PGDip / MSc Engineering (named Specialism)

**The Programme**
The PGDip Engineering (named Specialism) programme, consisting of eight taught modules, can be studied over one academic year on a full-time basis (CRN 3164), or two years on a part-time basis (CRN 3339). Following successful completion of the PGDip, students may proceed to a research dissertation leading to the award of MSc.

The MSc Engineering (named Specialism) programme, involving an additional research dissertation, can be studied over one calendar year on a full-time basis (CRN 3165), or three years on a part-time basis (CRN 3340).

The specialisms on offer are:
- Biomedical Engineering
- Electronics
- Manufacturing Management
- Micro- and Nano-Technology
- Polymers and Advanced Composites

The programme has a distinctive mode of delivery involving distance learning and work/research based learning. More details are given in the Programme Specification at the end of this document.

**Aims**
The programme has been designed to provide postgraduate education and training in the concepts and methods within a specialist engineering area and their intelligent application to problems within industry and academic research. It will enable candidates to develop a comprehensive knowledge and understanding of the scientific principles, theories and practice in the chosen area of engineering specialisation. A key feature of the programme is a module on Entrepreneurship taken by all candidates.

Upon successful completion of this programme full-time students will be more employable and part-time students will have the potential to accelerate their career development.

**Objectives**
The specific objectives which are set for this programme are to provide graduates with the ability to:
- deal with complex engineering and technological issues systematically and creatively, make sound judgements in the absence of complete data, and communicate their conclusions clearly to specialist and non-specialist audiences;
- demonstrate self-direction and originality in tackling and solving engineering problems, and act autonomously in planning and implementing tasks at a professional or equivalent level;
- continue to advance their engineering and managerial knowledge and understanding, and develop new skills to a high level;
- demonstrate the qualities and transferable skills in their specialist engineering discipline necessary for employment, or research activities, requiring:
  - the exercise of initiative and personal responsibility;
  - decision-making in complex and unpredictable situations; and
  - the independent learning ability required for continuing professional development.
In addition, the MSc programme seeks to provide graduates with the ability to:

- demonstrate an advanced depth and integration of specialist knowledge;
- successfully undertake and complete a major dissertation based on original specialist research or the implementation of new and advanced processes/procedures/technologies into the industrial environment.

**Programme Management**

A Course Director manages each University programme of study. As your Course Director I have responsibility for overall policy matters relating to the programme and, as stated earlier, the day-to-day organisation of the programme.

There is also a Course Committee associated with each programme which comprises the Course Director, Senior Academic staff from the School, Academic staff who are assigned to teach modules on the programme and student representatives from each year of the Programme.

The Course Committee places great emphasis on quality and professionalism in all aspects of the programme. There is, in place at School and Faculty level, a wide variety of checking mechanisms and procedures, both internal and external, to ensure that the standards expected from the programme are met and maintained. There are thus mechanisms for example to ensure the quality of the programme material and marking standards for both coursework and examinations.

**External Examiner**

External Examiners are usually Professors from different Universities who moderate and maintain the academic standards of the programme. The Course Committee liaises closely with the External Examiner and is always appreciative of his/her advice and comments.

The External Examiner visits the University annually with ongoing contact as required. He/she is involved in the moderation of assessment material and the meeting of the board of examiners at which each student is considered individually and recommendations for awards made. All examination papers with model solutions are presented to the External Examiners for approval. Similarly all examination scripts and coursework are made available for moderation.

The reports from the External Examiner form an important part of the documentation associated with the Annual Programme Review that is undertaken each year. In this Review the Course Director is invited to consider the operation of the previous academic year and comment on its success or otherwise. It is a University mechanism for ensuring that the standards of the programme are being maintained.

**Studies Advisors**

You will be assigned a Studies Advisor who will be a member of academic staff from within the School and act in a pastoral role for you. Your Studies Advisor will also be your “voice” in the meeting of the Board of Examiners at the end of the programme year. Consequently you must always make him or her aware of any matters that you feel are affecting your performance in the coursework assessments or examinations, for example absence from the programme due to illness or any other reason. Students are occasionally called for jury duty. If this is the case, contact your Studies Advisor immediately.

**Student Staff Consultative Committee**

Your class will be asked to nominate a number of student representatives to serve on the Student/Staff Consultative Committee. This committee meets with the staff representatives at least once each semester and provides an opportunity for you to
discuss with the academic staff any problems associated with the organisation of the programme so that remedial action can be quickly taken if necessary. Note that problems associated with specific modules should always in the first instance be discussed with your lecturer or/and module co-ordinator. These meetings are minuted and the minutes are included with the Programme Annual Report.

**Communication with the Student**
Each programme of study has an information notice board. The PGDip/MSc Engineering (named Specialism) notice board is located adjacent to room 5B11. You should locate this notice board and make a point of regularly consulting it for up-to-date information on the programme.
All email communication from the University will be to the official University email address. You should make a point of checking your web-based University email account on a daily basis.
Most programmes have in addition a web site providing a more comprehensive source of information on the programme and related activities. There are also direct links into module syllabi and support material, and other useful sites such as the library. Distance learning module materials are accessed via WebCT.

**Structure of a Year**
The University calendar is organised around the three semesters (Autumn, Spring and Summer). Semester 1 runs from September to January, Semester 2 from February to May and Semester 3 from June to September.
**Modules**
Lists giving the suite of modules for each specialism are provided in the Programme Specification following. The modules may be continuously assessed by coursework throughout or assessed by a combination of coursework and an examination. Examinations take place in the examination periods in January and May. The taught modules of the PGDip/MSc Engineering (named Specialism) programme of study are shown in the diagram below.

**PgD Engineering (Part-time)**

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Semester 1</th>
<th>Semester2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Research Methods</td>
<td>Research- or Work-based Learning 1</td>
</tr>
<tr>
<td></td>
<td>Specialist module Sp1</td>
<td>Specialist module Sp2</td>
</tr>
</tbody>
</table>

| Year 2       | Research- or Work-based Learning 2             | Entrepreneurship                    |
|              | Specialist module Sp3                          | Specialist module Sp4               |

**PgD Engineering (Full-time)**

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Semester 1</th>
<th>Semester2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Research- or Work-based Learning 1</td>
<td>Research- or Work-based Learning 2</td>
</tr>
<tr>
<td></td>
<td>Research Methods</td>
<td>Entrepreneurship</td>
</tr>
<tr>
<td></td>
<td>Specialist module Sp1</td>
<td>Specialist module Sp2</td>
</tr>
<tr>
<td></td>
<td>Specialist module Sp3</td>
<td>Specialist module Sp4</td>
</tr>
</tbody>
</table>

**Notes:**
- For **part-time** students the **Masters Dissertation** requires an additional year of study.
- For **full-time** students the **Masters Dissertation** requires an additional semester of study (Semester 3).
- Sp1, Sp2 & Sp3 are the core specialist technology modules for the chosen specialism.
- Sp4 is an optional specialist technology module chosen from the other specialisms.
- Satisfactory completion of the eight taught modules leads to the award of the PGDip.
- All of the eight taught modules are 15 points, while the Masters dissertation is a 60 point module.
- There are two work-based/research-based modules and two web-dependent modules (Research Methods & Entrepreneurship), which have minimal timetabled attendance.
Transfer to and from the Programme
It is not envisaged that students will transfer from this programme directly to any other programme. However, it is hoped that the programme will develop and hone specialist knowledge to an extent that it will encourage suitable MSc candidates to subsequently register on PhD programmes offered within the School of Engineering. In addition, Postgraduate Diploma candidates will be able to progress to the Master’s stage if they obtain an overall average of 50%.

