



UCL Academic Manual 2015-16

Chapter 8: Derogations and Variations

## Doctor in Engineering (EngD) Additional Regulations

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The following regulations apply to students enrolled on Doctor of Engineering programmes at UCL **in addition to** the main Research Degrees regulations detailed in the UCL Academic Manual and in particular in Chapter 1: Admissions, Registration and Student Conduct and Chapter 5: Assessment Framework for Research Programmes.

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### 1 Doctor in Engineering (EngD) in Biochemical Engineering and Bioprocess Leadership

#### 1.1 Standard Entrance Qualifications

1. The normal minimum entrance qualifications for registration for the degree of Doctor in Engineering in the field of Biochemical Engineering and Bioprocess Leadership is the award of a first or an upper second class Honours degree or equivalent overseas qualification in biological sciences, chemistry, chemical engineering, biochemical engineering, biotechnology, mechanical engineering, electronics and electrical engineering or any related discipline.

2. Relevant postgraduate or industrial experience (especially as gained in the Bioprocessing industry) may be acceptable where the first degree is a lower second-class Honours degree or equivalent overseas qualification.

### **MRes Progression to the EngD**

3. Students holding the MRes in Bioprocessing from UCL will be exempted from the first year of the EngD programme. Students holding an MRes or an equivalent qualification from an external institute may be admitted up to a year after the commencement of the taught element of the EngD programme and be exempted from part or the entire taught element of the MRes programme with the permission of the Programme Director.
4. A student holding an MRes or an equivalent qualification from an external institute, who has been exempted from part or the entire taught element of the MRes programme, cannot then be awarded the MRes if they withdraw from or fail the EngD.

### **Further guidance**

1. For automatic progression from MRes to PhD/EngD, students should achieve an average mark of not less than 60% in the independent, original research components of the programme, and not less than 50% in the taught elements.
  - i) This regulation relates to automatic progression from MRes to MPhil/PhD or EngD programmes.
  - ii) However, in cases where a student did not meet these requirements, but who has the support of the MPhil/PhD or EngD programme organisers, a case in writing can be made to the Chair of the Research Degree Committee for the consideration of suspension of regulations on a case-by-case basis.
2. The length of the MRes programme should be extended to one calendar year and one month to allow Boards of Examiners time to determine awards prior to students registering on the associated EngD or MPhil/PhD programme.
3. MRes students who fail the taught components examined in and before June should be offered their resit opportunity before or in August of the same year.
4. MRes students who are not awarded the degree after the first attempt and the resit attempt should not progress to the associated EngD programme and would be required to leave UCL.
5. MRes students who fail the dissertation should not register on the EngD programme in the following academic year but remain on the MRes and resubmit the dissertation by the end of the first term in the following academic year. The Board would then consider the award for these students in January, when they would be allowed

to register on the EngD if they passed. If, as a result, they missed taught components which formed part of the EngD registration, these should be followed at the point when they are next available.

## 1.2 Duration of Programme of Study

1. Full-time: four calendar years or three calendar years for students holding the MRes (Chapter 1, Section 2.3: MRes Progression to the EngD).

## 1.3 Curriculum

1. The programme of study for the degree of Doctor in Engineering in the field of Biochemical Engineering and Bioprocess Leadership includes formally taught elements which provide academic underpinning for the research undertaken. Candidates are required to complete modules from each of three main elements and undertake substantial research work resulting in a thesis and will be given an oral examination in accordance with Chapter 5: Assessment Framework for Research Programmes.

### **Further guidance**

- i) Students who have progressed from an MRes to the EngD are not required to take the year one formally taught elements.

### **Formally Taught Elements (four-year EngD students)**

2. The formal taught part of the EngD programme is comprised of four elements which provide (i) the underlying fundamental skills for research studies in bioprocessing and biochemical engineering (ii) the methodology for the translation of such skills into real engineering outcomes (iii) skills underlying the management and delivery of a research programme and (iv) evidence of original research via submission of research thesis. They must have passed modules to a minimum value of 120 credits in order to qualify for submission of the thesis. The modules passed in order to qualify for submission of the thesis must include modules to prescribed credit values taken from each of the three elements (i)-(iii). Normally, students registered on the EngD will have satisfied the requirements for the MRes in the first year of the EngD programme. However, there may be instances where the full requirements are not satisfied until later in the programme. Provided that all the requirements are satisfied by the time they exit the programme, such students may be awarded the MRes if they should then fail to meet the requirements of the EngD.

