

Programme Regulations: 2021/22

Programme Titles:

Degree of Bachelor of Engineering with Honours in Automation and Control - UCAS Code: H660 (with Foundation Year – UCAS Code: H606)

Degree of Bachelor of Engineering with Honours in Automation and Control with Placement Year - Code: 1192U

Notes:

- (i) *These programme regulations should be read in conjunction with the University's Taught Programme Regulations.*
- (ii) *All optional modules are offered subject to the constraints of the timetable and to any restrictions on the number of students who may be taught on a particular module. Not all modules may be offered in all years and they are listed subject to availability.*
- (iii) *A compulsory module is a module which a student is required to study.*
- (iv) *All modules are delivered in Linear mode unless stated otherwise as Block, eLearning or distance learning.*

See also:

Stage 0 (Foundation Year) for all Degrees of Bachelor of Engineering with Honours and Master of Engineering with Honours

1. Stage 0

Candidates who do not meet the requirements for entry into Stage 1 may with approval of the Degree Programme Director commence this degree programme at Stage 0 and shall proceed under the regulations relating to Stage 0.

2. Stage 1

All candidates shall take the following compulsory modules:

| <i>Code</i> | <i>Descriptive title</i> | <i>Total Credits</i> | <i>Credits Sem 1</i> | <i>Credits Sem 2</i> | <i>Level</i> |
|-------------|---|----------------------|----------------------|----------------------|--------------|
| ENG1001 | Engineering Mathematics I | 20 | 10 | 10 | 4 |
| ENG1002 | Sustainable Design & Professional Skills I | 30 | 10 | 20 | 4 |
| ENG1003 | Electrical and Magnetic Systems | 15 | 15 | | 4 |
| ENG1004 | Electronics & Sensors | 10 | | 10 | 4 |
| ENG1005 | Thermofluid Mechanics | 15 | 5 | 10 | 4 |
| ENG1006 | Properties and Behaviour of Engineering Materials | 15 | 15 | | 4 |
| ENG1007 | Mechanics I | 15 | 5 | 10 | 4 |

3. Stage 2

All candidates shall take the following compulsory modules:

| <i>Code</i> | <i>Descriptive title</i> | <i>Total Credits</i> | <i>Credits Sem 1</i> | <i>Credits Sem 2</i> | <i>Level</i> |
|-------------|---|----------------------|----------------------|----------------------|--------------|
| EEE2007 | Computer Systems and Microprocessors | 20 | 10 | 10 | 5 |
| EEE2008 | Project and Professional Issues | 20 | | 20 | 5 |
| EEE2009 | Signals and Communications | 20 | 20 | | 5 |
| EEE2014 | Semiconductor Devices and Analogue Electronics | 20 | 20 | | 5 |
| EEE2015 | Electromagnetic Fields and Waves | 10 | | 10 | 5 |
| ENG2026 | Automatic Control Systems | 10 | | 10 | 5 |
| ENG2025 | Digital Electronics | 10 | | 10 | 5 |
| ENG2029 | Introduction to Electrical AC Machines and Drives | 10 | | 10 | 5 |

4. Year 3 (Placement Year)

On completion of Stage 2 and before entering Stage 3, candidates may as part of their studies for the degree spend a year in a placement with an approved organisation. Permission to undertake a placement is subject to the approval of the Degree Programme Director. Students who are required to re-sit their Stage 2 assessment must delay the start of their placement until they have done so. Students who fail Stage 2 may not complete a placement year.

| <i>Code</i> | <i>Descriptive title</i> | <i>Total Credits</i> | <i>Credits Sem 1</i> | <i>Credits Sem 2</i> | <i>Level</i> |
|-------------|---------------------------------------|----------------------|----------------------|----------------------|--------------|
| NCL3000 | Careers Service Placement Year Module | 120 | 60 | 60 | 6 |

5. Stage 3

(a) All candidates shall take the following compulsory modules:

| <i>Code</i> | <i>Descriptive title</i> | <i>Total Credits</i> | <i>Credits Sem 1</i> | <i>Credits Sem 2</i> | <i>Level</i> |
|-------------|---|----------------------|----------------------|----------------------|--------------|
| EEE3001 | Linear Controller Design and State Space Analysis | 10 | 10 | | 6 |
| EEE3008 | Industrial Automation and PLCs | 10 | 10 | | 6 |
| EEE3011 | Electric Drives | 10 | | 10 | 6 |
| EEE3018 | Digital Control Systems | 10 | | 10 | 6 |
| ENG2001 | Accounting, Finance and Law for Engineers | 10 | 5 | 5 | 5 |

(b) All candidates shall take **one** of the following optional modules:

| <i>Code</i> | <i>Descriptive title</i> | <i>Total Credits</i> | <i>Credits Sem 1</i> | <i>Credits Sem 2</i> | <i>Level</i> |
|-------------|--|----------------------|----------------------|----------------------|--------------|
| EEE3095 | Individual Project and Dissertation (BEng) | 40 | 20 | 20 | 6 |
| EEE3096 | Individual Project and Dissertation (BEng) | 40 | 10 | 30 | 6 |
| EEE3097 | Individual Project and Dissertation (BEng) | 40 | 30 | 10 | 6 |

(c) All candidates shall take 30 credits of optional modules normally selected from the following list:

| <i>Code</i> | <i>Descriptive title</i> | <i>Total Credits</i> | <i>Credits Sem 1</i> | <i>Credits Sem 2</i> | <i>Level</i> |
|-------------|--|----------------------|----------------------|----------------------|--------------|
| EEE3002 | Electrical Machines | 10 | 10 | | 6 |
| EEE3003 | Introduction to the Basics of Modern Power Electronics | 10 | 10 | | 6 |
| EEE3004* | Digital Signal Processing | 10 | 10 | | 6 |
| EEE3009* | Real Time and Embedded Systems | 10 | | 10 | 6 |
| EEE3013* | Image Processing and Machine Vision | 10 | | 10 | 6 |
| EEE3014* | Power System Operation | 10 | | 10 | 6 |
| EEE3015 | Telecommunication Networks | 10 | | 10 | 6 |
| EEE3016 | Photonics | 10 | | 10 | 6 |
| EEE3020 | Electronic Devices | 10 | 10 | | 6 |
| EEE3021 | Renewable Energy Systems and Smart Grids | 10 | | 10 | 6 |

Notes:

(i) *Modules marked * are recommended*

With the approval of the Degree Programme Director alternative optional modules to those listed above may be selected.

6. Assessment Methods

Details of the assessment pattern in each module are explained in the module outline. To satisfy IET accreditation requirements, a module comprising two assessment modes (coursework and examination) that assess different learning outcomes and each mode contributes more than 30% to the overall module mark, can only be passed if neither assessment mode is awarded a mark that is no more than 10% below the normal module pass mark.

7. Subject to University Approval: Compensation and Condonement

For students who started stage one from 2018/19, the Engineering Council's policy on compensation and condonement will apply to marks awarded for modules at all stages, to satisfy IET accreditation requirements. To be awarded an accredited honours degree, only a maximum of 30 credits can be compensated over the duration of the degree programme. Furthermore, the condonement policy does not allow the failure of any compulsory or optional module on the degree programme, where the final mark is 10 percentage points or more below the pass mark.

Any student not satisfying IET accreditation requirements, but satisfying University's Degree and Assessment regulations, will have the opportunity to be awarded a non-accredited honours degree with its classification based on the overall final stage averages beyond stage one.

8. Degree classification

Candidates will be assessed for degree classification on the basis of all the modules taken at Stages 2 and 3 with the weighting of the stages being 1:3 for Stage 2 and Stage 3 respectively.