Department of Electrical and Electronic Engineering

Scheme For The Award Of Honours

2015/16

B.Eng. in Electrical & Electronic Engineering (H600)

M.Eng. in Electrical & Electronic Engineering (H604)

M.Eng. in Electrical & Electronic Engineering with Management (H6N2)

M.Eng. in Electrical & Electronic Engineering with a Year Abroad (H601)
Introduction

This document sets out the assessment structure of degrees awarded in Electrical and Electronic Engineering, including the criteria for progression and the criteria for the honours classifications. The degrees are composed of Parts corresponding to the years of the course: four Parts for a MEng and three Parts for a BEng.

For candidates at the end of the degree programme, a decision is made on whether the candidate has passed and if so, what classification of honours is to be awarded. These decisions are made by a board of examiners which normally meets one week after the end of the summer term and is composed of all teaching staff involved with the degree programmes plus two external examiners appointed from other UK universities. The mitigating circumstances panel will give advice to the board of examiners on how mitigating circumstances, formally notified in advance by a candidate, is to be taken into consideration.

The award of honours is based on the following mark boundaries. These are the same boundaries as used for the grade letters for reporting examination marks throughout the degree programme.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Mark Boundaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>First class honours</td>
<td>A &gt; 70%</td>
</tr>
<tr>
<td>Second class honours (upper division)</td>
<td>70 &gt; B ≥ 60%</td>
</tr>
<tr>
<td>Second class honours (lower division)</td>
<td>60 &gt; C ≥ 50%</td>
</tr>
<tr>
<td>Third class honours</td>
<td>50 &gt; D ≥ 40%</td>
</tr>
<tr>
<td>Fail</td>
<td>40 &gt; E</td>
</tr>
</tbody>
</table>

Final marks are not divulged to students by assessors or the Board of Examiners. The Registrar will release the marks confirmed at Examiners’ Meetings to individual students in accordance with the procedures of Imperial College.

All marks are held in the database to full machine precision. Occasionally, and for display purposes only, the marks will be rounded up to 0, 1 or 2 decimal places. The final course overall mark will be calculated from the full-precision marks and not from the displayed marks. Note that marks for any examination, project, coursework, or other assessed work may be moderated (scaled up or down) if deemed appropriate by the relevant Board of Examiners. Standard formulae are used for moderation and are described in the student handbook. Marks gained at any other institution (such as during a year abroad) should be treated with particular caution as they are likely to be moderated before being incorporated into the overall results.

For candidates not in their final year, the board of examiners will make a decision on whether the candidate may progress to the next Part using the criteria set out later in this document. Mitigating circumstances, notified in advance, will be taken into account.

SQTs (1st and 2nd year only): If you are unsuccessful in any of your exams, it is possible, but not guaranteed, that you are allowed to resit. In the case of a marginal fail in one, or exceptionally two, modules, the examiners may set a supplementary qualifying test (SQT) to allow the candidate to reach the pass mark (40%) and progress to the next Part without delay. SQTs are held at the end of August/begin September.

In the final year for MEng and BEng, and the third year for MEng, individual course modules have no pass mark, and individual exams below 40% simply result in a lower module aggregate.

Resits: If you do not meet the progression requirements, you may be invited to withdraw from college and resit all exams the following summer. In this case, marks will not be capped at 40% and the achieved marks will count towards the final degree. We will contact you once your results have been formally agreed to discuss your options. In the case you fail your resit exams, no SQTs nor further resits will be offered and you will be required to withdraw from college.

Further information on assessment, mitigating circumstances, moderation of marks, the considerations undertaken by the board of examiners and the arrangements for resits and SQTs is available in the student handbook.

---

1. http://www3.imperial.ac.uk/electricalengineering/teaching/undergraduate/assessment
2. http://www3.imperial.ac.uk/registry/exams/resit
Degree Part Weightings and ECTS

These tables summarise how marks in the various parts are weighted when combined into a total for the degree programme and how ECTS\textsuperscript{iii} are allocated for each part. References to MEng apply equally to the Technical, Management and Year Abroad streams. MEng degrees which are not Bologna compliant on the basis of the content described here, may be made complaint through earning additional ECTS, as described in the student handbook\textsuperscript{iv}. From the 2013/14 intake onwards, year weightings are harmonised across all engineering degrees in the Faculty of Engineering.

