**Programme Specification**

**Postgraduate**

Applicable to postgraduate programmes

Please click [here](#) for guidance on completing this specification template.

### Part A: Programme Summary Information

1. **Title of programme:** Microelectronics systems with a year in industry
2. **Programme Code:** EEMI
3. **Entry Award(s):**
   - MA
   - MSc: 240 credits, Level 7 and 6 (up to 30 credits)
   - PGDip
   - PGCert
   - DPS
   - CPS
   - Other (please specify below: )

4. **Exit Awards:**
   - PGDip: 120 credits, Level 7 and 6 (up to 30 credits)
   - PGCert: 60 credits, Level 7 and 6 (up to 15 credits)
   - CPS

Exit awards will automatically bear the name of the entry award. If an exit award is to be unnamed (i.e. it will show only the qualification achieved) or if it is to have a different name from the entry qualification you must indicate this below:

- PGDip: Microelectronics Systems (with or without year in industry depending on whether industrial placement has been completed)
- PGCert: Microelectronic Systems

5. **Date of first intake:** Sept 2015
6. **Frequency of intake:** Annually in September

7. **Duration and mode of study:** FT2

8. **Applicable framework:** University framework for Full time and Part time Postgraduate Programmes

   **Framework exemption required:**
   - ☒ No (please go to section 9)
   - ☐ Yes (please provide a brief summary below)

   To allow the programme to be delivered over 21 months rather than 18.

   **Date exemption approved by AQSC:** 9th September 2015

9. **Applicable Ordinance:** General Ordinance for the Modular Mater’s Degrees, Postgraduate Diplomas and Postgraduate Certificates.

   **New/revised Ordinance required:**
   - ☒ No (please go to section 10)
   - ☐ Yes (please provide a brief summary below)

10. **Faculty:** Science and Engineering

11. **Level 2 School/Institute:** School of Electrical Engineering, Electronics, and Computer Science

12. **Level 1 unit:** Dept of Electrical Engineering & Electronics

13. **Campus:** Liverpool

14. **Other contributors from UoL:** None

15. **Teaching other than at UoL:** None

16. **Director of Studies:** Professor Yi Huang

17. **Board of Studies:** Electrical Engineering & Electronics (PG)

18. **Board of Examiners:** Electrical Engineering & Electronics (PG)

19. **External Examiner(s):**
   - Name: Professor P Gardner, University of Birmingham
   - Institution: Professor G. Chen, University of Southampton
   - Position:
### 20. **Professional, Statutory or Regulatory body:**
The Institute of Engineering & Technology (IET)

### 21. **QAA Subject benchmark Statements(s):**

### 22. **Other reference points:**

### 23. **Fees:**
The tuition fees for the 2-year programme are the same as the standard 1-year MSc programme since the taught modules are the same and the year in industry is equivalent to the summer project for the 1-year MSc programme.
http://www.liv.ac.uk/study/postgraduate/finance/#tuition-fees

### 24. **Additional costs to the student:**
The student would be expected to be paid a salary during their industrial placement. However, the student would be responsible for any additional costs such as associated with obtaining an industrial placement and relocation.

### 25. **AQSC approval:**

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### Part B: Programme Aims & Objectives

#### 26. **Aims of the Programme**

The Microelectronics Systems M.Sc. programme described in this document builds upon the Department’s well established Microelectronic Systems and Telecommunications M.Sc. Programme. The primary aim of this programme is to provide graduates who already have a good general level of knowledge and understanding in electronics or closely related subjects (that is recent electronics Computer Science programmes, etc) with advanced knowledge (at level M) and capabilities in the specific areas of microelectronic systems. In addition we aim to produce postgraduates with wider transferable skills (communication, organisational awareness, project management etc.) who are able to meet the needs of a wide range of employers both inside and outside the electronics sector. We also aim to provide an intellectually stimulating, rigorous and rewarding experience for our students.

The programme duration is 2 years, which is longer than the standard UK MSc - this is to meet the demand from some major countries for our MSc such as India and China. It will offer the student opportunities to undertake the MSc project in industry (not limited in the UK). It is intended that students will be better prepared for the industry once graduated.

