

FREQUENTLY ASKED QUESTIONS

What are the most helpful Leaving Cert Subjects?

Chemistry, Physics, Mathematics, and Biology.

If I'm not doing Chemistry, can I still apply?

YES – the fundamentals of chemistry, physics and biology are delivered in year one.

What standard of Mathematics is required for the course?

D3 or better at Ordinary or Higher Level. Numeracy, accuracy and precision are important, but advanced mathematical ability is not essential.

How is time allocated in first year?

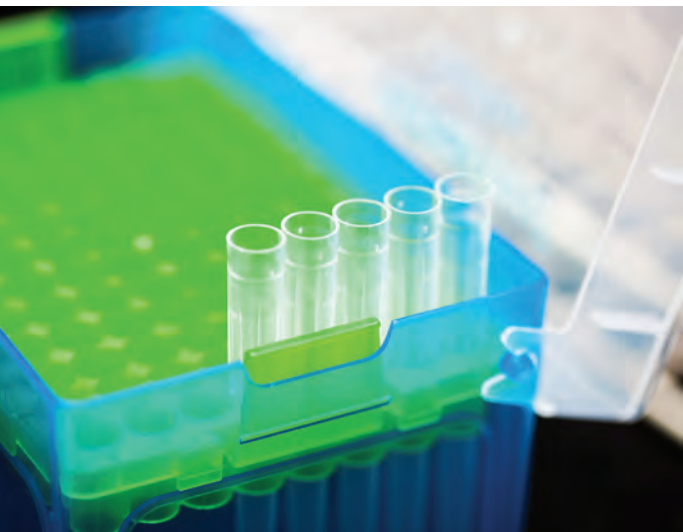
Theory 60%, practical laboratory 40%.

How are marks allocated in first year?

Final examination 25-30%, continuous assessment 70-75%.

Is there placement during the course?

Mandatory placement in industry at home or abroad during year 3. Most placements are in the Cork area, but options may be available in Italy, Spain, Finland, France, and Scotland.



ANALYTICAL AND PHARMACEUTICAL CHEMISTRY CR 007 (LEVEL 7 AWARD)

Chemistry is the fundamental science that deals with the composition of matter, the changes that transform matter, and the conditions under which those changes occur. The study of fundamental chemistry allows us to increase our total knowledge and understanding of our universe, our environment, and indeed life itself. Other branches of chemistry use our understanding of fundamental chemistry to improve the way in which we live, work, and develop.

The equipment of everyday life is made from raw materials. Chemists analyse and understand these raw materials to determine efficient and safe ways of transforming them into useful products, develop new products and materials, and monitor production processes to ensure the quality of finished products.

Analytical chemistry deals with the great variety of methods used to identify and quantify the chemical components of materials, while pharmaceutical chemistry focuses on aspects of drug design, synthesis, and manufacture.



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BACHELOR OF SCIENCE IN ANALYTICAL AND PHARMACEUTICAL CHEMISTRY

Course Code
CR 007

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MINIMUM ENTRY REQUIREMENTS

Leaving Certificate grade D3 at Ordinary or Higher level in 5 subjects including Mathematics and either English or Irish.

CAREERS

The pharmaceutical and chemical industries (the 'pharmachem' sector of the economy) has many facets: production, research, product development, problem-solving, analysis, quality assurance, environmental monitoring, marketing and sales. This course prepares students for careers in a major growth area of strategic importance to industrial development both in Ireland and abroad. Prospective students should be aware that the pharmachem industries offer well-paid secure employment in a wide range of career options, and has a high demand for chemistry graduates.

Cork is the centre of the Irish pharmachem sector, and multinational industries such as Pfizer, Glaxo-SmithKline, Novartis, Eli Lilly and many others have been employing chemistry graduates from CIT for many years.

FURTHER STUDY, PROFESSIONAL RECOGNITION

Graduates achieving a minimum final average mark of 50% may proceed to the BSc (Honours) in Analytical Chemistry with Quality Assurance. This BSc ACQUA course is completed in one further academic year on a fulltime basis, and most graduates are then eligible for progression to postgraduate research programmes in Chemistry, at MSc and PhD level.