<table>
<thead>
<tr>
<th>Weightings</th>
<th>Part I</th>
<th>Part II</th>
<th>Part III</th>
<th>Part IV</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEng from 2013 intake onwards</td>
<td>12.5%</td>
<td>37.5%</td>
<td>50%</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>BEng other</td>
<td>16.67%</td>
<td>33.33%</td>
<td>50%</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>MEng from 2013 intake onwards</td>
<td>11.1%</td>
<td>22.2%</td>
<td>22.2%</td>
<td>44.5%</td>
<td>100%</td>
</tr>
<tr>
<td>MEng other</td>
<td>12.5%</td>
<td>25%</td>
<td>25%</td>
<td>37.5%</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ECTS</th>
<th>Part I</th>
<th>Part II</th>
<th>Part III</th>
<th>Part IV</th>
<th>Total</th>
<th>Bologna Compliant</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEng</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td></td>
<td>180</td>
<td>Yes</td>
</tr>
<tr>
<td>MEng with Industrial Placement (IP)</td>
<td>60</td>
<td>60</td>
<td>48</td>
<td>60 + 42(IP)</td>
<td>270</td>
<td>Yes</td>
</tr>
<tr>
<td>MEng with Group Project (GP)</td>
<td>60</td>
<td>60</td>
<td>48</td>
<td>60 + 18(GP)</td>
<td>246</td>
<td>Only with extra ECTS</td>
</tr>
</tbody>
</table>

Note that in third and fourth year there can be some variation of the ECTS for some optional modules, notably those offered by another department, which can lead to an ECTS total slightly higher than those listed in the table.

\textsuperscript{iii} European Credit Transfer and Accumulation System - http://ec.europa.eu/education/ects/ects_en.htm
\textsuperscript{iv} http://www3.imperial.ac.uk/electricalengineering/teaching/undergraduate/ectsextracreditscheme1
## Part I: BEng and MEng

### Modules

<table>
<thead>
<tr>
<th>Term</th>
<th>Name</th>
<th>Weighting (%)</th>
<th>ECTS</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE1-1</td>
<td>Autumn Circuit Analysis</td>
<td>7.5</td>
<td>5</td>
<td>2-hour exam</td>
</tr>
<tr>
<td>EE1-2</td>
<td>Autumn Digital Electronics</td>
<td>7.5</td>
<td>5</td>
<td>2-hour exam</td>
</tr>
<tr>
<td>EE1-3</td>
<td>Autumn Semiconductor Devices</td>
<td>7.5</td>
<td>5</td>
<td>2-hour exam</td>
</tr>
<tr>
<td>EE1-4</td>
<td>Spring Analogue Electronics</td>
<td>7.5</td>
<td>5</td>
<td>2-hour exam</td>
</tr>
<tr>
<td>EE1-5</td>
<td>Spring Energy Conversion</td>
<td>7.5</td>
<td>5</td>
<td>2-hour exam</td>
</tr>
<tr>
<td>EE1-6</td>
<td>Spring Signals and Communications</td>
<td>7.5</td>
<td>5</td>
<td>2-hour exam</td>
</tr>
<tr>
<td>EE1-7</td>
<td>Autumn Software Engineering</td>
<td>7.5</td>
<td>5</td>
<td>Coursework</td>
</tr>
<tr>
<td>EE1-10</td>
<td>Autumn &amp; Spring Mathematics</td>
<td>15.0</td>
<td>10</td>
<td>Two 2-hour exams</td>
</tr>
<tr>
<td>EE1-13</td>
<td>Autumn &amp; Spring Professional Engineering</td>
<td>7.5</td>
<td>5</td>
<td>Coursework</td>
</tr>
</tbody>
</table>