**No.**  **Aim: To develop in students:**

<table>
<thead>
<tr>
<th>No.</th>
<th>Aim: To develop in students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To develop ability in designing complex digital and analogue systems.</td>
</tr>
<tr>
<td>2</td>
<td>To gain in-depth understanding of the tools used for the design and simulation of these complex systems.</td>
</tr>
<tr>
<td>3</td>
<td>To develop the techniques used for the networking of digital systems.</td>
</tr>
<tr>
<td>4</td>
<td>Knowledge and skills in software engineering, design and management.</td>
</tr>
<tr>
<td>5</td>
<td>Transferable skills such as analysis, problem solving, communications and team-working. Also to gain work experience in an industrial environment.</td>
</tr>
</tbody>
</table>
### Learning Outcomes

#### No. Learning outcomes – Master’s degree

1. A comprehensive and in-depth knowledge and understanding of the electronics and electronic systems.

2. Advanced knowledge (at level M) and capabilities in specific areas of microelectronic systems.

3. A range of design and wide transferable skills to meet the needs of a wide range of employers both inside and outside the microelectronics sector.

4. Very good research and project management skills.

#### Learning outcomes – Postgraduate Diploma

1. A range of knowledge and understanding of the electronics and electronic systems.

2. In-depth knowledge and capabilities in specific areas of microelectronic systems.

3. Good design and wide transferable skills to meet the needs of a wide range of employers both inside and outside the microelectronics sector.

4. Reasonable research and project management skills.

#### Learning outcomes – Postgraduate Certificate

1. Knowledge and understanding of the electronics and electronic systems.

2. Knowledge (at advanced level) and capabilities in specific areas of microelectronic systems.

3. Some design and transferable skills to meet the needs of a wide range of employers both inside and outside the microelectronics sector.

4. Some research and project management skills.

### Mapping of subject-based learning outcomes:

<table>
<thead>
<tr>
<th>Learning outcome No.</th>
<th>Module(s) in which this will be delivered</th>
<th>Mode of assessing achievement of learning outcome</th>
<th>PSRB/Subject benchmark statement (if applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ELEC472 (Integrated circuits), ELEC473 (Digital system design), ELEC483 (Research skills and project managements), ELEC470 (Advanced embedded computer sys), ELEC431 (software engineering and programming), ELEC422</td>
<td>Course work, oral presentation (499 and 483), examination (472, 470), report and thesis (498 and 499).</td>
<td></td>
</tr>
</tbody>
</table>
### 28. Skills and Other Attributes

<table>
<thead>
<tr>
<th>No.</th>
<th>Skills and attributes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Demonstrating the ability to learn a new subject and apply the theory and knowledge to solve engineering and related problems.</td>
</tr>
<tr>
<td>2</td>
<td>Researching for, selecting and applying appropriate principles and methodologies (including calculation) to solving engineering and relevant problems.</td>
</tr>
<tr>
<td>3</td>
<td>Recognising the applicability limitations of the principles, models, analyses and methodologies used.</td>
</tr>
<tr>
<td>4</td>
<td>Designing a system, component or process based on initial requirements and constraints; analysing, evaluating and enhancing a design.</td>
</tr>
<tr>
<td>5</td>
<td>Analysing and interpreting information and data, drawing conclusions, and ability to explore applications and further research.</td>
</tr>
<tr>
<td>6</td>
<td>Effective communications using both written and oral presentation to specialists and non-specialists on engineering problems, solutions and results.</td>
</tr>
<tr>
<td>7</td>
<td>Effective and efficient use of IT tools systems and in the creation and use of software for modelling, analysis, simulation and design.</td>
</tr>
<tr>
<td>8</td>
<td>Ability in carrying out laboratory experiments, using test and measurement equipment and techniques, collecting and recording data, estimating accuracy, assessing errors and risks, using safe systems of work.</td>
</tr>
<tr>
<td>9</td>
<td>Effective management of resources and time and ability to work with other people.</td>
</tr>
</tbody>
</table>

