Department of Electrical and Electronic Engineering

Scheme For The Award Of Honours

Academic Year 2018/19

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)

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1 Main changes since 2015-16 include:
ECTS credits per module in the 4th year have been updated to reflect the study equivalent of the module.
The year weightings have been adapted and are now in line with the FoE.
The results of the 3rd year Group projects (GP) and Industrial placement (IP) are allocated to the 3rd year and
their weighting within the year is adapted to maintain their average weight within the degree.
Progression for the students doing the IP will be decided at the September examiners meeting.
Note that the cohort graduating at the end of this academic year will be the first to follow the changes above.
Change of the ECTS allocated to the BEng project to reflect a full term’s work.
Change to the weighting of the final year project in the MEng stream.
Guidelines on maximum number of year 3 modules allowed to 4th year students.
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.

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 Range</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 &gt; 60%</td>
</tr>
<tr>
<td>Second class honours (lower division)</td>
<td>60 &gt; C &gt; 50%</td>
</tr>
<tr>
<td>Third class honours</td>
<td>50 &gt; D &gt; 40%</td>
</tr>
<tr>
<td>Fail</td>
<td>40 &gt; E</td>
</tr>
</tbody>
</table>

The Registrar will release the marks confirmed at the Examiners' Meeting to individual students in accordance with the procedures of Imperial College.

Moderation and calculation of final marks

All marks are held in the database to full machine precision. Occasionally, and for display purposes only, the marks will be rounded up. 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 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.

Graduating students

For candidates at the end of the degree programme, a decision is made during the examiners' meeting on whether the candidate has passed and if so, what classification of honours is to be awarded. The board of examiners normally meets one week after the end of the summer term and is composed of all teaching staff involved with the degree programmes plus four external examiners appointed from other UK universities.

Degree classification will be discussed anonymously down to 2.5% from the degree boundary. In case mitigating circumstances are recorded, discussion will happen within 5% range from the degree boundary. The decisions are informed by e.g. tutor and supervisor reports from all years of study. The mitigating circumstances panel will give advice to the board of examiners on how mitigating circumstances, formally notified in advance by a candidate, are to be taken into consideration.

Other students

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 in the progression decisions but will not change the marks obtained during the year.

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 you to reach the pass mark (40%) and progress to the next Part without delay. SQTs are held at the end of August/early September.

Resits: If you do not meet the progression requirements, you may be invited to temporarily leave the college and resit all exams the following summer. In this case, marks will not be capped at 40% and the fresh marks will count towards the final degree. We will contact you after the examiners’ meeting to discuss your options. If you fail your resit exams, no SQTs nor further resits will be offered and you will be required to withdraw from college.

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2 http://www3.imperial.ac.uk/electricalengineering/teaching/undergraduate/assessment
3 http://www3.imperial.ac.uk/registry/exams/resit
4 This means that you will not be registered as a student for the autumn and the spring term (thus you are not in attendance). You will be expected back in the summer term for the revision lectures and the exams.
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.

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.
**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\(^5\) are allocated for each Part. References to MEng apply equally to the Technical, Management and Year Abroad streams. Additional ECTS can be earned as described in the student handbook\(^6\). 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</td>
<td>12.5%</td>
<td>37.5%</td>
<td>50%</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>MEng</td>
<td>11.1%</td>
<td>22.2%</td>
<td>33.3%</td>
<td>33.4%</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(^7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEng</td>
<td>60</td>
<td>60</td>
<td>66</td>
<td></td>
<td>186</td>
<td>Yes</td>
</tr>
<tr>
<td>MEng with Industrial Placement (IP)</td>
<td>60</td>
<td>60</td>
<td>90</td>
<td>66</td>
<td>276</td>
<td>Yes</td>
</tr>
<tr>
<td>MEng with Group Project (GP)</td>
<td>60</td>
<td>60</td>
<td>66</td>
<td>66</td>
<td>252</td>
<td>No, another 18 ECTS are needed(^8)</td>
</tr>
</tbody>
</table>