**Total** 75.0 50

### Practical Work

<table>
<thead>
<tr>
<th>Term</th>
<th>Name</th>
<th>Weighting (%)</th>
<th>ECTS</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE1-LABE</td>
<td>Autumn &amp; Spring Electrical Laboratory</td>
<td>15.0</td>
<td>5</td>
<td>Reports, Oral Examinations, Logbooks, Computer Based Test</td>
</tr>
<tr>
<td>EE1-PRJ</td>
<td>Autumn, Spring &amp; Summer Group Design Project</td>
<td>10.0</td>
<td>5</td>
<td>Reports and Oral Examinations</td>
</tr>
</tbody>
</table>

**Total** 25.0 10

### Pass Mark and Progression Criteria

In order to progress to Part II, students are normally required to achieve the following minimum marks:

a) 40% in each of the examined modules listed above.

b) 40% in the aggregate of the practical work listed above.

For SQT and resit procedures: refer to page 2 of this document.
Part II: BEng and MEng

Modules

<table>
<thead>
<tr>
<th>Term</th>
<th>Name</th>
<th>Weighting (%)</th>
<th>ECTS</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE2-1</td>
<td>Autumn Digital Electronics II</td>
<td>6</td>
<td>4</td>
<td>2-hour hour exam</td>
</tr>
<tr>
<td>EE2-2</td>
<td>Autumn Analogue Electronics II</td>
<td>6</td>
<td>4</td>
<td>2-hour exam</td>
</tr>
<tr>
<td>EE2-3</td>
<td>Spring Power Engineering</td>
<td>6</td>
<td>4</td>
<td>2-hour exam</td>
</tr>
<tr>
<td>EE2-4</td>
<td>Spring Communications</td>
<td>6</td>
<td>4</td>
<td>2-hour exam</td>
</tr>
<tr>
<td>EE2-5</td>
<td>Autumn Signals and Linear Systems</td>
<td>6</td>
<td>4</td>
<td>2-hour exam</td>
</tr>
<tr>
<td>EE2-6</td>
<td>Spring Control Engineering</td>
<td>6</td>
<td>4</td>
<td>2-hour exam</td>
</tr>
<tr>
<td>EE2-8</td>
<td>Autumn Mathematics</td>
<td>14</td>
<td>8</td>
<td>Two 1.5-hour exams &amp; coursework</td>
</tr>
<tr>
<td>EE2-10</td>
<td>Spring Two Technical Options</td>
<td>8</td>
<td>6</td>
<td>Two 1.5-hour exams</td>
</tr>
<tr>
<td>EE2-18</td>
<td>Spring Algorithms and Data Structures</td>
<td>6</td>
<td>3</td>
<td>Coursework</td>
</tr>
<tr>
<td>EE2-19</td>
<td>Autumn Computer Architecture</td>
<td>6</td>
<td>3</td>
<td>Coursework</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>70</td>
<td>44</td>
<td></td>
</tr>
</tbody>
</table>

Practical Work

<table>
<thead>
<tr>
<th>Term</th>
<th>Name</th>
<th>Weighting (%)</th>
<th>ECTS</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE2-LABE</td>
<td>Autumn &amp; Spring Electrical Laboratory</td>
<td>16</td>
<td>8</td>
<td>Reports, Oral Examinations, Logbooks</td>
</tr>
<tr>
<td>EE2-LABC</td>
<td>Autumn &amp; Spring Computing Laboratory</td>
<td>6</td>
<td>4</td>
<td>Computer based tests</td>
</tr>
<tr>
<td>EE2-PRJ</td>
<td>Autumn &amp; Spring Group Design Project</td>
<td>8</td>
<td>4</td>
<td>Report and Presentation</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>30</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

Pass Mark and Progression Criteria

In order to progress to Part III of BEng, students are normally required to achieve the following minimum marks:

a) 40% in each of the examined modules listed above.

b) 40% in the aggregate of the practical work listed above.

Compensation*: 1 module (excluding maths) with a mark in the range 30% to 40% can be compensated (considered as a pass), if the exam aggregate is > 45%.

