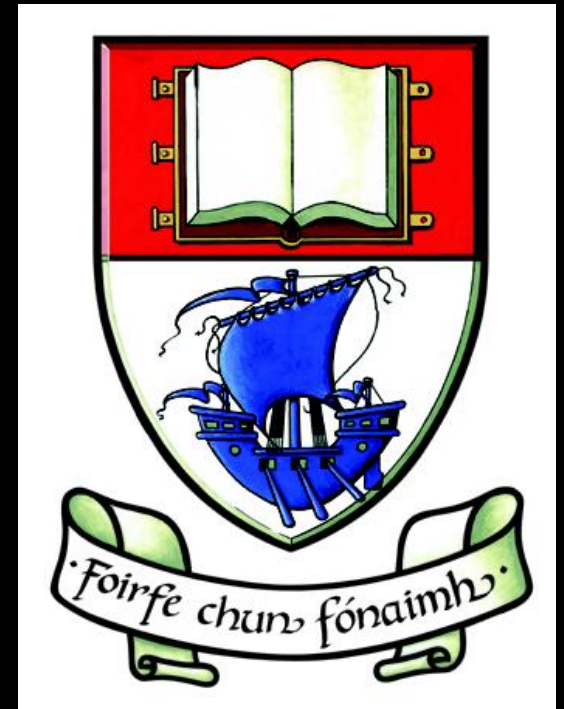


Postgraduate Diploma / MSc in Analytical Science with Quality Management



Department of Chemical & Life Sciences,
Waterford Institute of Technology

Introduction

- Taught Postgraduate Diploma/Masters programmes
- Modular system → flexibility
- 2 years part-time
- Students typically required to attend WIT for 3 separate blocked 2 day sessions per semester:
 - 1st Thursday & Friday of October, November, December
 - 1st Thursday & Friday of February, March, April
- Postgraduate Diploma awarded to students who complete 12 modules from Programme Structure on next slide.
- Masters awarded to students who complete an additional Research Dissertation module.

Programme Structure

Year 1

Semester 1	Semester 2
Total Quality Management	Research Methodology
Statistics for Quality	Spectroscopic Techniques
Separation Techniques	Advanced Laboratory Techniques

Year 2

Semester 1	Semester 2
Validation	Advanced Quality Methodologies
Design of Experiments	International Regulatory Affairs
Process Analytical Technology	Food Industry Safety Management
Risk Management	Advanced Pharmaceutical Analysis
Biopharmaceutical Analysis	Analytical Microbiology
Chemical Sensors & Biosensors	Materials Characterisation

Research Dissertation

- Each student who pursues the Masters option is required to undertake an additional individual Research Dissertation.
- Dissertation work spread over 12 months.
- Preferably to be undertaken within student's work environment.
- Should contribute to the company's R&D activity.
- Assigned individual WIT research supervisor and internal supervisor in the workplace.

Course Aims

- To provide a challenging and intellectually stimulating programme of further study for graduates from science-based disciplines to enable them to specialise in analytical science and/or quality management.
- To enable graduates to assess the potential of and implement new analytical technology within an industrial environment.
- To graduate students who can lead their company's quality programmes.
- To prepare students for a rewarding career in industry or academic research.
- To confer on the graduate a set of personal and professional attributes that will allow them greater flexibility in career options development.

Entry Requirements & Fees

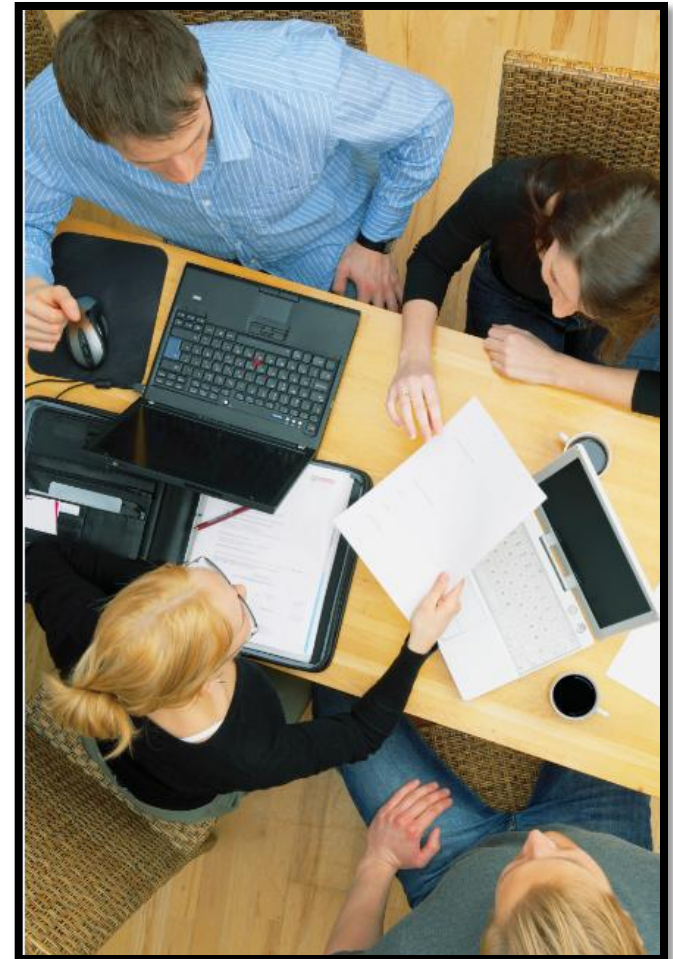
- Minimum 2 years experience in industry.
- Honours degree (Level 8) in Science in an appropriate subject area or related discipline or interview:
 - As number of places are limited.
 - To ensure good match of student with course (this works both ways).
- International students required to meet WIT postgraduate TOEFL/IELTS standards.
- Fees:
 - Approx. €8,000 for EU students (€4,000 per annum)

Why was this course developed?