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

1 ECTS is equivalent to 25-30 hrs of study (incl. lectures, study groups, classes, tutorials, labs and self-study).

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\(^5\) European Credit Transfer and Accumulation System - [http://ec.europa.eu/education/ects/ects_en.htm](http://ec.europa.eu/education/ects/ects_en.htm)

\(^6\) [http://www3.imperial.ac.uk/electricalengineering/teaching/undergraduate/ectsextracreditscheme1](http://www3.imperial.ac.uk/electricalengineering/teaching/undergraduate/ectsextracreditscheme1)

\(^7\) [http://www.imperial.ac.uk/electrical-engineering/study/current-students-course-handbook/ects/](http://www.imperial.ac.uk/electrical-engineering/study/current-students-course-handbook/ects/)

\(^8\) Additional ECTS can be obtained by e.g. assessed UROP projects.
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>EE1-5</td>
<td>Autumn Energy Conversion</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>EE1-3</td>
<td>Spring 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>EE1-6</td>
<td>Spring Signals and Communications</td>
<td>7.5</td>
<td>5</td>
<td>2-hour exam</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 Engineering Design and Practice</td>
<td>7.5</td>
<td>5</td>
<td>Coursework</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Total</strong></td>
<td><strong>75.0</strong></td>
<td><strong>50</strong></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>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>
<tr>
<td><strong>Total</strong></td>
<td><strong>Total</strong></td>
<td><strong>25.0</strong></td>
<td><strong>10</strong></td>
<td></td>
</tr>
</tbody>
</table>

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 modules listed above.
b) 40% in each of the practical work components 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 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>EE2-5</td>
<td>Autumn Signals and Linear Systems</td>
<td>6</td>
<td>4</td>
<td>2-hour exam</td>
</tr>
<tr>
<td>EE2-19</td>
<td>Autumn Computer Architecture</td>
<td>9</td>
<td>5</td>
<td>Computer based tests &amp; Coursework</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>EE2-6</td>
<td>Spring Control Engineering</td>
<td>6</td>
<td>4</td>
<td>2-hour exam</td>
</tr>
<tr>
<td>EE2-10</td>
<td>Spring Two Technical Options (chosen from Devices, Fields, Algorithms &amp; Complexity)</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>9</td>
<td>5</td>
<td>Computer based tests &amp; Coursework</td>
</tr>
<tr>
<td>EE2-8</td>
<td>Autumn &amp; Spring Mathematics</td>
<td>14</td>
<td>8</td>
<td>Two 1.5-hour exams &amp; coursework</td>
</tr>
</tbody>
</table>

**Total** 76 48

### 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</td>
<td>16</td>
<td>8</td>
<td>Reports, Oral Examinations, Logbooks</td>
</tr>
<tr>
<td>EE2-PRJ</td>
<td>Autumn &amp; Spring</td>
<td>8</td>
<td>4</td>
<td>Report and Presentation</td>
</tr>
</tbody>
</table>

**Total** 24 12

### Pass Mark and Progression Criteria

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

a) 40% in each of the modules listed above (see note on compensation).

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

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

a) 50% in mathematics.

b) 50% in the module total.

c) No module/practical component mark below 40% (see note on compensation).
Compensation: 1 module (excluding maths and practical components) with a mark in the range 30% to 40% can be compensated (considered as a pass), if the exam aggregate is > 45%.

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

- a) 55% in mathematics.
- b) 55% in the module total.
- c) No module/practical component mark below 40%.
- d) 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.

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

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

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9 http://www.theiet.org/academics/accreditation/policy-guidance/form_a_part2/5_3_progression_conditions.cfm
10 http://www.imperial.ac.uk/languages/year-in-europe/
Part III: BEng

Modules
Candidates must take 7 modules\(^\text{11}\) 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\(^\text{12}\).

Autumn term modules are assessed by written examination at the end of autumn term. Spring term modules 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.

EEE modules carry 6 ECTS each. Modules from other departments may carry different ECTS. The group of Part III modules carries minimum 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 24 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 both the individual project and 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.

