General Regulations for Higher Degrees in the Faculty of Engineering and Regulations for Doctoral Training Centres in the Faculty

The content of our courses is reviewed annually to make sure it’s up-to-date and relevant. Individual modules are occasionally updated or withdrawn. This is in response to discoveries through our world-leading research; funding changes; professional accreditation requirements; student or employer feedback; outcomes of reviews; and variations in staff or student numbers. In the event of any change the University will consult and inform students in good time and will take reasonable steps to minimise disruption.

GENERAL REGULATIONS FOR HIGHER DEGREES IN THE FACULTY OF ENGINEERING AND REGULATIONS FOR DOCTORAL TRAINING CENTRES IN THE FACULTY

1. The programmes of study within the Faculty shall, subject to any provision in the Regulations for particular programmes of study, extend over:
   (a) one year for both a Masters’s Degree and a Postgraduate Diploma for a full-time student, who will complete all components of the programme within the minimum period of study; or
   (b) not less than three consecutive years for a part-time student for a Master’s Degree, who will complete all components of the programme within the three year period; or
   (c) not less than two consecutive years for a part-time student for a Postgraduate Diploma, who will complete all components of the programme within the two year period.

REGULATIONS FOR DOCTORAL TRAINING CENTRES IN THE FACULTY OF ENGINEERING

Regulations are presented in course code order. An alphabetical index of course titles is as follows:

- MATR50 Advanced Metallic Systems PhD
- MATR56 Advanced Metallic Systems EngD
- DTER03 E-Futures PhD
- CPER05 Energy Storage And Its Applications PhD
- MECR07 Integrated Tribology (iTCDT) PhD
- MECR90 Machining Science
- DNT03 Nuclear Fission PhD

DTER03 E-FUTURES (PhD) (Full-Time)
DTET10 PROFESSIONAL SKILLS (PGDip) (Part-Time)

1. In Year One a student will take
   (a) FCE6000 F7 Carbon Challenge 5
   (b) FCE6001 F7 Summer School 5

2. In order to proceed to Year Two a student must pass not less than one hundred and sixty credits in respect of units listed at 1(a) and (b) above.

3. A student who has been awarded one hundred and twenty credits in respect of units listed at 1(a) (above) and does not proceed to Year Two will be eligible for the award of Postgraduate Diploma in E-futures (DTET01).

4. In Years Two to Four a student will pursue a programme of research in accordance with the General Regulations for Higher Degrees by Research, and will present a thesis in accordance with those Regulations.

5. In Years Two to Four a candidate shall take
   FCE6007 F7 Skills for Industry 15
   FCE6009 F7 Skills in Action 10
   FCE607 F7 Career Skills 5
   FCE609 F7 Public Engagement Project 10

6. A student will successfully complete the Doctoral Training Centre’s upgrading procedures before progressing to the third year of study.

7. A student who has been awarded one hundred and twenty credits in respect of 1(a) and 5 above will be awarded the Postgraduate Diploma in Professional Skills (DTET10).
MATR50 ADVANCED METALLIC SYSTEMS (Full-Time) (PhD) and MATR56 (Full-Time) (EngD) (DTC) (Joint programme with The University of Manchester)

1. In Year One a PhD candidate shall take units listed in 1(a) and (b) below. In Year One an EngD candidate shall take units listed in 1(a) and either (b) or (c) below. Alternative courses to the same credit value may be substituted at the discretion of the CDT Director.

(a) MAT6292 F7 Structure, Properties and Modelling of Metallic Materials 15
MAT6294 F7 Transformative Technologies 10
MAT6511 F7 Phase Transformations in Materials Processing 15
MATS64571 F7 High Performance Alloys 15
MATS64601 F7 Materials Performance – Life Cycle Design 15

(b) MAT6278 F7 Advanced Metals Manufacturing 20
MAT6299 F7 Mini Research Project and Experimental Skills 30

(c) MAT6289 F7 Extended Mini Research Project and Experimental Skills 50

*MATS codes denote University of Manchester units

2. In order to proceed to Year Two a student will satisfy the requirements of the CDT Academic Progression Committee.

3. A student will successfully complete the Doctoral Training Centre’s upgrading procedures before being upgraded to PhD status.

4. A candidate who has been awarded one hundred and twenty credits as described at 1 above and does not proceed to Year Two may become instead a candidate for the award of MSc Advanced Metallic Systems (MATTXX) and in addition to 1(a) above shall take EITHER 4(a) or 4(b) below:

(a) MAT6278 F7 Advanced Metals Manufacturing 20
MAT6XXX F7 Research Project 90

(b) MAT6XXXX F7 Research Project 110

5. A candidate who has been awarded sixty credits in respect of 1(a) above and does not proceed to Year Two shall be eligible for the award of Postgraduate Certificate in Advanced Metallic Systems (MATTXX).

6. In Years Two to Four a candidate shall pursue a programme of research in accordance with the General Regulations for Higher Degrees and shall present a thesis in accordance with those Regulations.