* http://www.theiet.org/academics/accreditation/policy-guidance/form_a_part2/5_3_progression_conditions.cfm
In order to progress to Part III of MEng, students are normally required to achieve the following minimum marks:

a) 40% in each of the examined modules listed above (excl. Maths).
b) 50% in mathematics.
c) 50% in the exam aggregate.
d) 40% in the aggregate of the practical work listed above.
e) No SQT (supplementary qualifying test).

Compensation: 1 module (excluding maths) with a mark in the range 30% to 40% can be compensated (considered as a pass), if the exam aggregate is > 50%.

In order to progress to Part III of MEng - year abroad, students are normally required to achieve the following minimum marks:

a) 40% in each of the examined modules listed above (excl. Maths).
b) 55% in mathematics.
c) 55% in the exam aggregate.
d) 55% in the aggregate of the practical work listed above.
e) No SQT (supplementary qualifying test).
f) No compensation

In addition, there may be a minimum level of language ability specified for placements in particular universities abroad appropriate to their teaching language\textsuperscript{vii}.

For SQT and resit procedures: refer to page 2 of this document.

In the case you fail your resit exams, no SQTs nor further resits will be offered and you will be required to withdraw from college.

\textsuperscript{vi} http://www.theiet.org/academics/accreditation/policy-guidance/form_a_part2/5_3_progression_conditions.cfm
\textsuperscript{vii} http://www.imperial.ac.uk/languages/year-in-europe/
Part III: BEng

Modules
Candidates must take 7 modules\(^{viii}\) subject to the following constraints:

- 4 autumn term modules chosen from the EEE module list.
- 2 spring term modules chosen from the EEE module list.
- 1 module from Imperial Horizons or the Business school.

Autumn term courses are assessed by written examination at the end of autumn term. Spring term courses are normally assessed through coursework and may include a short written paper at the end of spring term.

The aggregate mark for the modules is weighted as 65% of Part III.

Modules carry 6 ECTS each and as a group carry 42 ECTS.

Individual Project
Candidates will choose a final year project topic from a list or propose their own project in consultation with an academic member of staff, in the beginning of spring term. The Individual Project is weighted as 35% of Part III and carries 18 ECTS.

Final Assessment and Honours Classification
BEng Electrical & Electronic Engineering

To obtain an honours degree, a candidate must obtain at least 40% in Part III, normally by obtaining at least 40% in the individual project and in the module aggregate. There is no pass mark for individual modules, only for the module aggregate.

The marks from each Part are combined using the weightings defined on page 3 and the honours classification is based on the mark boundaries defined on page 2.

\(^{viii}\) [http://intranet.ee.ic.ac.uk/electricalengineering/eecourses/crslistug.asp?c=E3](http://intranet.ee.ic.ac.uk/electricalengineering/eecourses/crslistug.asp?c=E3)
Part III: MEng – All Streams

Modules

Candidates studying on the Technical or Year Abroad stream must take 8 modules\(^{\text{x}}\), subject to the following constraints:

- 4 autumn term modules chosen from the EEE module list.
- 3 spring term modules chosen from the EEE module list.
- 1 module from Imperial Horizons or the Business school.

Candidates studying on the Management stream must take 8 modules\(^{\text{x}}\), subject to the following constraints:

- 3 autumn term modules chosen from the EEE module list.
- 2 autumn term modules from the specified business module list (automatic enrolment)
- 2 spring term modules chosen from the EEE module list.
- 1 spring term module from the specified business module list (automatic enrolment)

Autumn term courses are assessed by written examination at the end of autumn term. Spring term courses are normally assessed through coursework and may include a short written paper at the end of spring term.

Modules carry 6 ECTS each and as a group carry 42 ECTS.

Pass Mark and Progression Criteria

In order to progress to Part IV of MEng, Technical or Year Abroad streams, candidates must achieve at least 40% in the Part III Aggregate. There is no pass mark for individual modules, only for the module aggregate.