### 28a. Mapping of skills and other attributes:

<table>
<thead>
<tr>
<th>Skills and other attributes No.</th>
<th>Module(s) in which this will be delivered and assessed</th>
<th>Learning skills, research skills, employability skills</th>
<th>Mode of assessing achievement of the skill or other attribute</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ELEC472, ELEC473, ELEC483, ELEC470, ELEC431, ELEC422, ELEC499, ELEC498</td>
<td>Learning skills (L) Research skills (R) Employability skills (E)</td>
<td>Through, exam, assignment, oral presentation, design, exercises, project, poster and thesis.</td>
</tr>
<tr>
<td>2</td>
<td>ELEC472, ELEC473, ELEC483, ELEC470, ELEC431, ELEC422, ELEC499, ELEC498</td>
<td>L, R, E</td>
<td>Through, exam, assignment, oral presentation, design, exercises, project, poster and thesis.</td>
</tr>
</tbody>
</table>
### Part C: Entrance Requirements

#### 29 Career opportunities:

**Career Opportunities:**
The main career opportunities for graduates from this programme are in:

- companies related to energy and power systems;
- companies utilising the latest technology to deal with energy and power problems at relatively high technical levels;
- companies and government agencies using managing energy and power aspects;
- universities for further education, such as study for PhD degree.

#### 30 Academic Requirements:

The normal entry requirement is a UK 2.1 Honours degree or better in a related subject (such as Electrical and Electronics Engineering, Physics) from an accepted University or other Institute of Higher Education. Alternative qualifications and all non-UK qualifications which are equivalent to a UK science- or engineering-based honours degree may also be considered. In some cases, a good UK 2.2 honours degree may be considered if strong performance in relevant subject is demonstrated or the applicant has relevant industrial experience.
The students both from the UK and overseas, are expected to be able to demonstrate proficiency in English, normally demonstrated by holding a satisfactory English language qualification.

For students whose first language is not English, the University’s minimum requirements are the IELTS test with a minimum overall score of 6.5, and no less than 5.5 in each of the sub-tests (reading, writing, speaking and listening).

Full details of the University’s English language requirements and tests which satisfy our entry requirements may be found on our website at: www.liv.ac.uk/study/international/countries/english-language/.

### 31 Work experience:
- Applicants who have a degree qualification that is considered to be of a standard below that equivalent to a UK 2.1 Honours degree may be admitted if they hold an appropriate engineering qualification together with industrial experience.

### 32 Other requirements:
- None
**Year 1**

*Required modules (90 credits):*

<table>
<thead>
<tr>
<th>Module Code</th>
<th>Module Name</th>
<th>Credit Value</th>
<th>Level</th>
<th>Semester</th>
<th>Exam:CW</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEC472</td>
<td>Integrated Circuits – Concepts and Design</td>
<td>15</td>
<td>7</td>
<td>1+2</td>
<td>45:55</td>
</tr>
<tr>
<td>ELEC473</td>
<td>Digital System Design</td>
<td>15</td>
<td>7</td>
<td>1+2</td>
<td>0:100</td>
</tr>
<tr>
<td>ELEC470</td>
<td>Advanced Embedded Computer Systems</td>
<td>15</td>
<td>7</td>
<td>1+2</td>
<td>85:15</td>
</tr>
<tr>
<td>ELEC483</td>
<td>Research Skills and Project Management</td>
<td>15</td>
<td>7</td>
<td>1+2</td>
<td>0:100</td>
</tr>
<tr>
<td>ELEC431</td>
<td>Software Engineering and Programming</td>
<td>15</td>
<td>7</td>
<td>1</td>
<td>0:100</td>
</tr>
<tr>
<td>ELEC422</td>
<td>Microprocessor Systems</td>
<td>15</td>
<td>7</td>
<td>2</td>
<td>0:100</td>
</tr>
</tbody>
</table>

*Options totalling 30 credits from list below: At least 7.5 optional credits must be completed in semester 2*