Teaching, Learning and Assessment Strategies
The School of Engineering aims to deliver a range of learning experiences that empower students to develop their knowledge, understanding and skills within their chosen field of specialism. The primary aim is to encourage students to move beyond the passive absorption of information to the critical analysis of the subject material they are presented with. Teaching, learning and assessment strategies take a variety of forms in order to achieve this and approaches vary across the modules of study. As a result, different modules are to be presented in various forms as follows:

- **Research Methods and Entrepreneurship Modules.**
  These two modules are core for all students and delivered in an web-dependent mode. A University postgraduate Entrepreneurship module has been developed by NICENT for delivery by distance learning, this standard module is being adopted within the programme. “Research Methods” has previously been delivered on a range of programmes across the Faculty and is now to be partially delivered using distance learning methods on this course.

- **Work Based Learning and Research Based Learning Modules.**
  The module taken is either work based or research based depending on whether the mode of study is part-time or full-time respectively. The approach currently used on the University PGD/MSc Industrial Practice programme has been adopted for these four modules. No class-based teaching is required for these modules, however, academic and industrial supervision will be needed to guide and assess the work undertaken by the student. The primary aim of these modules is to effectively apply the material taught in the specialist modules in order to provide change and improvement within either a local company or a relevant research division within the University. Exceptionally, if a part-time student cannot obtain a work based learning project within their company, an alternative research-based project will be offered.

- **Specialist Modules**
  Formal lectures remain a core activity in the presentation of these modules. Typically, each module consists of 12 x 3 hour sessions during mornings or afternoons. Each specialism has three specific modules associated with it. For that specialism, these modules are compulsory. The remaining module is selected from the pool of modules from the other specialisms. In all cases, students are expected to read widely for all their modules. Independent learning is closely associated with assessment and examination performance.

As far as is possible, the course team will try to ensure that attendance at the University will only be required on one day of each week of the teaching semester for those students following the part-time course programmes. In the case of some modules that are highly web-dependent, it may only be necessary to attend for one half-day per week during certain semesters.
Referencing and Plagiarism
In this programme the assessment scheme involves quite a high proportion of coursework. Plagiarism, which appears to be on the increase, is recognised as a potential problem. In the presentation of such work it is important that candidates understand the vital necessity of clearly and properly acknowledging all sources of information used in the completion of assignments. To this end candidates will be given clear guidelines on proper referencing and what constitutes plagiarism. A positive approach with the objective of the prevention of plagiarism is planned. However, candidates will be made aware that plagiarism is a serious offence and referred to the relevant University Regulations. It is planned that each element of coursework submitted for assessment should be accompanied by a coursework cover sheet that will include a "Declaration of Authenticity." This will include a signed declaration that the submitted work is the candidate's own work and that all sources of information used have been duly acknowledged. Students will be informed of these procedures, and the consequences of an offence, during the initial induction period of the programme.

More complete details of the course structure and content are given in the following section.
PROGRAMME SPECIFICATION

COURSE TITLES:  PGCert Engineering (Exit Award only)
PGDip Engineering (named Specialism) (C122PJ CRN3164)
PGDip Engineering (named Specialism) (P/T) (C123PJ CRN3165)
MSc Engineering (named Specialism) (C522PJ CRN3339)
MSc Engineering (named Specialism) (P/T) (C523PJ CRN3340)

PLEASE NOTE.. This specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he or she takes full advantage of the learning opportunities provided. More detailed information on the specific learning outcomes, content and the teaching, learning and assessment methods of each module can be found at http://www.engj.ulst.ac.uk/modules/. The accuracy of the information is reviewed by the University. It may also be checked within the independent review process undertaken by the Quality Assurance Agency.

1. AWARDING INSTITUTION/BODY  University Of Ulster
2. TEACHING INSTITUTION  University Of Ulster
3. LOCATION  Jordanstown
4. COURSE ACCREDITED BY  None
5. FINAL AWARD  PGDip, MSc
6. MODE OF ATTENDANCE  Full and Part-Time
7. SPECIALISMS  Biomedical Engineering;
Electronics;
Manufacturing Management;
Micro- and Nano-Technology; and
Polymers and Advanced Composites.

8. HESA CODE  9
9. REVISED

10. EDUCATIONAL AIMS OF THE PROGRAMME -

The overall aim of the course is to provide postgraduate education and training in the concepts and methods within a specialist engineering area and their intelligent application to the problems within the industrial and business communities and for research degree preparation.

In particular the course seeks to provide graduates with the ability to:

- deal with complex engineering and technological issues systematically and creatively, make sound judgements in the absence of complete data, and communicate their conclusions clearly to specialist and non-specialist audiences;

- demonstrate self-direction and originality in tackling and solving engineering problems, and act autonomously in planning and implementing tasks at a professional or equivalent level;

- continue to advance their engineering and managerial knowledge and understanding, and develop new skills to a high level;
• demonstrate the qualities and transferable skills in their specialist engineering discipline necessary for employment, or research activities, requiring:
  - the exercise of initiative and personal responsibility;
  - decision-making in complex and unpredictable situations; and
  - the independent learning ability required for continuing professional development.

In addition, the MSc programme seeks to provide graduates with the ability to:

• demonstrate an advanced depth and integration of specialist knowledge;

• successfully undertake and complete a major dissertation based on original specialist research or the implementation of new and advanced processes/procedures/technologies into the industrial environment.

11. MAIN LEARNING OUTCOMES

The course provides opportunities for students to achieve and demonstrate the following learning outcomes.

K KNOWLEDGE AND UNDERSTANDING OF SUBJECT

K1 Develop a comprehensive knowledge and understanding of the scientific principles, theories and practice in the chosen area of engineering specialisation.

K2 Recognise and analyse criteria and specifications appropriate to specific problems and plan strategies for their solution.

K3 Employ effectively modern methodologies and tools for the specification, design, implementation and critical evaluation and implementation of engineering solutions in the chosen specialist area.