- Strategic importance of analytical science and quality management at national & regional levels.
- Clear demand for graduates qualified in these areas as indicated by industrial surveys.
- Importance based on quality management in industries as a way of achieving business excellence and remaining competitive with the marketplace.
- Need for a more advanced analytical science qualification as based on graduate surveys.
- Current research areas in analytical science within Chemical & Life Sciences Department that are linked to industry.

Why study at WIT?

- Not just another year in college!
 - Peer relationship with staff.
 - Programme delivered through blend of lectures, projects, laboratory practicals, demonstrations & e-learning.
 - Teaching of some modules will be supplemented by problem-based material that will enable a more flexible and bespoke teaching and learning experience.
- Hands-on skills emphasised.
- Exposure to high tech analytical instrumentation.
- Interesting challenging course



Selection of Analytical Instrumentation at WIT

- 400 MHz NMR Spectrometer & Solid State Probe – JEOL ECX-400
- Rapid Resolution LC Systems (Diode Array & Fluorescence Detection) – Agilent 1200 Series
- GC/MS (EI & CI; Solids Probe; Liquid & Headspace Injection; SPME conditioning, incubation, sampling and analysis) – Varian 220-MS / 450-GC
- Olympus BX51 Fluorescent Microscope System
- FTIR Spectrometer & Mapping Microscope – Varian 660-IR & 610-Microscope
- TA Q2000 Differential Scanning Calorimetry System
- TA Q50 Thermogravimetric Analysis System
- Agilent Capillary Electrophoresis G 1600 AX System
- Malvern Instruments Hydro 2000S Particle size Analyser
- Hitachi S-2460N Scanning Electron Microscope
- Beckman Coulter Cytomics FC 500 Flow Cytometer

Analytical Instrumentation at WIT

- Jeol ECX-400 NMR

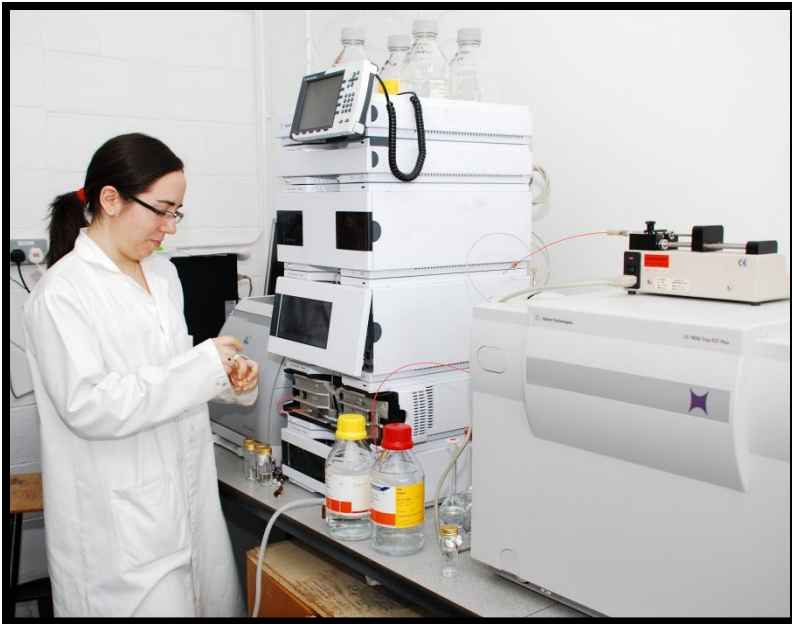


- Hitachi S-2460N SEM



Analytical Instrumentation at WIT

- Agilent Technologies LC-MS Trap XCT Plus



- Varian 450 GC-MS 220



Analytical Instrumentation at WIT

- Meso Scale Diagnostic Plate Reader



- Olympus BX51 Fluorescence Microscope



Analytical Instrumentation at WIT

- Agilent Technologies Capillary Electrophoresis G 1600 AX System



Research Centres in Chemical & Life Sciences Department, WIT

- **Pharmaceutical & Molecular Biotechnology Research Centre**
 - Biofuel Research Cluster
 - [Biomedical Research Cluster](#)
 - Polymer Mediated Sensing Research Group
 - Listeria Research Group
 - Molecular Biology Research Group
 - [Nanotechnology Research Group](#)
 - [Separation Science Research Group](#)
 - [Surface Science Research Group](#)
- **Eco-Innovation Research Centre (EIRC)**
 - [Molecular Ecology Research Group](#)
 - [Estuarine Research Group](#)
 - [Sustainable Agriculture Research Group](#)
 - [Forestry Research Group](#)

For more information...

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