## **Thesis**

3. The thesis shall be submitted in accordance with the Chapter 5: Assessment Framework for Research Programmes.

## **1.4 Assessment and Final Examination**

1. Assessments qualifying a candidate for submission of a thesis shall take place within the period of the overall programme and shall be by written examination or coursework, as prescribed for each individual module.
2. All assessments will be overseen by an examiner external to UCL. A candidate failing any assessment (whether by written paper or by coursework) will be permitted to re-enter the examination for the module in question on one occasion only.
3. The award of the degree shall be dependent on the thesis, which a candidate may not submit until he/she has successfully completed all the other elements of the programme as detailed above, and the oral examination. The thesis must meet the same requirements as those prescribed in Chapter 5: Assessment Framework for Research Programmes.
4. The oral examination shall be conducted by at least two examiners, at least one of whom shall be external to UCL. The examination will be designed to test the thesis against the criteria above and will further examine the candidate's conception and understanding of the integration of all elements of the programme and their related assessment.
5. Students who register as MRes students and subsequently decide to continue to EngD may do so at the end of the first year, provided that they have satisfied the requirements for the MRes degree (as stated above).
6. Students who register on the EngD and are unable to fulfil the requirements of the EngD will be awarded the MRes degree provided that they have satisfied the requirements of the MRes degree.
7. An EngD student who fails the thesis and fails on resubmission may still be awarded an MRes subject to the requirements for MRes as stated (above) being met. Such an award would be at the recommendation of the EngD Board of Examiners. The award would be made by the whole Board of Examiners and would not be something recommended by the examiners of the thesis in any way.

## 1.5 Dates of Assessment and Final Examination

1. Modules for the taught part of the programme for four year EngD students will be assessed by the methods and at the dates indicated for the module in question.
2. Submission of the thesis shall be by the end of the final year of the programme or normally within a calendar year of the date of completion of the programme of study.

## 2 Doctor in Engineering (EngD) in Communications

### 2.1 Standard Entrance Qualifications

1. The normal minimum entrance qualifications for registration for the degree of Doctor in Engineering in the field of Communications is the award of a first or an upper second class Honours degree or equivalent overseas qualification in a relevant discipline, e.g. electronic engineering, electrical engineering, communications engineering, computer science, physics, mathematics. Industrial or postgraduate experience may be taken into consideration where the first degree is a lower second class Honours degree or equivalent overseas qualification.

#### **MRes Progression to the EngD**

2. Students holding the MRes in Telecommunications or with equivalent qualification/experience may be admitted up to a year after the commencement of the taught programme and be exempted from part or all of the taught programme with the permission of the Programme Director.

#### **Further guidance**

1. For automatic progression from MRes to PhD/EngD, students should achieve an average mark of not less than 60% in the independent, original research components of the programme, and not less than 50% in the taught elements.
  - i) This regulation relates to automatic progression from MRes to MPhil/PhD or EngD programmes.

- ii) However, in cases where a student did not meet these requirements, but who has the support of the MPhil/PhD or EngD programme organisers, a case in writing can be made to the Chair of the Research Degree Committee for the consideration of suspension of regulations on a case-by-case basis.
2. The length of the MRes programme should be extended to one calendar year and one month to allow Boards of Examiners time to determine awards prior to students registering on the associated EngD or MPhil/PhD programme.
3. MRes students who fail the taught components examined in and before June should be offered their resit opportunity before or in August of the same year.
4. MRes students who are not awarded the degree after the first attempt and the resit attempt should not progress to the associated EngD programme and would be required to leave UCL.
5. MRes students who fail the dissertation should not register on the EngD programme in the following academic year but remain on the MRes and resubmit the dissertation by the end of the first term in the following academic year. The Board would then consider the award for these students in January, when they would be allowed to register on the EngD if they passed. If, as a result, they missed taught components which formed part of the EngD registration, these should be followed at the point when they are next available.

## 2.2 Duration of Programme of Study

1. Full-time: four calendar years or three calendar years for students holding the MRes (see Chapter 1, Section 2.3: MRes Progression to the EngD).

## 2.3 Curriculum

1. The programme of study for the degree of Doctor in Engineering in the field of Communications includes formally taught elements which provide academic underpinning for the research undertaken. Candidates are required in the first year normally to complete taught elements and to complete a written report on research work. In the three subsequent years they complete three taught/training modules per year. They must undertake substantial research work resulting in a thesis and will be given an oral examination in accordance with Chapter 5: Assessment Framework for Research Programmes.