<table>
<thead>
<tr>
<th>Module Code</th>
<th>Module Name</th>
<th>Credit Value</th>
<th>Level</th>
<th>Semester</th>
<th>Exam:CW</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP327</td>
<td>Mobile Computing</td>
<td>15</td>
<td>6</td>
<td>1</td>
<td>60:40</td>
</tr>
<tr>
<td>ELEC319</td>
<td>Image Processing</td>
<td>7.5</td>
<td>6</td>
<td>1</td>
<td>100:0</td>
</tr>
<tr>
<td>COMP528</td>
<td>Multi-Core and Multi-Processor Programming</td>
<td>15</td>
<td>7</td>
<td>1</td>
<td>60:40</td>
</tr>
<tr>
<td>ELEC415</td>
<td>Information Theory and Coding</td>
<td>7.5</td>
<td>7</td>
<td>2</td>
<td>100:0</td>
</tr>
<tr>
<td>ELEC461</td>
<td>Communication Networks and Security</td>
<td>15</td>
<td>7</td>
<td>2</td>
<td>100:0</td>
</tr>
<tr>
<td>ELEC382</td>
<td>Electromagnetic Compatibility</td>
<td>7.5</td>
<td>6</td>
<td>2</td>
<td>100:0</td>
</tr>
</tbody>
</table>

**Year 2**

<table>
<thead>
<tr>
<th>Module Code</th>
<th>Module Name</th>
<th>Credit Value</th>
<th>Level</th>
<th>Semester</th>
<th>Exam:CW</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEC498</td>
<td>MSc Placement Experience</td>
<td>60</td>
<td>7</td>
<td>1+2</td>
<td>0:100</td>
</tr>
<tr>
<td>ELEC499</td>
<td>MSc Industrial Project</td>
<td>60</td>
<td>7</td>
<td>1+2</td>
<td>0:100</td>
</tr>
</tbody>
</table>

**34. Industrial placement/work placement/year abroad:**

Preparation for the year in industry will begin in Year 1 through ELEC483 “Research Skills and Project Management” which is a 15 credit module. During the placement which is a 30-week minimum placement, the student should complete two-60 credit modules: an MSc Placement Experience module ELEC498 and an industrial MSc Industrial Project ELEC499. In order to receive the MSc degree, the student should pass both modules. ELEC498 is a pass/fail module and will not contribute to the MSc degree classification and cannot be considered as a PG Dip or PG Cert module since its emphasis is on gaining industrial experience while ELEC499 is focused on doing an industrial research project and it will be chosen by the student by the end of semester 2. In case a student is not able to find a placement by the end of semester 2 or fails to complete the industrial placement, the student will be able to transfer to the standard version of the programme and commence a new project at the University.

The placement and project will take place from an agreed starting date (typically Sept,
an earlier date is acceptable) to next May in an appropriate industrial engineering environment e.g. electronics company, electrical utility company, engineering consultancy, etc. The department will have a dedicated advisor working with Careers and Employability Services to assist students in gaining a placement. If a student has failed to find a placement and project, the student will be converted to the standard one-year MSc.

All such placements and the project work to be carried out will be expected to be agreed by the students and industrial placement partners, and approved by the MSc Programme Director. Each student on placement will have an industrial supervisor in the company and an academic supervisor within the Department. A dedicated liaison advisor/coordinator will be appointed by the School/Department.

The supervisor at the University, working with the industrial supervisor, will be responsible for the assessment of the placement and the project modules. For the project module, it includes the interim report (35% in Jan), an oral presentation (15% in May), and the final report (50% in May). For the placement experience module, it will be assessed by a portfolio containing a number of documents as specified in ELEC498 module document.

### 35. Liaison between the Level 2 Schools/Institutes involved:

All teaching is provided by the School of Electrical Engineering, Electronics and Computer Science.

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### Part E: Learning, Teaching and Assessment Strategies

#### 36. Learning, Teaching and Assessment Strategies:

*Subject-specific Practical Skills* are developed after the associated knowledge has been acquired; development is achieved through practice working on exercises in supervised classes and through peer-learning and private study:

- through maths, analytical manufacturing, engineering and management problems
- through IT and design exercises
- through laboratory work.