7. In Years One to Four a candidate shall take the Postgraduate Diploma in Personal and Professional Skills (DTMT10).

DTNT03 NUCLEAR FISSION (PhD) (Full-Time) (Joint programme with the University of Manchester)

1. In Year One a student will take

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MAT6801</td>
<td>Introduction to the Chemistry and Physics of the Nuclear Fuel Cycle</td>
<td>15</td>
</tr>
<tr>
<td>MAT6802</td>
<td>Materials Science in the Nuclear Fuel Cycle</td>
<td>15</td>
</tr>
<tr>
<td>MAT6803</td>
<td>Site Visits, Winter School and Skills Training</td>
<td>15</td>
</tr>
<tr>
<td>MAT6804</td>
<td>Environmental Radiochemistry and the Science of Radioactive Waste Disposal</td>
<td>15</td>
</tr>
<tr>
<td>MAT6805</td>
<td>DTC Project Rotation 1</td>
<td>45</td>
</tr>
<tr>
<td>MAT6806</td>
<td>DTC Project Rotation 2</td>
<td>45</td>
</tr>
<tr>
<td>MAT6800</td>
<td>Extended Research Project</td>
<td>30</td>
</tr>
</tbody>
</table>

2. In order to proceed to Year Two a student must pass not less than one hundred and thirty-five credits in respect of units listed at 1 above.

3. A student who has been awarded not less than one hundred and thirty-five credits in respect of units listed at 1 above and does not proceed to Year Two may become instead a student for the award of MSc(Res) Nuclear Fission (DTNT02) and in addition will take

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>MAT6800</td>
<td>Extended Research Project</td>
<td>30</td>
</tr>
</tbody>
</table>

4. A student who has been awarded one hundred and twenty credits in respect of units listed at 1 above and does not proceed to Year Two will be eligible for the award of Postgraduate Diploma in Nuclear Fission (DTNT01).

5. In Years Two to Four a student will pursue a programme of research in accordance with the General Regulations for Higher Degrees by Research, and will present a thesis in accordance with those Regulations.

6. A student will not be permitted to complete either a Postgraduate Diploma in Professional Management and Leadership Skills or forty-five credits of the Doctoral Development Programme.

DTMT10 PERSONAL AND PROFESSIONAL SKILLS (Part-Time) (PGDip) (Joint programme with The University of Manchester)

1. In Year One a student will take units listed below.

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCE610</td>
<td>Personal Effectiveness Skills</td>
<td>10</td>
</tr>
<tr>
<td>FCE6010</td>
<td>Doctoral Communication Skills</td>
<td>15</td>
</tr>
<tr>
<td>MAT6294</td>
<td>Transformative Technologies</td>
<td>10</td>
</tr>
<tr>
<td>MAT6296</td>
<td>Introduction to Research Skills</td>
<td>10</td>
</tr>
</tbody>
</table>

2. In Year Two a PhD candidate will take units listed in 2(a). An EngD student will take units listed in 2(b).
CPER05 ENERGY STORAGE AND ITS APPLICATIONS (PhD) (Full-Time)  
(Joint programme with the University of Southampton)

For students whose registration was in the academic year 2014-15

1. In Year One a student will take
   CPE604 F7 An Introduction to Energy and the Environment 15
   CPE610 F7 Energy Storage CDT Mini-Project 15
   CPE612 F7 Applied Energy Storage 30
   CPE650 F7 Research project (Sheffield) 60
   FEEG6019 F7 Energy Storage Applications 30
   PSY6081 F7 The Social Science of Energy Storage 15
   SESG6041 F7 Introduction to Energy Technologies, Environment and Sustainability 15
   
   Delivered during the second, third and fourth year
   CPE613 F7 Skills in Action 15
   CPE614 Public Engagement 5
   CPE615 Researcher Development 30
   FCE6007 Skills for Industry 15
   FCE610 Personal Effectiveness Skills 10
   FEEG6018 Personal & Professional Skills 15
   MEC6314 Innovation Management 10
   MEC6414 Technology Strategy and Business Planning 10
   MEC6428 Professional Responsibility of Engineers 10

   In order to proceed to Year Two a student must pass not less than one hundred and fifty credits in respect of units listed at 1 above.

2. A student who has been awarded one hundred and eighty credits in respect of units listed at 1 above will be eligible for the Postgraduate Diploma in Personal and Professional Skills.

3. In Year Two a student will pursue a programme of research in accordance with the General Regulations for Higher Degrees by Research, and will present a thesis in accordance with those Regulations.

For students whose registration was in the academic year 2015-16

1. In Year One a student will take
   CPE604 F7 Global Energy Systems 15
   CPE610 F7 Energy Storage CDT Mini-Project 15
   CPE612 F7 Applied Energy Storage 30
   CPE650 F7 Research project (Sheffield) 60
   FEEG6018 F7 Professional and Research Skills 15
   FEEG6019 F7 Energy Storage Applications 30
   SESG6041 F7 Introduction to Energy Technologies, Environment and Sustainability 15

   Delivered during the second, third and fourth year
   CPE613 F7 Skills in Action 15
   CPE614 Public Engagement 5
   CPE615 Researcher Development 30
   FCE6007 Skills for Industry 15
   FCE610 Personal Effectiveness Skills 10
   MEC6314 Innovation Management 10
   MEC6414 Technology Strategy and Business Planning 10
   MEC6428 Professional Responsibility of Engineers 10
   PSY6081 F7 Social Science of Energy Storage 15

4. In order to proceed to Year Two a student must pass not less than one hundred and fifty credits in respect of units listed at 1 above.