K4 Analyse the extent to which an engineering-based system meets the criteria defined for its current deployment and future evolution.

K5 Communicate effectively ideas, proposals and designs to a range of audiences, using rational and reasoned arguments, either orally, written or electronically.

K6 Comprehend the professional, legal, moral, environmental and ethical issues involved in the exploitation of engineering technologies.

Teaching and Learning Methods

Subject related qualities are acquired mainly through lectures, seminars, directed reading, case studies and practical sessions. Exposure to the engineering environment is an important aspect of the teaching and learning methods, as are projects.

Assessment Methods

Testing of the knowledge base is principally through examinations and/or coursework.
assignments, technical reports, project dissertation and oral presentations.
### I INTELLECTUAL QUALITIES

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I1</td>
<td>Analyse complex problems and formulate solutions.</td>
</tr>
<tr>
<td>I2</td>
<td>Be creative in the solution of problems including the development of designs and systems.</td>
</tr>
<tr>
<td>I3</td>
<td>Integrate engineering theory and practice with particular emphasis on application, design, quality, commercial and management studies.</td>
</tr>
<tr>
<td>I4</td>
<td>Gather, analyse, integrate and utilise information and data from a variety of sources.</td>
</tr>
<tr>
<td>I5</td>
<td>Conduct and report on activities in a chosen specialist area.</td>
</tr>
<tr>
<td>I6</td>
<td>Plan, conduct and report a major programme of original research or implementation of new and advanced processes/procedures/technologies in industry. (Applies only to the MSc programme)</td>
</tr>
</tbody>
</table>

**Teaching and Learning Methods**

Intellectual qualities are developed mainly through tutor directed tutorials, supervised practical sessions and self-directed learning employing study packs and research based material.

**Assessment Methods**

Assessment focuses on the coursework submissions, experiment write-ups, project reports and dissertation. Some of these skills are also assessed in written examinations.

### P PROFESSIONAL /PRACTICAL SKILLS

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Formulate innovative solutions leading to the design of products, systems or processes to fulfil new needs. (Not included in PGC)</td>
</tr>
<tr>
<td>P2</td>
<td>Source and effectively use engineering information.</td>
</tr>
<tr>
<td>P3</td>
<td>Utilise appropriate industry standard computer applications software.</td>
</tr>
<tr>
<td>P4</td>
<td>Perform effectively within a team environment and have the ability to recognise and utilise individuals’ contributions in group processes. (Not included in PGC)</td>
</tr>
<tr>
<td>P5</td>
<td>Use management skills to plan and organise work groups and projects.</td>
</tr>
<tr>
<td>P6</td>
<td>Write reports, using cogent arguments, for various audiences including management, technical users or the academic community.</td>
</tr>
</tbody>
</table>

**Teaching and Learning Methods**

The teaching and learning methods place emphasis on tutor directed tutorials, problem based seminars and practical sessions, team assignments, and project preparation and implementation.

**Assessment Methods**

Coursework assignments, project reports, peer- and self-assessment and dissertation constitute the assessment methods.

### T TRANSFERABLE SKILLS

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>Learn in both familiar and unfamiliar situations making effective use of information-</td>
</tr>
</tbody>
</table>
retrieval skills and of learning resources.

T2 Communicate effectively using appropriate media and with a variety of audiences.

T3 Apply mathematical and modelling skills to solve problems in the chosen engineering specialism.

T4 Effectively use information technology and associated skills.

T5 Transfer techniques and solutions from one field of engineering to another.

T6 Develop the facility for independent learning, open-mindedness, and the spirit of critical enquiry.

T7 Appreciate the need for continuing professional development in recognition of the requirements of Life Long Learning.

Teaching and Learning Methods
Transferable and key skills are developed throughout the course, via tutor directed tutorials, seminars and practical sessions, project preparation and implementation.

Assessment Methods
Assessment is principally through coursework assignments, project vivas/reports and dissertation.

E ENTREPRENEURSHIP TRAINING

E1 Critically analyse key theories of entrepreneurship, intrapreneurship, the entrepreneurial process and the entrepreneurial environment, including evaluating the role of the entrepreneur and the entrepreneurial team in new venture creation, in the development of established enterprises and in the process of innovation. (Not included in PGC)

E2 Critically examine the components of a new venture/project plan and aspects of the planning process. (Not included in PGC)

E3 Critically examine the importance of the entrepreneurial opportunity in the entrepreneurial process, the role of creativity and innovation in entrepreneurial opportunity identification and the challenges of protecting new ideas.

E4 Experiment with creative thinking techniques in seeking solutions to complex entrepreneurial problems, including New Product Development (NPD) and the development of new processes.

E5 Evaluate the potential of alternative entrepreneurial opportunities using appropriate research techniques. (Not included in PGC)

E6 Critically examine and organise effectively the different resources needed to fully exploit the potential of an entrepreneurial opportunity, including financial, human and physical resources. (Not included in PGC)

E7 Integrate entrepreneurship theory and practice through the development of an effective,
marketing led, strategic plan either to set up a new venture, to develop an existing enterprise or to develop an appropriate entrepreneurial project.

**Teaching and Learning Methods**
Engineering Entrepreneurship will be student centred and designed to encourage independent learning and study. The focus is on the process and will employ maximum flexibility in the learning environment and in methods of delivery. As a consequence a mixture of mentoring workshops and Web based learning material will be utilised.

**Assessment Methods**
Assessment will be based on the successful completion of an entrepreneurial project and viva.
### MODULE OUTCOME MAP for PGD/MSc ENGINEERING (named Specialism)

**Please Note:** The matrix displays only the main measurable outcomes. There may be other outcomes detailed in the module descriptions (e.g. attitudes and behaviours), which are not assessed.

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Module Description</th>
<th>K1</th>
<th>K2</th>
<th>K3</th>
<th>K4</th>
<th>K5</th>
<th>K6</th>
<th>I1</th>
<th>I2</th>
<th>I3</th>
<th>I4</th>
<th>I5</th>
<th>I6</th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
<th>P4</th>
<th>P5</th>
<th>P6</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>T7</th>
<th>E1</th>
<th>E2</th>
<th>E3</th>
<th>E4</th>
<th>E5</th>
<th>E6</th>
<th>E7</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEE809J1</td>
<td>Research Methods</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC860J2</td>
<td>Entrepreneurship (Engineering)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC861J1</td>
<td>Research Based Learning 1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC862J2</td>
<td>Research Based Learning 2</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC809J1</td>
<td>Work Based Learning 1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC863J2</td>
<td>Work Based Learning 2</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BME801J1/2</td>
<td>Biomaterials</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BME802J1/2</td>
<td>Bioinstrumentation</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BME808J1/2</td>
<td>Tissue Engineering</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EEE824J1/2</td>
<td>RF Circuit Design</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EEE826J1/2</td>
<td>Digital Signal Processing</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EEE822J1/2</td>
<td>C++ &amp; Object Oriented Programming</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC808J1/2</td>
<td>Manufacturing Systems</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC864J1/2</td>
<td>CAE for Managers</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC832J1/2</td>
<td>Quality Improvement</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EEE830J1/2</td>
<td>Micro- &amp; Nano-Scale Devices</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EEE831J1/2</td>
<td>Nanoscale Analysis &amp; Metrology</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EEE832J1/2</td>
<td>Micro- &amp; Nano-Scale Fabrication</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC865J1/2</td>
<td>Polymer Technology</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC866J1/2</td>
<td>Composite Engineering</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC867J1/2</td>
<td>Process Product Optimisation</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC868J4</td>
<td>Masters Dissertation</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**MODULE OUTCOME MAP for PGCert ENGINEERING**