### **Further guidance**

- i) Students who have progressed from an MRes to the EngD are not required to take the year one formally taught elements.

### **First-Year Elements (four-year students)**

2. Candidates are normally required in the first year to follow a programme of taught courses and research appropriate to the MRes in Telecommunications. There are three elements: (i) technical taught course components, (ii) generic and transferable skills elements and (iii) research work. Students must have completed all three elements to the satisfaction of the examiners in order to progress beyond the first year of the programme.

### **Taught/Training Elements**

3. Candidates are normally required to complete three taught/training modules per year covering technical and more general professional development according to individual development needs' assessment of IEE Training Accreditation arrangements. Of these at least one module each year must normally be technical in nature and one concerned with personal/business skills.
4. Students must have completed and attained a suitable standard in the taught/training elements and have demonstrated that they have achieved a satisfactory standard in the research part of the programme in order to qualify for submission of the thesis.

### **Thesis**

5. The thesis shall be submitted in accordance with Chapter 5: Assessment Framework for Research Programmes.

## **2.4 Assessment and Final Examination**

1. Assessments for year one (for four year students) shall normally be identical with those for the MRes in Telecommunications and shall include a research report and oral examination. Assessments for the taught/training modules in years 2 to 4 shall take place within the period of the overall programme and shall be by written examination or coursework, as prescribed for each individual module.
2. All assessments will be overseen by an examiner external to UCL. A candidate failing any assessment (whether by written paper or by coursework) will be permitted to re-enter the examination for the module in question on one occasion only.
3. The award of the degree shall be dependent on the thesis, which a candidate may not submit until he/she has successfully completed all the other elements of the programme as detailed above, and

the oral examination. The thesis must meet the same requirements as those prescribed in Chapter 5: Assessment Framework for Research Programmes.

4. The oral examination shall be conducted by at least two examiners, one of whom shall be external to UCL. The examination will be designed to test the thesis against the criteria above and will further examine the candidate's conception and understanding of the integration of all elements of the programme and their related assessment.

## 2.5 Dates of Assessment and Final Examination

1. Modules for the taught part of the programme for four year students will be assessed by the methods and at the dates indicated for the module in question.
2. Submission of the thesis shall be by the end of the final year of the programme or within a calendar year of the date of completion of the programme of study.

# 3 Doctor in Engineering (EngD) in Environmental Engineering Science (ENVES)

## 3.1 Entry Requirements

1. A relevant BSc, BEng, BA, MEng, at upper second class or above or MSc in science or engineering, as appropriate for research topics. Relevant postgraduate or industrial experience may be taken into consideration when the first degree is a lower second class honours degree or equivalent overseas qualification. An exit award at MRes level is not offered on this programme.

## 3.2 Duration of the Programme

1. 4 calendar years full time.



## 3.3 Curriculum

1. The specific taught courses to be taken by each of the Research Engineers will be decided in consultation with the industrial sponsors. The aim is to equip the research engineers with management, technical, design and problem solving skills.
  - i) Admission to the programme may be at any time during the academic year which may mean that some compulsory courses will not be taken until the 2nd year, depending on start date.
  - ii) Candidates are required in the first year normally to complete taught elements, a research and transferable skills programme, a group project, and to complete a written report on research work. In the second year, candidates must complete a further research report and, in the second and subsequent years candidates must complete additional taught courses. To complete the EngD, candidates must undertake substantial research work resulting in a thesis, and undergo a final oral examination. All research carried out during any period of study for the Environmental Engineering Science Doctorate may be included in the thesis provided it has not been presented for award of any other degree.

### Technical Courses

2. Compulsory technical taught course:
  - Either CIVLR002 Environmental Integrated Design
  - Or CIVLG001 Integrated Design
  - Plus CIVLR002 Environmental Impact and Resource Management
  - Optional technical courses from a range across UCL.
3. Transferable skills taught courses include:
  - Compulsory course provided by the CALT:
    - Personal and professional skills in research practice (PPSRP)
  - At least one of the following courses provided by the Management Studies Centre:
    - MASTC01/GC01 Project Management
    - MASTD03/GD03 Product Innovation in Organisations
    - MASTD05/GD05 The Business Plan
    - MASTD02/GD02 New Ventures Business

### First-Year Elements

4. Candidates are normally required in the first year to follow a programme of taught courses, professional and research training, group project work, and research, structured as three components:

- a) the underlying technical knowledge and skills needed for research in the field of study;
- b) the generic research, professional and transferable skills required for the translation of such skills into scientific and engineering outcomes and for the management and delivery of a research programme, and
- c) research work. In order to progress beyond the first year of the EngD programme, normally candidates must successfully complete respectively: (i) an environmental integrated design project and (ii) professional and transferable skills course (iii), a research report of not less than 10,000 and not more than 25, 000 words and presentation.