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\(^{11}\) http://intranet.ee.ic.ac.uk/electricalengineering/eecourses/crslistug.asp?c=E3
\(^{12}\) EEE students have to take on-line modules where they are available.
Part III: MEng – All Streams

Modules

Candidates studying on the **Technical or Year Abroad stream** must take 8 modules\(^{13}\), 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\(^{14}\), 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 or oral examination at the end of spring term.

On-line business modules should be taken where available. Management stream students will be automatically registered for the required business modules.

EE modules carry 6 ECTS each. Modules from other departments might carry different ECTS. The group of Part III modules carries minimum 48 ECTS.

The aggregate mark for the modules is weighted as 77% of Part III.

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. Note that students who are on the year abroad scheme must find information on the start date of the 1\(^{st}\) term of the 4\(^{th}\) year in the host university before committing to an IP. Project and placement marks will be based on reports. Both are weighted at 23%. The group project carries 18 ECTS and the industrial placement 42 ECTS.

Pass Mark and Progression Criteria

In order to progress to Part IV of the 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 aggregates. In addition, candidates must achieve at least 40% in the group project/industrial placement.

In order to progress to Part IV of the 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 module aggregates. In addition, candidates must achieve at least 40% in the group project/industrial placement.

\(^{13}\) [http://intranet.ee.ic.ac.uk/electricalengineering/eecourses/crslistug.asp?c=D3]

\(^{14}\) [http://intranet.ee.ic.ac.uk/electricalengineering/eecourses/crslistug.asp?c=D3]
Part IV: MEng Electrical & Electronic Engineering

Technical stream

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 8\textsuperscript{th} module (technical or non-technical\textsuperscript{15}). The number of modules that can be chosen from part III is restricted to 1.

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

$$\text{average} = \frac{\text{sum of all module marks}}{7 + \frac{n_{\text{extra}}}{2}}$$

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 your performance across all of your modules, the overall mark might 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 60\% of Part IV.

The 6 technical modules carry 6 ECTS each. Modules from other departments (business school, horizons and IDX) may carry 6 or 7.5 ECTS. The 6-technical module minimum set will carry at least 36 ECTS. The total ECTS may depend 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 40\% of Part IV and carries 24 ECTS.

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: EEE module aggregates and individual project. There is no pass mark for individual modules, only for the module aggregates.

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.

\textsuperscript{15} \texttt{http://intranet.ee.ic.ac.uk/electricalengineering/eecourses/crslistug.asp?c=T4}

Non-technical modules are those offered by the Business school and Horizons.
Part IV: MEng Electrical & Electronic Engineering
Management stream

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)\(^\text{16}\). The number of modules chosen from part III is restricted to 2.

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

\[
\text{Average} = \frac{\text{Sum of all Module Marks}}{7 + 0.5n_{\text{extra}}}
\]

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 module mark is weighted as 60% of Part IV.

The technical modules carry 6 ECTS each. Modules from other departments (business school, horizons and IDX) may carry 6 or 7.5 ECTS. The total ECTS may depend 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 40% of Part IV and carries 24 ECTS.

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: EEE module aggregates, Business module aggregates and individual project. There is no pass mark for individual modules, only for the module aggregates.

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.

\(^{16}\) [http://intranet.ee.ic.ac.uk/electricalengineering/eeecourses/crslistug.asp?c=D4](http://intranet.ee.ic.ac.uk/electricalengineering/eeecourses/crslistug.asp?c=D4)

Non-technical modules are those offered by the Business school or Horizons
Part IV: MEng Electrical & Electronic Engineering
Year Abroad stream

University Aboard
Candidates in the 4th year will only be allowed on the year abroad programme after interview with the department’s Year Abroad Course Director in the 3rd year. Note that start dates in guest universities can be in conflict with end dates of Industrial Placements. Students are required to ensure no clashes occur when choosing an industrial placement as well as a year abroad.

Candidates must take a programme of examined modules selected from the courses offered by the overseas university equivalent to five modules from the Electrical and Electronic 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 Year Abroad 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.

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>Registered Modules</td>
<td>Host Institution</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Individual Project</td>
<td>Host Institution</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Dissertation</td>
<td>Host Institution</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>Host Institution</td>
<td>100%</td>
<td>100%</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 the module aggregates and at least 40% in the individual project.

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.