College of Science,
Engineering & Food Science

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

MEngSc/PG Dip PHARMACEUTICAL & BIOPHARMACEUTICAL ENGINEERING

The MEngSc (CKR35) and PG Dip (CKP08) in Pharmaceutical & Biopharmaceutical Engineering programmes are part time modularized degrees which can be taken over a period of between 18 months (for award of a Postgraduate Diploma) and 60 months. Participants can gain a formal educational qualification by these programmes through learning in areas of particular interest to the bio/pharmaceutical industry, including product containment, powder/particle technology, chemistry of pharmaceutical compounds, Process Analytical Technology (PAT), primary, secondary, classified and aseptic facility design, current Good Manufacturing Practice (cGMP) and validation.

The PG Diploma is identical to Part I of the MEngSc; both offer 60 ECTS credits on Pharmaceutical & Biopharmaceutical Engineering. The only difference between the two programmes is that the MEngSc involves an additional 30 credit research thesis module for candidates who meet the required standards in Part I of the degree. Candidates of the MEngSc who choose not to proceed to Part II, or who do not meet the required standards, graduate with the PG Diploma.

The programmes offers graduate engineers and scientists (particularly those with relevant experience/working in the bio/pharmaceutical industries) significant benefits, both to themselves and their companies, by developing their skills sets and employability across a wide range of roles and technical areas and through providing enhanced Continuing Professional Development opportunities to graduates.

Entry Requirements for the MEngSc
Candidates must have achieved an Honours BE (Hons) or BEng (Hons) Degree or equivalent engineering qualification, with a minimum grade 2H2, or a level 8 BSc degree, with a minimum grade 2H2, where the BSc graduate has a recognised qualification in Process or Chemical Engineering (e.g. the Diploma in Process & Chemical Engineering at UCC or equivalent). However, candidates with equivalent academic qualifications and suitable experience may be accepted, subject to the approval of the College. In all cases, the course of study for each candidate must be approved by the programme coordinator.

Entry Requirements for the PG Diploma
Candidates must have achieved an NQAI level 8 degree in Engineering or equivalent, or an NQAI level 8 BSc degree or equivalent, ideally with some relevant industrial experience. In all cases, the course of study for each candidate must be approved by the programme co-ordinator.

Programme Content:
In Part I students take 12 taught modules to the value of 60 credits over a minimum of four teaching periods (2 years) from the list of available modules. Individual modules are offered on alternative years. The following includes modules offered (see http://www.ucc.ie/modules/ for module details) though these are subject to change and are subject to the approval of the programme co-ordinator (see programme website). Part II consists of a Dissertation to the value of 30 credits.

Feedback
The following are comments from recent graduates of the programme, provided as part of the formal feedback process for the programme:

'This course has an excellent structure allowing participants to carry out further education whilst still working full-time. The structure of this course should be used as a baseline for other educational institutions, as an excellent means of providing further education for full time working professionals.'

'Overall, enjoyed the course, found it relevant to my work in the pharma industry. Would recommend to colleagues.'

'The thesis element of the course I found the most satisfying as I chose a subject closely related to my work and as a result the level of understanding achieved will stand to me and be a source of encouragement/confidence to continue to learn long after the ink has dried on the parchment.'

'I have recommended this course to colleagues and friends – I hold this course and its content in high regard'

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Part I (All modules worth 5 credits)
CM6010 Introductory Pharmaceutical Chemistry

PE6010 Pharmaceutical Engineering

PE6011 Biopharmaceutical Engineering

PE6012 Pharmaceutical Process Equipment; Materials and Mechanical Design

PE6013 Powder & Particle Technology & Unit Operations

PE6014 Chemical Kinetics, Reactor Design and Bioreactor Engineering

PE6015 Environmental Engineering in the Pharmaceutical Sector

PE6016 Pharmaceutical Industry; Manufacturing & Optimisation

PE6017 Pharmaceutical Plant Design & Project Management

PE6018 Pharmaceutical Process Validation & Quality

PE6019 Process Analytical Technology

PE6022 Aseptic Manufacturing Design

PE6023 Pharmaceutical & Biopharmaceutical Utilities

PE6024 Advanced Process Design & Safety Engineering

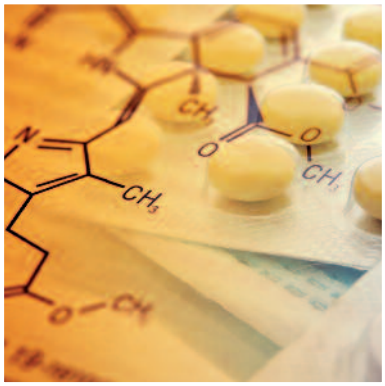
PE6025 Advanced Health & Safety Management

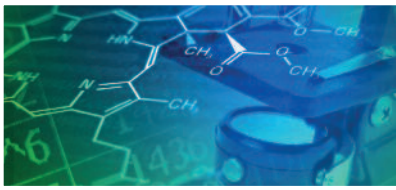
PF6302 Introduction to Pharmaceutics: Formulation Science

Part II (MEngSc Only)
PE6021 Dissertation in Pharmaceutical & Biopharmaceutical Engineering (30 credits)

Course Structure and Features:

- Full set of comprehensive notes and assignments provided for each module.
- 2 (teaching & learning & assessment) periods per annum.
- Choose from up to four modules offered per period.
- 'Start up' sessions over 2 days on Fridays and Saturdays at end August & at beginning January. (4 contact hours per module)
- Followed up by 'Tutorial Sessions' (roughly at 3 week intervals on Saturdays) on respective modules throughout term. (6 contact hours per module)
- Complemented by regular feedback available weekly






Applications:
Apply online to CKR35 or CKP08
via http://www.pac.ie,
closing date in June for September start
(see website for exact details).

For details on fees see:
http://www.ucc.ie/processeng/mengsc/application/

Contact Information/Enquiries:
http://www.ucc.ie/processeng/mengsc/
Informal enquires are welcome;

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