### **Second-Year Elements**

- 5. Candidates are normally required to complete one or two additional 10 credit taught postgraduate courses or equivalent modules, to complete a second research report of not less than 10,000 and not more than 25,000 words and presentation, “based on their industrial activity” and to undergo a preliminary oral examination on their research work.

### **Taught Courses and Training Elements**

- 6. In subsequent years, candidates must normally complete further approved postgraduate courses or modules so that at least 120 credits or equivalent modules are completed during the four years of the EngD programme. They should normally, in the second and third years of the programme, also follow an appropriate scheme of continuing professional development to supplement the research, professional and transferable skills programme taken in the first year. Candidates must have achieved a satisfactory standard in the research part of the programme in order to qualify for submission of the thesis.

### **Thesis**

- 7. The thesis shall be submitted in accordance Chapter 5: Assessment Framework for Research Programmes.

## **3.4 Assessments and Final Examinations**

- 1. Assessments qualifying a candidate for submission of a thesis shall take place within the period of the overall programme and shall be by written examinations or coursework, as prescribed for each individual postgraduate course or module.
- 2. All assessments will be overseen by an examiner external to UCL. A candidate failing any assessments (whether by written paper or

by coursework) will be permitted to re-enter the examinations for the course or module in question on one occasion only.

3. The award of the degree shall be dependent on the thesis, which a candidate may not submit until he/she has successfully completed all the other elements of the programme as detailed above, and dependent on the final oral examination. The thesis must meet the same requirements as those prescribed in Chapter 5: Assessment Framework for Research Programmes.
4. The final oral examination shall be conducted by at least two examiners, at least one of whom shall be external to UCL. The examination will be designed to test the thesis against the criteria above and will further examine the candidate's conception and understanding of the integration of all elements of the programme and their related assessment.

### 3.5 Dates of Assessment and Final Examination

1. Modules for the taught part of the programme will be assessed by the methods and at the dates indicated for the module in question.
2. Submission of the thesis shall be by the end of the final year of the programme or within a calendar year of the date of completion of the programme of study.

## 4 Doctor in Engineering (EngD) in Virtual Environments Imaging and Visualisation (VEIV)

### 4.1 Standard Entrance Qualifications

1. The normal minimum entrance qualification for registration for the degree of Doctor in Engineering in the field of Virtual Environments, Imaging and Visualisation is the award of a first or upper second class Honours degree or equivalent overseas qualification in a relevant discipline such as: computer science, architecture, engineering (electronic, electrical, mechanical, civil, etc.), physical sciences (physics, chemistry, astronomy, etc.), mathematics or any related discipline. Overseas candidates must also hold an appropriate qualification in English for speakers of other languages. Relevant postgraduate or industrial experience

may be taken into consideration where the first degree is a lower second-class Honours degree or equivalent overseas qualification.

## **MRes Progression to the EngD**

2. Candidates holding the MRes in Computer Vision, Image Processing, Graphics and Simulation or with equivalent qualifications/experience may, in exceptional circumstances, for example where an appropriate Masters Research project has been carried out, be admitted up to a year after commencement of the taught programme and can be exempted from part or all of the EngD taught programme with permission of the EngD programme Director.

## **Further guidance**

1. For automatic progression from MRes to PhD/EngD, students should achieve an average mark of not less than 60% in the independent, original research components of the programme, and not less than 50% in the taught elements.
  - i) This regulation relates to automatic progression from MRes to MPhil/PhD or EngD programmes.
  - ii) However, in cases where a student did not meet these requirements, but who has the support of the MPhil/PhD or EngD programme organisers, a case in writing can be made to the Chair of the Research Degree Committee for the consideration of suspension of regulations on a case-by-case basis.
2. The length of the MRes programme should be extended to one calendar year and one month to allow Boards of Examiners time to determine awards prior to students registering on the associated EngD or MPhil/PhD programme.
3. MRes students who fail the taught components examined in and before June should be offered their resit opportunity before or in August of the same year.
4. MRes students who fail the dissertation should not register on the EngD programme in the following academic year but remain on the MRes and resubmit the dissertation by the end of the first term in the following academic year. The Board would then consider the award for these students in January, when they would be allowed to register on the EngD if they passed. If, as a result, they missed taught components which formed part of the EngD registration, these should be followed at the point when they are next available.