This programme complies with the University’s Code of Practice on Assessment [http://www.liv.ac.uk/tqsd/code-of-practice-on-assessment/](http://www.liv.ac.uk/tqsd/code-of-practice-on-assessment/)

and with the Department’s Learning and Teaching Strategy found in Section 4.2 of the [Dept of EEE Student Handbook](https://www.liv.ac.uk/intranet/eee/handbooks/)

#### 36a. Learning, Teaching and Assessment methods:

Most teaching and assessment is by traditional methodologies which are carried out by academic staff and University-recognised teachers; experimental officers, research staff and trained postgraduate students undertake some teaching (particularly laboratory classes) under the supervision of academic staff. Knowledge and skills are acquired through active participation in the following activities, followed by private study:

- Lectures (both conventional and newly introduced inter-active), academic tutorials, problem classes and seminars taking place during weekly one- or two-hour time-table slots in lecture theatres/teaching rooms.
- Design and computing classes taking place during weekly one-, two- or three-hour time-table slots in design and computing rooms (students working individually or in pairs or groups).
- Laboratory classes taking place in two- or three-hour time-table slots in
engineering laboratories.

- Projects (students working individually or (less usually) in pairs) under the supervision of a member of staff (weekly tutorials). This is a very important part of the MSc programme and the student is expected to solve a challenge problem independently.
- Invited seminars and lectures given by people from industry as well as some site visits – this is a relatively unique feature of this practice programme.

Assessment will be conducted by a combination of various forms which include examinations, bench inspection, report, oral presentation and thesis/dissertation.

37. Assessment information for students:

**Code of Practice on Assessment**

The University has a Code of Practice on Assessment which brings together the main institutional policies and rules on assessment. The Code is an authoritative statement of the philosophy and principles underlying all assessment activities and of the University's expectations in relation to how academic subjects design, implement and review assessment strategies for all taught programmes of study.

The Code of Practice includes a number of Appendices which provide more detail on the regulations and rules that govern assessment activity; these include:

- The University marks scale, marking descriptors and qualification descriptors;
- The framework for modular, postgraduate programmes;
- Information about students’ progress, including guidance for students;
- The procedure for assessment appeals;
- Regulations for the conduct of exams;
- The University's policy on making adjustments to exam arrangements for disabled students.
- The code of practice relating to external examining (see also below)
- The Academic Integrity Policy, which covers matters such as plagiarism and collusion and includes guidance for students;
- The policy relating to mitigating circumstances which explains what you should do if you have mitigating circumstances that have affected assessment; and
- The policy on providing students with feedback on assessment.

Please click [here](#) to access the Code of Practice on Assessment and its appendices; this link will also give you access to assessment information that is specific to your cohort:

A summary of key assessment information is also available in the ‘Your University’ handbook.

**Marking criteria:**

Assessment tasks in the subjects studied within the School lie between two extreme types:

- **Type A tasks** where there is a correct answer and little or no opportunity for alternative approaches or displays of insight. For time-constrained assessments, the assessor must ensure that there is a reasonable allowance of time for the student to be able to recall, work out and write down the correct answer.

  Examples: the definition of a term or unit, a schematic or diagrammatic figure, a graph showing the relationship between characteristics, the implementation of a standard procedure (eg, a calculation), a computer programme to carry out a straight-forward task.
• **Type B tasks** where there is no definitive right answer; a range of possible answers could satisfy, to a greater or lesser extent, the question posed. The assessor can provide a sample answer that indicates one general approach to answering the question, the main points expected, the quantity and depth of points expected, etc. There is no logical limit to the number of relevant points that a student could make. Therefore the assessor has to apply some form of constraint on the length of answer (e.g., time in an exam or word-count in a coursework submission) and must therefore make his/her assessment bearing in mind the best answer that could reasonably be expected from a student at that level of study under the prevailing conditions (i.e., exam or coursework).

Examples: a discussion or evaluation of a concept or theory, a design solution to an open-ended problem, a report on a project.