In order to progress to Part IV of MEng Management stream, candidates must achieve at least 40% in the Part III EEE aggregate and 40% in the Part III Business modules aggregate. There is no pass mark for individual modules, only for the modules aggregate.

\(^{\text{x}}\) http://intranet.ee.ic.ac.uk/electricalengineering/eecourses/crslistug.asp?c=D3
\(^{\text{y}}\) http://intranet.ee.ic.ac.uk/electricalengineering/eecourses/crslistug.asp?c=D3
Part IV: MEng Electrical & Electronic Engineering

Technical stream

Group Project or Industrial Placement
Candidates will choose either a group project (summer term) or industrial placement (6 months) that commences after the spring term of the third year. Both are weighted at 16.67% of Part IV. The group project carries 18 ECTS and the industrial placement 42 ECTS.

Lecture Modules
Candidates on the Technical stream must choose a minimum of 7 modules, composed of 6 technical and 1 non-technical module and may choose an additional module (technical or non-technical) $^\text{xi}$.

The average module mark will be calculated according to the following formula:

$$ \text{Average} = \frac{\text{Sum of all Module Marks}}{(7 + \frac{1}{2}n_{\text{extra}})} $$

where $n_{\text{extra}}$ is the number of extra modules taken and equals 0 or 1.

The denominator of the average is the minimum number of modules (7) plus 0.5 if an extra course is taken. This formula can reward taking an extra course, but students should be aware that, if the extra workload reduces their performance across all of their modules, the overall mark may be lower. Students cannot opt out once course module registration is closed.

Modules will be assessed through coursework, or written examination or a combination of the two as laid down in the module description.

The average module mark is weighted as 50% of Part IV. The 6 technical modules carry 5 ECTS each; the Business/Humanities module carriers 6 ECTS; modules from other departments taken under IDX may have 5 or 6 ECTS. The 7-module minimum set will carry at least 36 ECTS but may be slightly higher depending on the modules taken. The additional module, if taken, will earn additional ECTS.

Project
Candidates will choose a final year project topic from a list or propose their own project in consultation with an academic member of staff, in the beginning of autumn term. The individual project is weighted as 33.33% of Part IV and carries 24 ECTS.

ECTS Total
The lecture modules plus project undertaken in the normal academic year (October to June) are designed to produce 60 ECTS. The group project (summer term of third year) or industrial placement (between the academic years) earn further ECTS raising the total for Part IV as a whole to either 60+18=78 or 60+42=102. The additional module may raise the total further.

Final Assessment and Honours Classification
MEng Electrical & Electronic Engineering – Technical stream

To obtain an honours degree, a candidate must obtain at least 40% in Part IV, normally by obtaining at least 40% in each of the elements: group project or industrial placement, module aggregate and individual project. For the technical stream only: there is no pass mark for individual modules, only for the module aggregate.

The marks from each Part are combined using the weightings defined on page 3 and the honours classification is bases on the mark boundaries defined on page 2.

---

$^\text{xi}$ http://intranet.ee.ic.ac.uk/electricalengineering/eecourses/crslistug.asp?c=T4
Part IV: MEng Electrical & Electronic Engineering

Management stream

Group Project or Industrial Placement
Candidates will choose either a group project (summer term) or industrial placement (6 months) that commences after the spring term of third year. Both are weighted at 16.67% of Part IV. The group project carries 18 ECTS and the industrial placement 42 ECTS.

Lecture Modules
Candidates on the Management stream must take 3 compulsory specified business modules (2 autumn and 1 spring term: automatic enrolment), must choose 4 technical modules and may choose an additional module (technical or non-technical) \( x_{ii} \).

The average module mark will be calculated according to the following formula:

\[
\text{Average} = \frac{\text{Sum of all Module Marks}}{7 + \frac{1}{2} n_{\text{extra}}}
\]

where \( n_{\text{extra}} \) is the number of extra modules taken and equals 0 or 1.