## 4.2 Duration of Programme of Study

1. Full-time: four calendar years or three calendar years for students holding the MRes (see Chapter 1, Section 2.3: MRes Progression to the EngD).

## 4.3 Curriculum

1. The programme of study for the degree of Doctor in Engineering in the field of Virtual Environments, Imaging and Visualisation includes formally taught elements which provide academic underpinning for the research undertaken. Candidates are required in the first year normally to complete taught elements, a research and transferable skills programme, a group project, and to complete a written report on research work. In the second year, candidates must complete a further research report and, in the second and subsequent years candidates must complete additional taught courses. To complete the EngD, candidates must undertake substantial research work resulting in a thesis, and undergo a final oral examination in accordance with Chapter 5: Assessment Framework for Research Programmes. All research carried out during any period of study for the VEIV Engineering Doctorate may be included in the thesis provided it has not been presented for award of any other degree.

### **Further guidance**

- i) Students who have progressed from an MRes to the EngD are not required to take the year one formally taught elements.

### **First-Year Elements (four-year students)**

2. Candidates are normally required in the first year to follow a programme of taught courses, professional and research training, group project work, and research, structured as three components: (i) the underlying technical knowledge and skills needed for research in the field of study, (ii) the generic research, professional and transferable skills required for the translation of such skills into scientific and engineering outcomes and for the management and delivery of a research programme, and (iii) research work. In order to progress beyond the first year of the EngD programme, candidates must successfully complete respectively: (i) seven half-unit taught postgraduate courses or equivalent modules, including compulsory core courses and modules; (ii), professional and transferable skills courses and group project work; and, (iii), a research report of not less than 10,000 and not more than 25,000 words and presentation.

## **Second-Year Elements**

3. Candidates are normally required to complete one or two additional half-unit taught postgraduate courses or equivalent modules, to complete a second research report of not less than 10,000 and not more than 25,000 words and presentation, and to undergo a preliminary oral examination on their research work.

## **Taught Courses and Training Elements**

4. In subsequent years, candidates must normally complete further approved postgraduate courses or modules so that at least ten such half-unit courses or equivalent modules are completed during the four-years of the EngD programme. They should normally, in the second and third years of the programme, also follow an appropriate scheme of continuing professional development to supplement the research, professional and transferable skills programme taken in the first year. Candidates must have achieved a satisfactory standard in the research part of the programme in order to qualify for submission of the thesis.

## **Thesis**

5. The thesis shall be submitted in accordance with Chapter 5: Assessment Framework for Research Programmes.

## **4.4 Assessments and Final Examinations**

1. Assessments qualifying a candidate for submission of a thesis shall take place within the period of the overall programme and shall be by written examinations or coursework, as prescribed for each individual postgraduate course or module.
2. All assessments will be overseen by an examiner external to UCL. A candidate failing any assessments (whether by written paper or by coursework) will be permitted to re-enter the examinations for the course or module in question on one occasion only.
3. The award of the degree shall be dependent on the thesis, which a candidate may not submit until he/she has successfully completed all the other elements of the programme as detailed above, and dependent on the final oral examination. The thesis must meet the same requirements as those prescribed in Chapter 5: Assessment Framework for Research Programmes.
4. The final oral examination shall be conducted by at least two examiners, at least one of whom shall be external to the University. The examination will be designed to test the thesis against the criteria above and will further examine the candidate's conception and understanding of the integration of all elements of the programme and their related assessment.

5. Candidates who are unable to fulfil the requirements of the EngD will, on the recommendation of the VEIV Board of Examiners, be awarded either a VEIV MSc or a VEIV MRes degree provided that they have satisfied the requirements of these degrees. Candidates may not hold both awards.
6. Candidates, other than those holding the MRes in Computer Vision, Image Processing, Graphics and Simulation, who fail the thesis or final oral examination for the EngD and fail on resubmission or re-examination of the final oral, may be awarded an MRes subject to the requirements for the VEIV MRes being met. Such an award would be at the recommendation of the VEIV Board of Examiners, not of the examiners of the thesis.

## 4.5 Dates of Assessment and Final Examination

1. Modules for the taught part of the programme (for four year students) will be assessed by the methods and at the dates indicated for the module in question.
2. Submission of the thesis shall be by the end of the final year of the programme or normally within a calendar year of the date of completion of the programme of study.