The BSc ACQUA is recognised for professional membership of the Institute of Chemistry of Ireland, and graduates are also eligible to apply for associate membership of the Royal Society of Chemistry. It is also recognised by the Department of Education & Science as a second-level teaching qualification.

COURSE STRUCTURE

The BSc in Analytical and Pharmaceutical Chemistry prepares students for laboratory-based careers; activities include preparation of chemicals and samples for use, analysis of raw materials and products of chemical processes, set-up/ maintenance/use of chemical instrumentation. Computerised instruments and information technology are important in this work, and graduates may work in quality assurance, analysis, research, development, and production. Opportunities exist not only in the pharmachem sector, but also in such diverse areas as electronics, metallurgy, and food/beverage processing. Graduates have become senior technicians, analysts, laboratory managers, quality control supervisors. Some have progressed into company management positions over the years, and some have started and managed their own companies.

Course delivery is usually by means of formal lectures and practical sessions, with about half of the working week spent in the laboratory. The course is examined using a combination of continuous assessment (of both theory and practical work), and terminal examinations.

A substantial period of work experience in industry at the end of the third year gives students a broader perspective of the industry and its role. This usually commences at the start of April, and frequently continues until the end of the summer period.

GRADUATE PROFILE

AILEEN CREMIN QUALITY CONTROL SPECIALIST



"I graduated with the BSc in Analytical and Pharmaceutical Chemistry, and then completed the BSc (Honours) ACQUA the following year.

I started working with Pfizer Ireland Pharmaceuticals, based in the Quality Control Laboratory as part of the finished products team. As a quality control specialist, I have plenty of variety and challenges, with many opportunities to get involved in different areas within the pharmaceutical manufacturing industry."

BSc in Analytical and Pharmaceutical Chemistry CR 007 (Level 7 Award)

COURSE PROGRAMME

The course is delivered over 3 full academic years, with 2 semesters per year. Modules marked 'M' are mandatory for completion of the stage or award; those marked 'E' are elective modules.

YEAR ONE

Semester 1 (Sept – Dec)

Chemical Principles M
Introduction to Physics M
Essential Mathematical Skills M
Biomolecules and Cells M
Laboratory Practices M
Creativity, Innovation & Teamwork M

Semester 2 (Feb – May)

Fundamental Physical Chemistry M
Organic Chemistry Fundamentals M
Calculus and Statistics for Biological Science M
Computing Skills M
Introduction to Biotechnology M
Physics E
Microbes, Enzymes and Energy E
Free Choice module E

YEAR TWO

Semester 3 (Sept – Dec)

Organic Chemistry M
Inorganic Chemistry M
Analytical Chemistry 1 M
Industrial Chemistry M
Fundamentals of Microbiology M
Quality, Validation, and Regulatory Affairs E
Structural Biochemistry E
Cellular Biotechnology E
Free Choice module E

Semester 4 (Feb – May)

Pharmaceutical Chemistry M
Physical Chemistry M
Analytical Chemistry 2 M
Calculus and Statistical Analysis M
Instrumentation & Computing M
Quality, Validation, and Regulatory Affairs E
Structural Biochemistry E
Cellular Biotechnology E
Free Choice module E

YEAR THREE

Semester 5 (Sept – Dec)

Spectroscopic and Chromatographic Methods M
Topics in Organic Chemistry M
Inorganic & Physical Chemistry 1 M
Quality Assurance for the Chemical Industry M
Experimental Chemistry M
Chemical Applications for the Pharmaceutical Industry E
Analytical Microbiology E
Industrial Biotechnology E

Semester 6 (Feb – May)

Environmental Analysis M
Pharmaceutical Applications M
Inorganic & Physical Chemistry 2 M
Industrial Placement M

Please visit: <http://modules.cit.ie/CR007> for detailed module information.

Note: Students who successfully complete Year 2 of this programme, but choose not to progress to the third year, will receive the Higher Certificate in Science in Chemistry.