*(Exit Award for candidates who fail to make the requirements for the PGD Engineering (named Specialism)*

**Please Note:** The matrix displays only the main measurable outcomes. There may be other outcomes detailed in the module descriptions (e.g. attitudes and behaviours), which are not assessed.

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Module Description</th>
<th>K1</th>
<th>K2</th>
<th>K3</th>
<th>K4</th>
<th>K5</th>
<th>K6</th>
<th>I1</th>
<th>I2</th>
<th>I3</th>
<th>I4</th>
<th>I5</th>
<th>P2</th>
<th>P3</th>
<th>P5</th>
<th>P6</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>T7</th>
<th>E3</th>
<th>E4</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEE809J1</td>
<td>Research Methods</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Any ONE module from the following four modules**

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Module Description</th>
<th>K1</th>
<th>K2</th>
<th>K3</th>
<th>K4</th>
<th>K5</th>
<th>K6</th>
<th>I1</th>
<th>I2</th>
<th>I3</th>
<th>I4</th>
<th>I5</th>
<th>P2</th>
<th>P3</th>
<th>P5</th>
<th>P6</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>T7</th>
<th>E3</th>
<th>E4</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEC861J1</td>
<td>Research Based Learning 1</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC862J2</td>
<td>Research Based Learning 2</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC809J1</td>
<td>Work Based Learning 1</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC863J2</td>
<td>Work Based Learning 2</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Any TWO modules from the following fifteen modules**

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Module Description</th>
<th>K1</th>
<th>K2</th>
<th>K3</th>
<th>K4</th>
<th>K5</th>
<th>K6</th>
<th>I1</th>
<th>I2</th>
<th>I3</th>
<th>I4</th>
<th>I5</th>
<th>P2</th>
<th>P3</th>
<th>P5</th>
<th>P6</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>T7</th>
<th>E3</th>
<th>E4</th>
</tr>
</thead>
<tbody>
<tr>
<td>BME801J1/2</td>
<td>Biomaterials</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BME802J1/2</td>
<td>Bioinstrumentation</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BME808J1/2</td>
<td>Tissue Engineering</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EEE824J1/2</td>
<td>RF Circuit Design</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EEE826J1/2</td>
<td>Digital Signal Processing</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EEE822J1/2</td>
<td>C++ &amp; Object Oriented Programming</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC808J1/2</td>
<td>Manufacturing Systems</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC864J1/2</td>
<td>CAE for Managers</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC832J1/2</td>
<td>Quality Improvement</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EEE830J1/2</td>
<td>Micro- &amp; Nano-Scale Devices</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EEE831J1/2</td>
<td>Nanoscale Analysis &amp; Metrology</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EEE832J1/2</td>
<td>Micro- &amp; Nano-Scale Fabrication</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC865J1/2</td>
<td>Polymer Technology</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC866J1/2</td>
<td>Composite Engineering</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEC867J1/2</td>
<td>Process Product Optimisation</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
12. COURSE STRUCTURE AND REQUIREMENTS

The programme offers a programme of study leading to the award of a Postgraduate Diploma or a Master of Science Degree and conforms to the University’s modular requirements. The programme for a Postgraduate Diploma may be studied full-time over a period of one academic year or part-time over two academic years. An accumulation of 120 credit points, coming from eight 15-point modules, is necessary to complete the Diploma programme of study. An additional 60-points, acquired by completing a research project and resulting dissertation, provides the necessary supplement for the award of a Masters Degree which may be taken Full- or Part-time.

The eight 15-point modules for the Postgraduate Diploma consist of four compulsory modules, two of which are research-based for full-time or work-based for part-time candidates. For each specialism three modules must be taken from that specialist area. The remaining module can be chosen from the remaining twelve modules out of the overall pool of fifteen specialist modules. Availability of a given module will depend on a sufficient demand in a given year.

The four 15-point modules for the Postgraduate Certificate (Exit Award) consist of one compulsory module, three optional modules, one of which is research-based for full-time or work-based for part-time candidates. The remaining two optional modules are taken from the pool of specialist modules.

Progression, transfer and award criteria are outlined in Section 16.

Details of the modules are listed below.

POSTGRADUATE DIPLOMA

Compulsory Modules

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Module Title</th>
<th>Credit Level</th>
<th>Credit Points</th>
<th>Module Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEE809J1</td>
<td>Research Methods</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
<tr>
<td>MEC860J2</td>
<td>Entrepreneurship (Engineering)</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
<tr>
<td>MEC861J1</td>
<td>Research Based Learning 1 (F/T only)</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
<tr>
<td>MEC862J2</td>
<td>Research Based Learning 2 (F/T only)</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
<tr>
<td>MEC809J1</td>
<td>Work Based Learning 1 (P/T only)</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
<tr>
<td>MEC863J2</td>
<td>Work Based Learning 2 (P/T only)</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
</tbody>
</table>

“Biomedical Engineering” Compulsory Modules

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Module Title</th>
<th>Credit Level</th>
<th>Credit Points</th>
<th>Module Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>BME801J1/2</td>
<td>Biomaterials</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
<tr>
<td>BME802J1/2</td>
<td>Bioinstrumentation</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
</tbody>
</table>
The **fourth** 15 credit point module is selected from the pool of modules from the other specialisms.

### “Electronics” Compulsory Modules

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Module Title</th>
<th>Credit Level</th>
<th>Credit Points</th>
<th>Module Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEE824J1/2</td>
<td>RF Circuit Design</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
<tr>
<td>EEE826J1/2</td>
<td>Digital Signal Processing</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
<tr>
<td>EEE822J1/2</td>
<td>C++ &amp; Object Oriented Programming</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
</tbody>
</table>

The **fourth** 15 credit point module is selected from the pool of modules from the other specialisms.

