FACULTY OF ENGINEERING

DEPARTMENT OF ELECTRONIC AND ELECTRICAL ENGINEERING

ELECTRONIC AND ELECTRICAL ENGINEERING

Master of Engineering in Electronic and Electrical Engineering
Master of Engineering in Electronic and Electrical Engineering with Business Studies
Master of Engineering in Electronic and Electrical Engineering with International Study
Master of Engineering in Electrical Energy Systems
Master of Engineering in Electronic and Digital Systems
Bachelor of Engineering with Honours in Electronic and Electrical Engineering
Bachelor of Engineering in Electronic and Electrical Engineering
Diploma of Higher Education in Electronic and Electrical Engineering
Certificate of Higher Education in Electronic and Electrical Engineering

These regulations are to be read in conjunction with General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

Mode of Study

1. The programmes are available by full-time study only.

Place of Study

2. The MEng in Electronic and Electrical Engineering with International Study requires study at an approved institution abroad. Such study will normally extend over a minimum period of 30 weeks. Subject to availability of an approved curriculum (including any project), study abroad normally will be undertaken during fourth year of the programme. Study abroad may exceptionally comprise two exchanges with different institutions of one semester each.

Curriculum

3. **First Year –** All students shall undertake modules amounting to 120 credits as follows:

Compulsory Modules

Module Code	Module Title	Level	Credits
EE105	Electronic and Electrical Techniques and Design 1	1	20
EE106	Engineering Design for Software Development 1	1	20
EE107	Electronic and Electrical Principles 1	1	20
MM113	Engineering Mathematics 1E	1	20
MM114	Engineering Mathematics 2E	1	20
PH167	Physical Electronics	1	10
	Elective Module		10

4. **Second Year -** All students shall undertake modules amounting to 120 credits as follows:

Compulsory Modules

Module Code	Module Title	Level	Credits
56213	Engineering Design and Manufacture	2	10
PH260	Physical Electronics	2	10
19207	Electromagnetism	2	10
EE269	Electronic and Electrical Principles 2	2	20
EE270	Digital Electronic Systems	2	20
EE271	Electronic and Electrical Techniques and Design 2	2	10
EE273	Engineering Design for Software Development 2	2	20
MM213	Engineering Mathematics 3E	2	20

5. **Third Year -** All students shall undertake modules amounting to 120 credits as follows:

Compulsory Modules

Module Code	Module Title	Level	Credits
EE320	Signals and Communications Systems	3	20
EE311	Electronic and Electrical Principles 3	3	20
EE312	Instrumentation and Microcontrollers	3	20
EE313	Engineering Analysis	3	20
56324	Engineering Innovation and Management	3	10
EE318	Engineering Project	3	10
	Elective Modules		20

6. **Fourth Year -** All students shall undertake modules amounting to 120 credits as follows:

Compulsory Modules

Module Code	Module Title	Level	Credits
19496	Project	4	40

Optional Modules

80 credits appropriate to the chosen programme.

BEng in Electronic and Electrical Engineering
Optional modules chosen from Lists A, B and C.

For MEng students, optional modules must, over fourth and fifth years, incorporate no fewer than 140 credits at Level 4 and above and no fewer than 80 credits at Level 5.

MEng in Electronic and Electrical Engineering
Optional modules chosen from Lists A, B and C.

Exceptionally, such other modules totalling no more than 20 credits as approved by the Programme Director.

MEng in Electronic and Electrical Engineering with Business Studies
Optional modules chosen from Lists A, B and C.

Exceptionally, such other modules totalling no more than 20 credits as approved by the Programme Director.

MEng in Electronic and Electrical Engineering with International Study
Optional modules chosen from Lists A, B and C.

Students are permitted to incorporate up to 20 credits of modules in foreign language or otherwise relevant to international study, approved by the Programme Director.

Students who elect to undertake study abroad during fourth year shall follow an approved curriculum which is equivalent to that specified in these regulations. Where students are not able to undertake individual project module(s) equivalent to individual project 19496, they will, subject to the approval of Programme Director, be allowed to undertake equivalent group project modules equivalent to 19520. In such cases, students will be required to undertake an equivalent individual project module in Year 5.

In order to progress to a period of study abroad, a student must normally have passed all modules from the programme curriculum. Any student who does not meet this requirement may be required to transfer to another programme not requiring study abroad.

MEng in Electrical Energy Systems

Compulsory Modules
If not already taken:

Module Code	Module Title	Level	Credits
EE317	Renewable Energy Technologies	3	20

Optional modules chosen from

At Levels 3 and 4, Lists A and C.

Exceptionally, such other modules totalling no more than 20 credits as approved by the Programme Director.

MEng in Electronic and Digital Systems

Compulsory Modules

If not already taken:

Module Code	Module Title	Level	Credits
EE315	Analogue and Digital System Design	3	20

Optional modules chosen from

At Levels 3 and 4, Lists B and C.

