innovation & Enterprise Case Study & Analysis (8 units) – replaces CDE4301A (8 units out of 12 units)

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- ETP3203L Innovation & Enterprise Internship Practicum (8 units) – replaces CDE4301A (4 units out of 12 units) and UE (4 units)
- ETP2271 Discovering Resilience and Purpose (2 units) – counted as UE (2 units)
- Entrepreneurship courses (4 or 8 units) – replaces Innovation & Enterprise electives (up to 8 units – students will need to complete additional Innovation & Enterprise Electives in NUS if they are unable to complete 8 units of entrepreneurship courses during NOC)

Recommended semester schedule – JC-intake students or equivalent
(for students in one-semester NOC programmes)

| Semester 1 | Units | Semester 2 | Units |
|--|-----------|---|-----------|
| EE1111A Electrical Engineering Principles and Practice I | 4 | EE2111A Electrical Engineering Principles and Practice II | 4 |
| CS1010E Programming Methodology | 4 | GEA1000 Quantitative Reasoning with Data | 4 |
| EG1311 Design & Make | 4 | DTK1234 Design Thinking | 4 |
| MA1511 Engineering Calculus | 2 | MA1508E Linear Algebra for Engineering | 4 |
| MA1512 Differential Equations for Engineering | 2 | PF1101 Fundamentals of Project Management | 4 |
| GE | 4 | Group A/B course for Second Major ^ | 4 |
| Sub-total | 20 | Sub-total | 24 |

| Semester 3 | Units | Semester 4 | Units |
|---|-----------|---|-----------|
| EE2023 Signals and Systems | 4 | CDE2000 Creating Narratives | 4 |
| EE2026 Digital Design or EE2028 Microcontroller Programming and Interfacing | 4 | CDE2501 Liveable Cities | 4 |
| ES2631 Critique and Communication of Thinking and Design | 4 | EE2027 Electronic Circuits | 4 |
| IE2141 Systems Thinking & Dynamics | 4 | EE2211 Introduction to Machine Learning | 4 |
| Group A/B course for Second Major ^ | 4 | CDE3301/EG3301R Ideas to Proof-of-Concept | 6 |
| Sub-total | 20 | Sub-total | 22 |

| Semester 5 | Units | Semester 6 – NOC | Units |
|--|-----------|------------------|-----------|
| CDE3301/EG3301R Ideas to Proof-of-Concept | 6 | NOC | |
| EE2012 Analytical Methods in Electrical and Computer Engineering | 4 | | |
| EE2022 Electrical Energy Systems | 4 | | |
| PC2020 Electromagnetics for Electrical Engineers | 4 | | |
| Sub-total | 18 | Sub-total | 22 |

| Semester 7 | Units | Semester 8 | Units |
|--------------------------------------|-----------|--------------------------------------|-----------|
| CDE4301 Innovation & Design Capstone | 6 | CDE4301 Innovation & Design Capstone | 6 |
| Technical Elective 1 | 4 | Technical Elective 2 | 4 |
| GE * | 4 | UE | 4 |
| GE * | 4 | UE | 2 |
| Sub-total | 18 | Sub-total | 16 |

^ Students can only take CDE2310/EG2310 or CDE2301/EG2301 in Semester 2. Those who wish to take CDE2300/EG2201A (in lieu of CDE2310/EG2310) and CDE2311/EG2311/CDE2605R/CDE2606B/EG2606B (in lieu of CDE2301/EG2301) may clear both courses concurrently in Semester 3.

A one-semester NOC programme comprises the following courses:

- ETP3201L Innovation & Enterprise Internship (12 units) – replaces EG3611A (10 units) and EG2401A (2 units)
- ETP3204S Innovation & Enterprise Internship Practicum (4 units) – replaces Innovation & Enterprise Elective 1 (4 units)
- Entrepreneurship course (4 units) – replaces Innovation & Enterprise Elective 2 (4 units)
- ETP2271 Discovering Resilience and Purpose (2 units) – counted as UE (2 units)

Recommended semester schedule – JC-intake students or equivalent
(for students in Engineering Scholars Programme)

| Semester 1 | Units | Semester 2 | Units |
|---|-----------|---|-----------|
| EE1111A Electrical Engineering Principles and Practice I | 4 | EE2111A Electrical Engineering Principles and Practice II | 4 |
| MA1512 Differential Equations for Engineering | 2 | EE2023 Signals and Systems | 4 |
| UTCP course 1 (replaces GE) | 4 | GEA1000 Quantitative Reasoning with Data | 4 |
| Group B course for Second Major | 4 | DTK1234 Design Thinking | 4 |
| UE (or IE2141 Systems Thinking & Dynamics if not in UTCP) | 4 | UTCP course 2 (replaces GE) | 4 |
| UE | 4 | CDE3301/EG3301R Ideas to Proof-of-Concept | 6 |
| Sub-total | 22 | Sub-total | 26 |