### “Manufacturing Management” Compulsory Modules

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Module Title</th>
<th>Credit Level</th>
<th>Credit Points</th>
<th>Module Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEC808J1/2</td>
<td>Manufacturing Systems</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
<tr>
<td>MEC864J1/2</td>
<td>CAE for Managers</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
<tr>
<td>MEC832J1/2</td>
<td>Quality Improvement</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
</tbody>
</table>

The **fourth** 15 credit point module is selected from the pool of modules from the other specialisms.

### “Micro- and Nano-Technology” Compulsory Modules

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Module Title</th>
<th>Credit Level</th>
<th>Credit Points</th>
<th>Module Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEE830J1/2</td>
<td>Micro &amp; Nano-Scale Devices</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
<tr>
<td>EEE831J1/2</td>
<td>Nanoscale Analysis &amp; Metrology</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
<tr>
<td>EEE832J1/2</td>
<td>Micro- &amp; Nano-Scale Fabrication</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
</tbody>
</table>

The **fourth** 15 credit point module is selected from the pool of modules from the other specialisms.

### “Polymers & Advanced Composites” Compulsory Modules

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Module Title</th>
<th>Credit Level</th>
<th>Credit Points</th>
<th>Module Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEC865J1/2</td>
<td>Polymer Technology</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
<tr>
<td>MEC866J1/2</td>
<td>Composite Engineering</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
</tbody>
</table>
The **fourth** 15 credit point module is selected from the pool of modules from the other specialisms.

**POSTGRADUATE CERTIFICATE** *(Exit Award ONLY)*

**Compulsory Modules**

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Module Title</th>
<th>Credit Level</th>
<th>Credit Points</th>
<th>Module Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEE809J1</td>
<td>Research Methods</td>
<td>M</td>
<td>15</td>
<td>C</td>
</tr>
</tbody>
</table>

**Optional Modules**

Any ONE from the following:

- **MEC861J1**  Research Based Learning 1 *(F/T only)*  M 15  O
- **MEC862J2**  Research Based Learning 2 *(F/T only)*  M 15  O
- **MEC809J1**  Work Based Learning 1 *(P/T only)*  M 15  O
- **MEC863J2**  Work Based Learning 2 *(P/T only)*  M 15  O

Any TWO from the following:

- **BME801J1/2**  Biomaterials  M 15  O
- **BME802J1/2**  Bioinstrumentation  M 15  O
- **BME808J1/2**  Tissue Engineering  M 15  O
- **EEE824J1/2**  RF Circuit Design  M 15  O
- **EEE826J1/2**  Digital Signal Processing  M 15  O
- **EEE822J1/2**  C++ & Object Oriented Programming  M 15  O
- **MEC808J1/2**  Manufacturing Systems  M 15  O
- **MEC864J1/2**  CAE for Managers  M 15  O
- **MEC832J1/2**  Quality Improvement  M 15  O
- **EEE830J1/2**  Micro & Nano-Scale Devices  M 15  O
- **EEE831J1/2**  Nanoscale Analysis & Metrology  M 15  O
- **EEE832J1/2**  Micro- & Nano-Scale Fabrication  M 15  O
13. SUPPORT FOR STUDENTS AND THEIR LEARNING

Students and their learning are supported in a number of ways:

- **An Induction Session** gives an overview on the key aspects of the course and resources provided by the University. This is delivered to students in the first week by the Course Director, together with the leaders responsible for each of the “Specialist” areas of the course.

- A **Course Handbook** provides all the necessary information about the course. It provides information on modules to be studied, course calendar, course director, teaching staff, health and safety issues, student support services and a guide to life as a student. It also contains the course specification and the current course regulations.

- **Module Booklets** describe the content of each module delivered in a particular year. These provide students with the module content, teaching and assessment schedules and a list of the recommended texts.

- **An Advisor of Studies** is allocated to each student. The advisor is a member of staff who provides assistance to the student in their personal and career development.

- A centralised **Counselling Service** is available to students who are experiencing problems with aspects of their lives other than the strictly academic. However, if these problems are affecting their studies or academic progress the course director, study advisor and appropriate members of the course team co-operate to provide recommended help and advice to the student concerned.

- A centralised **Careers Service** is available to help full-time students on the course to determine their future career and support their applications for employment. Direct advice is provided to enable students to make meaningful use of the careers service throughout the year.

- **A Research Methods** module has been included in the programme of study to enhance understanding and develop research skills for project preparation and presentation.

- **Other support** is provided in the areas of accommodation, special needs, healthcare, childcare, e-mail and Internet access, computer usage, learning packs, and extensive library and other learning resources.
### 14. CRITERIA FOR ADMISSION TO THE COURSE

Applicants must satisfy the University's general entry requirements and specific requirements for admission to the course as detailed below:

**Postgraduate Diploma**

Typically applicants must:

(a) have gained

(i) an honours degree or non-honours degree (with 360 credits) in a relevant engineering, technology or conversion course from a university of the United Kingdom or the Republic of Ireland, from the Council for National Academic Awards, from the national Council for Education Awards, from the Higher Education and Training Awards Council, or from an institution which is recognised by the Senate for this purpose; or

(ii) an HNC/HND in a relevant engineering or technology course together with at least 3 years relevant industrial experience at an appropriate level; or

(iii) in exceptional circumstances, where an individual has substantial and significant experiential learning (APEL), a portfolio of written evidence demonstrating the meeting of the learning outcomes of the entry requirements (including subject specific outcomes, specified by Course Committee) may be considered as an alternative entrance route. Evidence used to demonstrate entrance requirements may not be used for exemption against modules within the programme; and

(b) provide evidence of competence in written and spoken English (GCSE grade C or equivalent).

**Master of Science**

Typically applicants must:

(a) have gained

(i) a second class honours degree or better in a relevant engineering, technology or conversion course from a university of the United Kingdom or the Republic of Ireland, from the Council for National Academic Awards, from the national Council for Education Awards, from the Higher Education and Training Awards Council, or from an institution which is recognised by the Senate for this purpose; or

(ii) an equivalent standard (normally 50%) in a Postgraduate Certificate, Graduate Diploma, Graduate Certificate or an approved professional or other qualification; or

(iii) an equivalent standard in a preliminary examination; and

(b) provide evidence of competence in written and spoken English (GCSE grade C or equivalent).

### 15. EVALUATING AND IMPROVING THE QUALITY AND STANDARD OF LEARNING AND TEACHING
Mechanisms for review and evaluation of teaching, learning, assessment, and the curriculum and outcome standards include:

- **The Course Committee.** This committee oversees all changes to the Course and has overall responsibility for its design and effective delivery.

- **The Staff-Student Consultative Committee.** Class representatives are appointed to represent the student population of the course. They are expected to bring forward any issues raised by the student group they represent.

- **Module Evaluation.** Each module co-ordinator takes responsibility for evaluating the content and delivery of their module. The evaluation is informed by student feedback on tutors involved in the delivery of the module and module performance statistics provide by the University. The Course Committee reviews the evaluations.