The denominator of the average is the minimum number of modules (7) plus 0.5 if an extra course is taken. This formula can reward taking an extra course, but students should be aware that, if the extra workload reduces their performance across all of their modules, the overall mark may be lower. Students cannot opt out once course module registration is closed.

Modules will be assessed through coursework or written examination or combination of the two as laid down in the module description.

The average examination mark is weighted as 50% of Part IV. Technical modules with an EE4 code carry 5 ECTS each and those with an EE3 code carry 6 ECTS each. Business/Humanities modules carry 6 ECTS. The modules as a set will earn at least 36 ECTS but may be slightly higher depending on the modules chosen. The additional module, if taken, will earn additional ECTS.

Project
Candidates will choose a final year project topic from a list or propose their own project in consultation with an academic member of staff, in the beginning of autumn term. The individual project is weighted as 33.33% of Part IV and carries 24 ECTS.

ECTS Total
The lecture modules plus project undertaken in the normal academic year (October to June) are designed to produce at least 60 ECTS. The combination of technical and non-technical modules of slightly different ECTS values may lead to totals above 60 ECTS. The group project (summer term of third year) or industrial placement (between the academic years) earns further ECTS raising the total for Part IV as whole to at least either 60+18=78 or 60+42=102. The additional module may raise the total further.

Final Assessment and Honours Classification

MEng Electrical & Electronic Engineering – Management stream

To obtain an honours degree, a candidate must obtain at least 40% in Part IV, normally by obtaining at least 40% in each of the elements: group project or industrial placement, module aggregate and individual project. For the technical stream only: there is no pass mark for individual modules, only for the module aggregate.

The marks from each Part are combined using the weightings defined on page 3 and the honours classification is bases on the mark boundaries defined on page 2.

\( x_{ii} \) http://intranet.ee.ic.ac.uk/electricalengineering/eecourses/crslistug.asp?c=D4
Part IV: MEng Electrical & Electronic Engineering
Year Abroad stream

**Group Project or Industrial Placement**
Candidates will choose either a group project (summer term) or industrial placement (6 months) that commences after the spring term of third year. Both are weighted at 16.67% of Part IV. The group project carries 18 ECTS and the industrial placement 42 ECTS. Candidates are advised that in some cases the early autumn term start date in the host university might prevent an industrial placement.

**University Abroad**
Candidates must take a programme of examined modules selected from the courses offered by the overseas university equivalent to five modules from the Electronic and Engineering fourth year. In addition, candidates must complete a dissertation and an individual project. The selection of examined modules is to be approved in each case by the Course Director.

Assessment is based on a written report in the language of study and an oral presentation of the project work in English. The project mark awarded will be determined by the Board of Examiners taking into account the marks awarded by the overseas university together with any supporting written comments.

The ECTS points gained during the year abroad will depend on the programme of work agreed with the host university and will be assessed as follows on their work in the host university.

The table below present the weighting of the elements of the Year Abroad.

<table>
<thead>
<tr>
<th>Description</th>
<th>Location</th>
<th>Weighting within studies abroad</th>
<th>Weighting within Part IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Placement or Group Project</td>
<td>Company or Imperial College</td>
<td>Not applicable</td>
<td>16.67%</td>
</tr>
<tr>
<td>Registered Modules</td>
<td>Host Institution</td>
<td>40%</td>
<td>33.33%</td>
</tr>
<tr>
<td>Individual Project</td>
<td>Host Institution</td>
<td>40%</td>
<td>33.33%</td>
</tr>
<tr>
<td>Dissertation</td>
<td>Host Institution</td>
<td>20%</td>
<td>16.67%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Host Institution</td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**Final Assessment and Honours Classification**

**MEng Electrical & Electronic Engineering – Year Abroad stream**

To obtain an honours degree, a candidate must obtain at least 40% in Part IV, normally by obtaining at least 40% in each of the elements: group project or industrial placement, module aggregate and individual project. For the technical stream only: there is no pass mark for individual modules, only for the module aggregate.

The marks from each Part are combined using the weightings defined on page 3 and the honours classification is bases on the mark boundaries defined on page 2.