Many assessments lie between these extremes. For instance, a report on a laboratory exercise will have definable ‘correct’ aspects (report structure, grammar, experimental arrangement and procedure, format of tabulated and graphed results) but there are also opportunities for the student to demonstrate understanding and originality in discussing and evaluating the results, suggesting experimental improvements and drawing conclusions.

A major project is a Type B task. Since the assessment of projects is a more complex process, it is dealt with in a separate section below.

**Assessment of Type A tasks**

- Students will have been given (or referred to a source for) the required definition, figure or procedure and may have been told how it would be assessed (e.g., reproduce it, describe it, carry it out).

- The assessor will set the assessment task, bearing in mind how it relates to the module Learning Outcomes. He/she will then prepare the correct answer and an associated Marking Scheme (the total marks available being allocated to the various steps in the answer, according to volume and difficulty of the work required).

- Answers will be marked according to the extent and correctness of each student’s progress through the steps. The examiner should distinguish between correctness of the process and accuracy of the mathematics (thus a student who follows the correct process but makes an arithmetic error in an early step will get the wrong answer but may be awarded most of the marks).

**Assessment of Type B tasks**

- Students may or may not be formally taught the subject matter of the task.

- The assessor will set the assessment task, bearing in mind how it relates to the module Learning Outcomes. He/she may provide (or refer to a source for) guidance on how to tackle the task and perhaps an outline of some aspects of the answer or an example answer to a related task. Alternatively students may be required to develop their own approaches to the task. Unless time-constrained, the assessor must indicate the length of answer expected. Furthermore, he/she may provide the criteria by which student submissions will be assessed, and the relative weighting of criteria, for example: extent to which the requirements and constraints of the task have been satisfied; correctness of use and interpretation of relevant knowledge; extent of coverage of the topic; evidence of wider reading; display of insight, understanding, originality, creativity, etc; quality of analytical and problem-solving skills; quality of communication skills.

- He/she may prepare a sample answer that is within the length constraint and...
matches the stage of development of understanding of the best students. He/she should check that, by applying the stated criteria, the answer would be assessed as at least ‘Very Good’. Some adjustment of the criteria may then be necessary.

- The answer will be marked according to the following Marking Descriptors; some virement will be necessary between the criteria:

When assessing student work, staff will apply the Department’s General Marking Descriptors for Postgraduate Assessments (see below).

<table>
<thead>
<tr>
<th>Knowledge and Understanding</th>
<th>Intellectual Skills</th>
<th>Transferable Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>The best work that could reasonably be expected from a student at that level of study under the prevailing conditions.</td>
<td>Extremely clear exposition. Excellently structured and logical answer. Excellent presentation, only the most insignificant errors.</td>
</tr>
<tr>
<td>80-89% ‘Excellent’</td>
<td>As ‘Outstanding’ but with some minor weaknesses or gaps in knowledge and understanding.</td>
<td>As ‘Outstanding’ but with some minor weaknesses in structure, logic and/or presentation.</td>
</tr>
<tr>
<td>60-69% ‘Good’</td>
<td>As ‘Very Good’ but with more and/or more significant gaps in knowledge and understanding and some significant gaps in grounding.</td>
<td>As ‘Very Good’ but analysis and conclusions contain some minor weaknesses. As ‘Very Good’ but with some weaknesses in exposition and/or structure and a few more grammatical and other errors.</td>
</tr>
<tr>
<td>40-49%</td>
<td>As ‘Adequate’ but</td>
<td>As ‘Adequate’ but</td>
</tr>
<tr>
<td>Classification</td>
<td>Description</td>
<td>Analysis and Conclusions</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>'Compensatable fail'</td>
<td>patchy coverage of the task set and more weaknesses and/or omissions in knowledge and understanding.</td>
<td>without much imagination. Shows barely adequate ability to analyse and draw conclusions. Just fails to meet the threshold level.</td>
</tr>
<tr>
<td>30-39% 'Deficient'</td>
<td>Some parts of the set task likely to have been omitted. Major gaps in knowledge and understanding. Some significant confusion. Very limited grounding.</td>
<td>No creative or imaginative features. Analysis and conclusions rather limited.</td>
</tr>
<tr>
<td>20-29% 'Weak'</td>
<td>As 'Deficient' but with major omissions and/or major gaps in knowledge and understanding. Falls substantially below the threshold level.</td>
<td>As 'Deficient' but analysis and/or conclusions may have been omitted. Falls substantially below the threshold level.</td>
</tr>
<tr>
<td>0-19% 'Extremely weak'</td>
<td>Substantial sections of the task not covered. Knowledge and understanding very limited and/or largely incorrect. No grounding in theory.</td>
<td>No creative or imaginative features. Analysis extremely weak or omitted. No conclusions.</td>
</tr>
</tbody>
</table>