- **Peer Observation.** Each year, each member of teaching staff is required to have at least one of their lectures observed by a colleague who provides informal feedback on performance.

- **Staff Teaching Performance.** This is monitored annually through student questionnaires. The results of the survey help staff identify their own strengths/weaknesses and to take appropriate action where necessary.

- **Staff Appraisal.** This exercise is carried out on a 2-year cycle with attention given to the development needs of the individual staff member.

- **Staff Development.** The University has an active Staff Development Unit, which works closely with Educational Development and, in addition provides specific training/development for staff. Specifically, all new staff (opportunity is also provided for existing staff) have to pursue a formal teaching qualification (Postgraduate Certificate) and are encouraged to apply for membership of the ILT.

- **Annual Subject Monitoring.** Each year, all courses within the Faculty are reviewed to ensure their effectiveness and identify opportunities for improvement.

16. REGULATION OF STANDARDS

**Assessment rules**

**Classification of Final Result for Postgraduate Diploma and Postgraduate Certificate**

The following shall be the minimum percentages in determining the overall gradings of candidates.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass with Distinction</td>
<td>70%</td>
</tr>
<tr>
<td>Pass</td>
<td>50%</td>
</tr>
</tbody>
</table>

The Board of Examiners shall recommend the award of a Pass with Distinction to a candidate who achieves an overall mark of at least 70%, provided that a module mark of at least 70% has been achieved in modules amounting to 60 credit points for the Postgraduate Diploma.

Candidates admitted with advance standing shall be assessed in accordance with the course regulations using the evidence from the accredited prior learning.

In order for Postgraduate Diploma candidates to transfer to the Master's course they are required to have obtained an overall average of 50%.

Candidates who fail to satisfy the requirements for the award and have passed four modules amounting to 60 credit points may be recommended for the award of a postgraduate...
certificate. The four modules must include:

- Research Methods (EEE809J1);
- One from Research Based Learning 1 (MEC861J1), Research Based Learning 2 (MEC862J2), Work Based Learning 1 (MEC809J1), or Work Based Learning 2 (MEC863J2);
- Two from the Specialist taught modules.

The Board of Examiners shall recommend the award of a Pass with Distinction to a candidate who achieves an overall average mark of at least 70%, provided that a module mark of at least 70% has been achieved in modules amounting to 30 credit points for the Postgraduate Certificate.

**Classification of Final Result for Master's Degree**

The following shall be the minimum percentages in determining the overall gradings of candidates.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Minimum Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass with Distinction</td>
<td>70%</td>
</tr>
<tr>
<td>Pass</td>
<td>50%</td>
</tr>
</tbody>
</table>

The Board of Examiners shall recommend the award of a Pass with Distinction to a candidate who achieves an overall mark of 70% or more, with a mark of at least 70% being achieved in modules amounting to 90 credit points, including the Research Dissertation module.

Candidates who fail the Research Dissertation module and have passed the taught and research-based/ work-based modules may be assessed for the award of a Postgraduate Diploma (see above).

**Role of the External Examiner**

An External Examiner, is appointed to the course by the Senate, and reports annually to the University. The term of office is normally for 4 years.

The full duties of an external examiner are set out in the University’s “Code of Practice for External Examiners”. They include:

- Approval and moderation of examination papers and other forms of assessment.
- Consideration and revision of the standard of marking.
- Ensuring that academic standards are maintained and that individual students are treated fairly.
- Comparability of these standards with those of similar courses.
- Submitting to the Pro-Vice-Chancellor (Teaching and Learning) a report on standards of the Course.
17. INDICATORS OF QUALITY RELATING TO LEARNING AND TEACHING

• Teaching staff within the faculty are encouraged to become accredited members of the Institute for Learning and Teaching.

• As well as teaching, most staff are actively engaged in research that informs their teaching. In addition, most have substantial industrial experience prior to joining the University. A significant number are full members of appropriate professional bodies (e.g. CEng, MIMechE, MIEE, MIED, CMath, etc.).

• Staff from the School engage in leading edge and applied research within associated centres; namely Nanotechnology Research Institute, NIBEC, Centre for Communications Engineering and ECRE.

• Graduates from the courses have substantially better employment prospects than those from other subject disciplines. Most will have paid employment within industry within 3 months of graduation.

The regulations for the PgD/MSc programmes are given in the following section.
PROGRAMME REGULATIONS

1. PROGRAMME TITLES and CODES
PgD Engineering (named Specialism) (Full-time) [C122PJ CRN3164]
PgD Engineering (named Specialism) (Part-time) [C522PJ CRN3339]
MSc Engineering (named Specialism) (Full-time) [C123PJ CRN3165]
MSc Engineering (named Specialism) (Part-time) [C523PJ CRN3340]

2. MODE OF ATTENDANCE
Full-Time and Part-Time

3. DURATION
Full-time Postgraduate Diploma: two semesters (one academic year)
Part-time Postgraduate Diploma: four semesters (two academic years)
Full-time Master of Science: three semesters (one calendar year)
Part-time Master of Science: normally one calendar year beyond the requirements for
Postgraduate Diploma.

4. LOCATION
University of Ulster, Jordanstown campus.

5. FACULTY
Faculty of Computing and Engineering

6. ADMISSION REQUIREMENTS

6.1 Applicants must satisfy the University's general entry requirements and specific
requirements for admission to the programme are detailed below:

Postgraduate Diploma
Typically applicants must:
(a) have gained
   (i) an honours degree or non-honours degree (with 360 credits) in a relevant
       engineering, technology or conversion course from a university of the United
       Kingdom or the Republic of Ireland, from the Council for National Academic Awards,
       from the national Council for Education Awards, from the Higher Education and
       Training Awards Council, or from an institution which is recognised by the Senate for
       this purpose; or
   (ii) an HNC/HND in a relevant engineering or technology course together with at
       least 3 years relevant industrial experience at an appropriate level; formal
       accreditation of prior experiential learning will be established by means of a portfolio
       of evidence submitted by the candidate; and
(b) provide evidence of competence in written and spoken English (GCSE grade C or
equivalent).

Master of Science
Typically applicants must:
(a) have gained
   (i) a second class honours degree or better in a relevant engineering, technology or
       conversion course from a university of the United Kingdom or the Republic of
       Ireland, from the Council for National Academic Awards, from the national Council
       for Education Awards, from the Higher Education and Training Awards Council, or
       from an institution which is recognised by the Senate for this purpose; or
(ii) an equivalent standard (normally 50%) in a Postgraduate Certificate, Graduate Diploma, Graduate Certificate or an approved professional or other qualification; or
(iii) an equivalent standard in a preliminary examination; and
(b) provide evidence of competence in written and spoken English (GCSE grade C or equivalent).