| Semester 3 | Units | Semester 4 – NOC | Units |
|---|-----------|------------------|-----------|
| EE2026 Digital Design or EE2028 Microcontroller Programming and Interfacing | 4 | NOC | |
| EE2027 Electronic Circuits | 4 | | |
| PC2020 Electromagnetics for Electrical Engineers | 4 | | |
| UTCP course 3 (replaces GE) | 4 | | |
| CDE3301/EG3301R Ideas to Proof-of-Concept | 6 | | |
| Group A course for Second Major | 4 | | |
| Sub-total | 26 | Sub-total | 22 |

| Semester 5 | Units | Semester 6 | Units |
|---|-----------|---|-----------|
| CDE4301 Innovation & Design Capstone | 6 | CDE4301 Innovation & Design Capstone | 6 |
| EE2012 Analytical Methods in Electrical and Computer Engineering | 4 | CDE2000 Creating Narratives | 4 |
| EE2022 Electrical Energy Systems | 4 | CDE2501 Liveable Cities | 4 |
| EE2211 Introduction to Machine Learning | 4 | PF1101 Fundamentals of Project Management | 4 |
| UTCP course 4 (replaces ES2631 Critique and Communication of Thinking and Design) | 4 | Technical Elective 2 | 4 |
| Technical Elective 1 | 4 | | |
| Sub-total | 26 | Sub-total | 22 |

Students are highly encouraged to complete the following courses before Semester 1 through advanced placement credits:

- CS1010E Programming Methodology (4 units)
- EG1311 Design & Make (4 units)
- MA1505 Mathematics I (4 units) – replaces MA511 Engineering Calculus (2 units) and counted as UE (2 units)
- MA2001 Linear Algebra (4 units) – replaces MA1508E Linear Algebra for Engineering (4 units)

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A one-semester NOC programme comprises the following courses:

- ETP3201L Innovation & Enterprise Internship (12 units) – replaces EG3611A (10 units) and EG2401A (2 units)
- ETP3204S Innovation & Enterprise Internship Practicum (4 units) – replaces Innovation & Enterprise Elective 1 (4 units)
- Entrepreneurship course (4 units) – replaces Innovation & Enterprise Elective 2 (4 units)
- ETP2271 Discovering Resilience and Purpose (2 units) – counted as UE (2 units)

Recommended semester schedule – poly-intake students

| Semester 1 | Units | Semester 2 | Units |
|--|-----------|---|-----------|
| EE1111A Electrical Engineering Principles and Practice I | 4 | EE2111A Electrical Engineering Principles and Practice II | 4 |
| CS1010E Programming Methodology | 4 | GEA1000 Quantitative Reasoning with Data | 4 |
| MA1301 Introductory Mathematics * (UE) | 4 | MA1508E Linear Algebra for Engineering | 4 |
| PC1201 Fundamentals of Physics (UE) | 4 | PF1101 Fundamentals of Project Management | 4 |
| Group A/B course for Second Major | 4 | CDE3301/EG3301R Ideas to Proof-of-Concept | 6 |
| | | Group A/B course for Second Major | 4 |
| Sub-total | 20 | Sub-total | 26 |

| Semester 3 | Units | Semester 4 | Units |
|---|-----------|--|-----------|
| MA1511 Engineering Calculus * | 2 | CDE2000 Creating Narratives | 4 |
| MA1512 Differential Equations for Engineering * | 2 | CDE2501 Liveable Cities | 4 |
| EE2022 Electrical Energy Systems | 4 | EE2012 Analytical Methods in Electrical and Computer Engineering | 4 |
| EE2026 Digital Design or EE2028 Microcontroller Programming and Interfacing | 4 | EE2023 Signals and Systems | 4 |
| EE2027 Electronic Circuits | 4 | EE2211 Introduction to Machine Learning | 4 |
| ES2631 Critique and Communication of Thinking and Design | 4 | PC2020 Electromagnetics for Electrical Engineers | 4 |
| CDE3301/EG3301R Ideas to Proof-of-Concept | 6 | | |
| Sub-total | 26 | Sub-total | 24 |

| Semester 5 | Units | Semester 6 | Units |
|--------------------------------------|-----------|--------------------------------------|-----------|
| CDE4301 Innovation & Design Capstone | 6 | CDE4301 Innovation & Design Capstone | 6 |
| Innovation & Enterprise Elective 1 | 4 | Innovation & Enterprise Elective 2 | 4 |
| EG2401A Engineering Professionalism | 2 | Technical Elective 1 | 4 |
| IE2141 Systems Thinking & Dynamics | 4 | Technical Elective 2 | 4 |
| GE | 4 | GE | 4 |
| GE | 4 | | |
| Sub-total | 24 | Sub-total | 22 |

* Students who are exempted from MA1301 can take MA1511 and MA1512 in Semester 1.

Poly-intake students with accredited diplomas will receive the following exemptions:

- DTK1234 Design Thinking (4 units)
- EG1311 Design & Make (4 units)
- EG3611A Industrial Attachment (10 units)
- Unrestricted electives (20 units)