5. A student who has been awarded one hundred and eighty credits in respect of units listed at 2 above will be eligible for the Postgraduate Diploma in Energy Storage and its applications (CPET36).

6. In the event of failure in CPE650 Research project (Sheffield) at the first attempt any resubmission is subject to the approval of the Board of Examiners.

7. A student who has been awarded one hundred and twenty credits in respect of units listed at 3(a) and 3(b) above will be eligible for the Postgraduate Diploma in Personal and Professional Skills.

8. A student who has been awarded sixty credits in respect of units listed at 3(b) above will be eligible for the Postgraduate Certificate in Personal and Professional Skills.

9. In Years Two to Four a student will pursue a programme of research in accordance with the General Regulations for Higher Degrees by Research, and will present a thesis in accordance with those Regulations.

MECR07 Integrated Tribology (PhD) (Full-Time)  
(Joint programme with the University of Leeds)

1. In Year One a student registered at The University of Sheffield will take

   (a) MEC6907 F7 Tribology Masterclass 0
   MEC6908 F7 Professional Skills 30
   MEC6905 F7 Mini Project - Group 30
   MEC6906 F7 Mini Project – Individual 30

   (b) plus twenty credits from (i)

   (i) MAT3430 F6 Materials for Biological Devices 10
   MEC6403 F7 Reciprocating Engines 10
   MEC6429 F7 Mechanical Engineering of Railways 10
   MEC6440 F7 Advanced Finite Element Modelling 10

   plus ten credits from (ii)

   (ii) MAT373 F6 Surface degradation and protection 10
   MAT6336 F7 Surfaces and Coatings 10

2. At (b) above, students may substitute other units with permission of the Programme Manager.

3. A student who has been awarded one hundred and twenty credits in respect of units listed at (a) and (b) above and who does not complete the requirements of the Degree of PhD will be eligible for the Postgraduate Diploma in Integrated Tribology (MEC).

4. Before proceeding to Year Two a student will complete MEC6908 Professional Skills.

5. In order to proceed to Year Two a student will satisfy the requirements of the CDT Academic Progression Committee.
6. A student will successfully complete the Doctoral Training Centre’s upgrading procedures before being upgraded to PhD status.

7. In Years Two to Four a student will pursue a programme of research in accordance with the General Regulations for Higher Degrees by Research, and will present a thesis in accordance with those Regulations.

MECR90 MACHINING SCIENCE (Full Time) (PhD)
MECT07 DIPLOMA IN MACHINING SCIENCE (PG Dip) (Part-Time)

1. In Year One a student will take

(a) FCE610 F7 Personal Effectiveness 10
MEC6908 F7 IDC Personal and Professional Skills Development 20

(b) units to the value of ten credits from the following
MEC6314 F7 Innovation Management 10

(c) units to the value of thirty credits from the following
ACS329 F6 Robotics 10
MAT6333 F7 Aerospace Materials Part 1 10
MAT6444 F7 Advanced Materials Manufacturing Part 1 10
MEC6405 F7 Experimental Stress Analysis 10
MEC6406 F7 Engineering Composite Materials 10
MEC6409 F7 Signal Processing and Instrumentation 10
MEC6410 F7 Structural Vibration: Analysis and Practice 10
MEC6411 F7 Tribology of Machine Elements 10
MEC6415 F7 Condition Monitoring 10
MEC6440 F7 Advanced Finite Elements Modelling 10
MEC6444 F7 Additive Manufacturing – Principles and Applications 1 10
MEC6445 F7 Additive Manufacturing – Principles and Applications 2 10
MEC6452 F7 Advanced Topics in Machining 10

(d) MEC6901 F7 IDC Machining Science Mini-Project 1 30
MEC6902 F7 IDC Machining Science Mini-Project 2 30
MEC6903 F7 IDC Machining Science Mini-Project 3 30

Other units may be substituted for those listed in 1(c) at the discretion of the Academic Director of the IDC.

2. In order to proceed to Year Two a student must pass one hundred and sixty credits in respect of units listed at 1(a), (b), (c), and (d) above.

3. A student who has been awarded seventy credits in respect of 1(a), (b), and (c) above and does not proceed to Year Two, may instead become a student for the award of Postgraduate Diploma in Machining Science MECT07 PG Dip) and in addition to 1(a), (b) and (c) above will take
MEC6904 F7 IDC Machining Science Research Project 50

4. In Years Two to Four a student will pursue a programme of research in accordance with the General Regulations for Higher Degrees and will present a thesis in accordance with those Regulations.

5. In Years Two to Four a student will undertake further academic and professional skills related modules and activities appropriate to their studies, and also present at the AMRC Technical Fellows or IDC Student Conference

6. A student will successfully complete the Industrial Doctorate Centre’s confirmation procedures before progressing to the third year of study.