6.2 Exceptionally candidates who do not satisfy the requirements of 6.1 hereof and who hold other qualifications approved by the Senate may be admitted. If deemed appropriate, the Course Selector may call such applicants for interview and avail of the opportunity to seek further information via nominated referees.

7. EXEMPTIONS
Studies pursued and examinations passed in respect of other qualifications awarded by the University or by another university or other educational institution, or evidence from accreditation of prior experiential learning, may be accepted as exempting candidates from part of the programme provided that:
(a) they shall register as students of the University for modules amounting to at least the final third of the credit value of the award at the highest level;
(b) no exemption shall be permitted from the Research Dissertation.

8. ATTENDANCE REQUIREMENTS
8.1 Students are expected to participate fully in all aspects of teaching and learning associated with the programme.

8.2 A normal expectation is a minimum attendance of 80% in any individual module. A student who does not meet this requirement through illness or other cause must immediately notify the Course Director. The student shall state the reasons for the absence and whether it is likely to be prolonged. Where the absence is for a period of more than five working days, and is caused by illness which may affect their studies, the student shall provide appropriate medical certification in accordance with the General Regulations for Students.

8.3 Students who are absent without good cause for a substantial proportion of the programme may be required to discontinue studies, in accordance with the General Regulations for Students.

9. RULES GOVERNING STUDENT CHOICE
Modules are offered as indicated in the attached table. Revisions may be made in accordance with the University’s quality assurance procedures. Module availability in a given session will depend on whether or not there is a viable cohort.

10. EXAMINATION AND ASSESSMENT
10.1 The performance of candidates shall be assessed by the Board of Examiners in accordance with the Regulations Governing Examinations in Programmes of Study.

10.2 Candidates shall be assessed in the modules for which they have enrolled in each year of study. At the discretion of the Board of Examiners, candidates may be required to attend a viva voce examination.

10.3 Within each module, candidates shall be assessed by coursework or a combination of written examination and coursework in accordance with the Programme Structure Table (Section 18).
10.4 The pass mark shall be 50% for each assessment element and for the module overall.

11. SUBMISSION OF COURSEWORK

11.1 Coursework must be submitted by the dates specified by the Course Committee.

11.2 Students may seek prior consent from the Course Committee to submit coursework after the official deadline; such requests must be accompanied by a satisfactory explanation and in the case of illness by a medical certificate. This application shall be made to the Course Director.

11.3 Coursework submitted without consent after the deadline shall not normally be accepted.

11.4 Candidates completing the Research Dissertation must submit an unbound version of their dissertation by the specified date for assessment and two final bound copies to the Course Director by the specified date. The dissertation shall be presented in accordance with the University’s “Guidelines for the Presentation of Dissertation for Master’s Degree Programmes”. The bound copies shall become the property of the University.

11.5 Access to dissertations shall not normally be restricted. Access may be restricted, in exceptional circumstances, for a period of up to two years in the first instance, and for a total period of not more than five years. Such restriction shall be approved in accordance with the procedures described in the “Guidelines for the Presentation of Dissertation for Master’s Degree Programmes”. Access to the abstract of the work shall not be restricted.

12. PROGRESS

12.1 Subject to 13, candidates are required to pass all modules in each year of study in order to proceed to the next stage.

12.2 In order for PGD students to transfer to the Master’s programme, candidates are required to have obtained an overall average of 50%.

13. CONDONEMENT

13.1 Condonement permits candidates to marginally fail in modules without a requirement to repeat assessment. Failure in assessment elements of modules listed below or in the modules overall as specified below and in the table (Section 18) shall not be condoned: MEC809J1 Research Methods MEC868J4 Masters Dissertation.

In considering performance in an academic year, subject to this proviso, the Board of Examiners shall condone failure in modules in accordance with the following principles:

13.2 Minimum Mark
The minimum percentage which must be obtained by a candidate in each assessment element (coursework or written examination) in order to be considered for condonement of failure is 45%.

13.3 Extent of Condonement
In any year, candidates may be permitted to fail in module(s) to a value of no more than one-quarter of the credit value of modules studied.
13.4 Application

13.4.1 In modules which are assessed by coursework or examination only, failure may be condoned provided that there is evidence of sufficient merit in the other modules taken in the year, demonstrated by an overall average mark of at least 55% (with each module weighted according to its credit value);

13.4.2 In modules which are assessed by a combination of coursework and examination, failure in one element may be condoned provided that there is evidence of sufficient merit in the other element demonstrated by an overall mark of at least 55% (with the application of equal weighting between the two module elements). If this evidence is insufficient, an overall average mark of 55% may be accepted (with each module weighted according to its credit value);

13.4.3 In modules which are assessed by a combination of coursework and examination, failure in both elements may be condoned provided that there is evidence of sufficient merit in the other modules taken in the year, demonstrated by an overall average mark of at least 55% (with each module weighted according to its credit value).

13.5 Repeated Assessments
For the purpose of applying condonement only, the actual mark achieved shall be considered and the maximum mark allowed (50%) shall be disregarded.

14. CONSEQUENCES OF FAILURE

14.1 Candidates who fail to satisfy the Board of Examiners in assessment may be permitted at the discretion of the Board to re-present themselves as specified in 14.2 for one or more supplementary examinations and repeat such coursework or other assessment requirements as shall be prescribed by the Board. Such candidates may be exempted at the discretion of the Board from the normal attendance requirements. Where the candidate is required to repeat coursework or to take a supplementary examination the original mark in the failed element shall be replaced by a mark of 50% or the repeat mark, whichever is the lower for the purpose of calculating the module result.

14.2 In each year, the consequences of failure which is not condoned in accordance with 13 hereof shall normally be as follows:

MODE OF STUDY: FULLTIME

<table>
<thead>
<tr>
<th>Failure in module(s) with an overall value of up to and including 60 credit points</th>
<th>Repeat once only of specified examination(s) and/or coursework in the failed module(s). (examinations August)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure in modules with an overall value of more than 60 and not less than 90 credit points</td>
<td>Repeat once only of specified examination(s) and/or coursework in the failed module(s) in the next academic year (examinations January/May) with or without attendance.</td>
</tr>
<tr>
<td>Failure in modules with an overall value of 90 credit points or more (excluding the Research Dissertation module)</td>
<td>Repeat once only of specified examination(s) and/or coursework in the failed module(s) in the next academic year (examinations January/May) with or without attendance, OR withdraw from the programme.</td>
</tr>
<tr>
<td>Failure in Research Dissertation module.</td>
<td>Resubmit their assessment on one occasion only within a period not exceeding 8 months from the original submission date.</td>
</tr>
</tbody>
</table>
MODE OF STUDY: PARTTIME

| Failure in module(s) with an overall value of up to and including 30 credit points | Repeat once only of specified examination(s) and/or coursework in the failed module(s). (examinations August) |
| Failure in modules with an overall value of more than 45 credit points | Repeat once only of specified examination(s) and/or coursework in the failed module(s) in the next academic year (examinations January/May) with or without attendance. |
| Failure in modules with an overall value exceeding 45 credit points (excluding the Research Dissertation module) | Repeat once only of specified examination(s) and/or coursework in the failed module(s) in the next academic year (examinations January/May) with or without attendance, OR withdraw from the programme. |
| Failure in Research Dissertation module. | Resubmit their assessment on one occasion only within a period not exceeding 8 months from the original submission date. |

15. CLASSIFICATION OF FINAL RESULT

15.1 The Programme Structure Table (Section 18) below identifies the contribution of each module/level to the final award.