Notes

1. **Highest Standard:** Occasionally and exceptionally Project/course work is of such a high standard that the work has formed part of a patent or technical paper submitted to a journal or presented at a national or international conference. Such work is the highest standard that can be expected of a student and consistent with that which may be expected of a competent practising professional engineer.

2. **Guidelines to Students and Staff:** In addition to the above marking descriptors, the department provides detailed guidelines to students on the planning, implementation and assessment of major projects.

### Student representation and feedback:

The Departmental Staff-Student (Postgraduate) Liaison Committee has been established in accordance with the University Code of Practice on Student Representation (a copy of the code can be accessed at: [http://www.liv.ac.uk/media/livacuk/tqsd/student-enhancement/student-representation/cop_on_student_representationannex.pdf](http://www.liv.ac.uk/media/livacuk/tqsd/student-enhancement/student-representation/cop_on_student_representationannex.pdf)).

The committee normally meets twice per semester. Its membership, terms of reference and the manner in which it conducts its business conforms with the Annex to the Code of Practice on Student Representation. Elections to the Committee will be carried out as necessary within the structure determined by the University Student Representation Committee.
Representation Steering Group, and Programme Representatives are encouraged to attend the training provided for them through the Liverpool University Student Training Initiative. The minutes of meetings are published on the web. The constitution of the department’s Board of Studies includes student representation, and minutes of the Staff-Student Liaison Committee are considered there. Feedback is provided to student members of the Staff-Student Liaison Committee.

Each module in this programme is subject to the originating department’s procedure for obtaining and responding to student feedback (e.g., questionnaires, class discussion). Where appropriate, this feedback is sent on to the Programme Director. He/she also seeks feedback on the programme as a whole via the Liaison Committee, questionnaires and open forum. He/she also receives feedback from informal contact with individual students and from personal tutors when students raise issues with them.

Part F: Status of Professional, Statutory or Regulatory Body Accreditation

39. Status of Professional, Statutory or Regulatory Body Accreditation:
The Institution of Engineering & Technology (IET) accreditation up to 2019.

Part G: Diversity & Equality of Opportunity and Widening Participation

40. Diversity & Equality of Opportunity and Widening Participation:
The University of Liverpool is committed to providing a positive learning environment free from discrimination, harassment and victimisation on the grounds of gender, race, disability, spent criminal convictions (where there is no exemption from the legal provisions in place), sexual orientation, religion and beliefs, socioeconomic background or age and where all members of the University community are treated with respect and dignity.

The ways in which the University demonstrates this commitment are articulated in our Diversity and Equality of Opportunity Policy and action plan and in supporting documents such as the Race Equality Scheme and Action Plan, the Disability Equality Scheme and Action Plan and the Gender Equality Scheme and Action Plan. These Schemes and further information on the University’s commitment to diversity and equality can be found at:

http://www.liv.ac.uk/hr/diversity_equality

ANNEX 1

Annex Of Modifications Made To The Programme

Please complete the table below to record modifications made to the programme.

<table>
<thead>
<tr>
<th>Description of modification (please include details of any student consultation)</th>
<th>Minor or major modifications</th>
<th>Date approved by FAQSC</th>
<th>Date approved by AQSC (if applicable)</th>
<th>Cohort affected</th>
</tr>
</thead>
</table>

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<table>
<thead>
<tr>
<th>undertaken or confirm that students’ consent was obtained where this was required)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEC476 removed from option list. No consultation with students as it only effects new students.</td>
<td>Minor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>