



Ollscoil Chathair  
Bhaile Átha Cliath  
Dublin City University



## BSc Analytical Science – INTRA Programme (DC161)

### The Objective

The Objective of this four-year, full-time degree is to produce graduates who:

- Have a good grasp of basic analytical, chemical and biological techniques
- Are capable of tackling analytical problems of a chemical or biological nature
- Are able to design, carry out and interpret their measurements within the context of a given problem
- Have an awareness of the needs of both industry and government for accurate and reliable analytical data

### Programme Outline

The first two years of this programme provide a grounding in the fundamentals of Chemistry, Biology, Physics, Mathematics and Computing. Laboratory work in years one and two is concerned with the development of manipulative and observational skills, together with precise and accurate quantitative methods. During the second half of the programme, students will elect for a Chemistry or Biology option and will obtain further enhanced fundamental skills together with highly specialised methods of analysis. A multiple-technique approach to problem solving is emphasised throughout the programme.

### Relevant Work Experience

Relevant Work Experience through DCU's work experience programme INTRA (INtegrated TRaining) is a central feature of education at DCU and an integral part of most undergraduate and some postgraduate degree programmes. Students from BSc Analytical Science are required to complete a six month INTRA placement at the end of third year, from April to September inclusive.

### Work Areas

Students from BSc Analytical Science will have the ability to work in the following areas (among others):

- Pharmaceuticals and fine chemical industries
- Pollution and water treatment plants
- Polymeric materials industries (plastics, paints, petro-chemicals, adhesives)
- Establishment, maintenance, assessment and control of standards
- Bioanalytical method development
- Trace metal and organic analysis
- Bio, Environmental and Clinical analysis
- Quality control
- Research and Development
- Process Development and management
- Technical services





Students are available for interview from October onwards. For more information, contact: INTRA Unit, Student Support & Development, DCU, Glasnevin, Dublin 9. Ireland.

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Year 1	Year 2	Year 3	Year 4
How life works 1	Biomolecules and Metabolism	<b>Core Modules</b>	<b>Core Modules</b>
How life works 2	Microbiology and Genetics	Cell Biology	Biopharmaceutical and Immunological Analysis
Practical Biology	Practical Biochemistry Laboratory	Bioanalytical Practicals I	Advanced Spectroscopy
Introductory Chemistry 1	Practical Microbiology and Genetics Laboratory	Separation Techniques	Genetic & Pharmaceutical Analysis in Forensic
Introductory Chemistry 2	Spectroscopy and Physical Chemistry	Analytical Spectroscopy	<b>Optional Modules</b>
Interdisciplinary Science	Organic Chemistry	Regulation and Data Analysis	Gene Cloning and Gene Expression
Chemistry Laboratory	Inorganic Chemistry	Analysis of Organic and Inorganic Species	Industrial Bioprocessing
Mathematics for Scientists 1	Visualisation and Validation of Laboratory Data	Environmental Monitoring and Forensic Biology	Bioanalytical Practicals II
Mathematics for Scientists 2	Kinetics and Thermodynamics	<b>Optional Modules</b>	Analytical Science Literature Survey
Physics for General Science I	Inorganic and Physical Chemistry Lab	Advanced Cell Biology	Analytical Science Research Project
Physics for General Science II	Organic Chem Lab and Spectroscopic Workshop	Organometallics and Polymer Chemistry	Interfacial and Supramolecular Chemistry
Physics Laboratory for General Science	Probability and Statistics	INTRA - Industry and Career Related Assignments	Advanced Analytical Applications
		INTRA	Soil, Energy and Waste
			Literature Survey
			Project
			Uaneen Non-Contributing Module