15.2 Classification of Final Result for Postgraduate Diploma
The following shall be the minimum percentages normally acceptable in determining the overall gradings of candidates.

- Pass with Distinction 70%
- Pass 50%

The Board of Examiners shall recommend the award of a Pass with Distinction to a candidate who achieves an overall average mark of at least 70%, provided that a module mark of at least 70% has been achieved in modules amounting to 60 credit points for the Postgraduate Diploma.

Candidates who fail to satisfy the requirements for the award and have passed four modules amounting to 60 credit points may be recommended for the award of a postgraduate certificate. The four modules must include:

- Research Methods (EEE809J1);
- One from Entrepreneurship (MEC860J2), Research Based Learning 1 (MEC861J1), Research Based Learning 2 (MEC862J2), Work Based Learning (MEC809J1), or Work Based Learning 2 (MEC863J2);
- Two from the Specialist taught modules.

15.3 Classification of Final Result for Master’s Degrees
The following shall be the minimum percentages normally acceptable in determining the overall gradings of candidates.

- Pass with Distinction 70%
- Pass 50%

The Board of Examiners shall recommend the award of a Pass with Distinction to a candidate who achieves an overall average mark of at least 70% or more, with a mark of at
least 70% being achieved in modules amounting to at least 90 credit points, including the Research Dissertation. Candidates who fail the Research Dissertation module and have passed the other eight 15 credit point modules may be assessed for the award of a Postgraduate Diploma in accordance with 15.2.

15.4 Candidates admitted with advanced standing shall be assessed in accordance with these programme regulations using evidence from the accredited prior learning.

16. ILLNESS AND OTHER EXTENUATING CIRCUMSTANCES

16.1 The Board of Examiners may in the case of candidates who are prevented by illness or other sufficient cause from taking or completing the whole or part of the assessment or whose results are substantially affected by illness or other sufficient cause:
   (a) permit the candidate to complete, take, or repeat the examination or coursework or both at an approved subsequent date; or
   (b) deem the candidate to have passed and recommend the award of an Aegrotat Postgraduate Diploma or Master's Degree.

16.2 Before an Aegrotat award is recommended a candidate must have signified that he or she is willing to accept the award.

17. REVISIONS TO REGULATIONS
These regulations may be revised during the student’s period of registration in accordance with the procedures approved by Senate.

18. PROGRAMME STRUCTURE TABLE

<table>
<thead>
<tr>
<th>Sem</th>
<th>Module No.</th>
<th>Module Title</th>
<th>Level</th>
<th>Credit</th>
<th>Status</th>
<th>Condone</th>
<th>Assessment</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EEE809J1</td>
<td>Research Methods</td>
<td>M</td>
<td>15</td>
<td>C</td>
<td>N</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>MEC860J2</td>
<td>Entrepreneurship (Eng.)</td>
<td>M</td>
<td>15</td>
<td>C</td>
<td>Y</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>MEC861J1</td>
<td>Res. Based Learning 1</td>
<td>M</td>
<td>15</td>
<td>C(F/T)</td>
<td>Y</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>MEC862J2</td>
<td>Res. Based Learning 2</td>
<td>M</td>
<td>15</td>
<td>C(F/T)</td>
<td>Y</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>1/2</td>
<td>MEC863J2</td>
<td>Work Based Learning 1</td>
<td>M</td>
<td>15</td>
<td>C(P/T)</td>
<td>Y</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>1/2</td>
<td>MEC864J2</td>
<td>Work Based Learning 2</td>
<td>M</td>
<td>15</td>
<td>C(P/T)</td>
<td>Y</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>1/2</td>
<td>BME801J1/2</td>
<td>Biomaterials</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>1/2</td>
<td>BME802J1/2</td>
<td>Biomaterials</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>1/2</td>
<td>BME808J1/2</td>
<td>Tissue Engineering</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>1/2</td>
<td>EEE824J1/2</td>
<td>RF Circuit Design</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>30 70</td>
<td>1/8 1/12</td>
</tr>
<tr>
<td>1/2</td>
<td>EEE826J1/2</td>
<td>Digital Signal Processing</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>50 50</td>
<td>1/8 1/12</td>
</tr>
<tr>
<td>1/2</td>
<td>EEE822J1/2</td>
<td>C++ &amp; OOP</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>1/2</td>
<td>MEC808J1/2</td>
<td>Manufacturing Systems</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>50 50</td>
<td>1/8 1/12</td>
</tr>
<tr>
<td>1/2</td>
<td>MEC864J1/2</td>
<td>C++ &amp; OOP</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>50 50</td>
<td>1/8 1/12</td>
</tr>
<tr>
<td>1/2</td>
<td>MEC832J1/2</td>
<td>Quality Improvement</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>25 75</td>
<td>1/8 1/12</td>
</tr>
<tr>
<td>1/2</td>
<td>EEE830J1/2</td>
<td>Micro &amp; Nano-Scale Dev.</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>50 50</td>
<td>1/8 1/12</td>
</tr>
<tr>
<td>1/2</td>
<td>EEE831J1/2</td>
<td>Nanoscale Analysis &amp; Met.</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>1/2</td>
<td>EEE832J1/2</td>
<td>Micro &amp; Nano-Scale Fab.</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>50 50</td>
<td>1/8 1/12</td>
</tr>
<tr>
<td>1/2</td>
<td>MEC865J1</td>
<td>Polymer Technology</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>50 50</td>
<td>1/8 1/12</td>
</tr>
<tr>
<td>1/2</td>
<td>MEC866J2</td>
<td>Composite Engineering</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>50 50</td>
<td>1/8 1/12</td>
</tr>
<tr>
<td>1/2</td>
<td>MEC867J1/2</td>
<td>Process Product Opt.</td>
<td>M</td>
<td>15</td>
<td>O/C</td>
<td>Y</td>
<td>50 50</td>
<td>1/8 1/12</td>
</tr>
<tr>
<td>4</td>
<td>MEC868J4</td>
<td>Masters Dissertation</td>
<td>M</td>
<td>60</td>
<td>O/C</td>
<td>N</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>