Exceptionally, such other modules totalling no more than 20 credits as approved by the Programme Director.

Optional Modules at Level 4.

List A: Electrical Energy Systems

Module Code	Module Title	Level	Credits
EE 466	Power Electronics, Machines and Applications	4	20
EE 467	Power System Design, Operation and Protection	4	20

List B: Electronic and Digital Systems

Module Code	Module Title	Level	Credits
EE468	Analogue Systems	4	20
EE469	Digital Signal Processing Principles	4	20
EE470	Information Transmission And Security	4	20

List C: General

Module Code	Module Title	Level	Credits
EE315	Digital and Analogue Systems	3	20
EE317	Renewable Systems	3	20
EE471	Communications Networks	4	20
EE472	Control Principles	4	20
EE473	Photonic Systems	4	20
EE474	Robotics: Systems And Control	4	20
EE579	Advanced Microcontroller Applications	5	20

Not all optional modules on these lists will be available in each academic year. Please check your programme handbook for confirmation of which optional modules will run.

8. Fifth Year
All students shall undertake modules amounting to 120 credits as follows:

<u>Compulsory Modules</u>

Module Code	Module Title	Level	Credits
19520	Group Project	5	40

Optional Modules

80 credits appropriate to the chosen programme.

Optional modules must, over fourth and fifth years, incorporate no fewer than 140 credits at Level 4 and above and no fewer than 80 credits at Level 5.

MEng in Electronic and Electrical Engineering
Optional modules chosen from Lists A and B.

Exceptionally, such other modules totalling no more than 20 credits as approved by the Programme Director.

MEng in Electronic and Electrical Engineering with Business Studies
60 credits of optional modules chosen from Lists A and B plus 20 credits of business studies modules chosen from the list below:

Module Code	Module Title	Level	Credits
MS952	Regulation and Competition in Network Industries	5	20
CL504	Financial Engineering	5	10
ME927	Energy Resources and Policy	5	10
MS969	Advanced Project Management	5	10

Exceptionally, such other modules totalling no more than 20 credits as approved by the Programme Director.

MEng in Electronic and Electrical Engineering with International Study
Optional modules chosen from Lists A and B.

Students permitted to incorporate up to 20 credits of modules in foreign language or otherwise relevant to international study, approved by the Programme Director.

Students who undertook a group project equivalent to 19520 during their 4th year abroad will be required to take an individual project module EE5XY.

Students who undertake study abroad during all or part of fifth year shall follow an approved curriculum which is equivalent to that specified in these regulations.

MEng in Electrical Energy Systems
Optional modules chosen from List A.

Exceptionally, such other modules totalling no more than 20 credits as approved by the Programme Director

MEng in Electronic and Digital Systems
Optional modules chosen from List B.

Exceptionally, such other modules totalling no more than 20 credits as approved by the Programme Director.

Optional Modules at Level 5

List A: Electrical Energy Systems

Module Code	Module Title	Level	Credits
EE573	Advanced Power System Analysis and Protection	5	20
EE574	High Voltage Technology and Electromagnetic Compatibility	5	20
EE575	Power Electronics for Energy and Drive Control	5	20
EE576	Power System Economics, Markets and Asset Management	5	20
EE577	Wind Energy and Distributed Energy Resources	5	20

List B: Electronic and Digital Systems

Module Code	Module Title	Level	Credits
EE578	Advanced Digital Signal Processing	5	20
EE579	Advanced Microcontroller Applications	5	20
EE580	DSP and FPGA-based Embedded System Design	5	20
EE581	Image and Video Processing	5	20

Not all optional modules in these lists will be available in each academic year. Please check your programme handbook for confirmation of which optional modules will run.

Progress

9. In order to progress to the second year of the programme, see General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

10. In order to progress to the third year of the programme, see General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

11. In order to progress to the fourth year of the programme, see General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

12. In order to progress to the fifth year of the programme, see General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

Final Assessment and Classification

13. The final classification of the chosen programme in Electronic and Electrical Engineering will normally be based on the first attempt at compulsory and optional modules taken in third, fourth and fifth years.

Award

14. **MEng**: In order to qualify for the award of the degree of MEng in the chosen programme the General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level shall apply and must include the Individual Project 19496 and the Group Project 19520.

15. **MEng in Electronic and Electrical Engineering with International Studies**: The General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level shall apply and a candidate must have undertaken successfully no fewer than 30 weeks of approved study abroad.

16. **BEng with Honours**: In order to qualify for the award of the degree of BEng with Honours in Electronic and Electrical Engineering the General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level shall apply and must include the Individual Project 19496.

17. **BEng**: In order to qualify for the award of the degree of BEng in Electronic and Electrical Engineering, see General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

18. **Diploma of Higher Education**: In order to qualify for the award of a Diploma of Higher Education in Electronic and Electrical Engineering, see General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.

19. **Certificate of Higher Education**: In order to qualify for the award of a Certificate of Higher Education in Electronic and Electrical Engineering, see General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level.