Master of Science (MSc) 
Pharmaceutical Business & Technology

- Develop your Business and Technology skills in the Pharmaceutical Sector
- Gain expertise in Pharmaceutical Manufacturing, Business Improvement, Regulatory Affairs, Clinical Research and Data Analytics
- Do you hold a Level 8 primary degree with a 2.2 award or higher in Science, Engineering, Quality or a related discipline?
- PGDip option available

- A unique blend of technology and business skills
- Extensive range of industry speakers
- Four semester programme
- A blend of classroom and virtual learning environment
- Two evenings per week plus two Saturdays per month

Potential Job Opportunities
- Operations Management
- Technology Transfer
- Regulatory Affairs / Compliance
- Operational Excellence
- Clinical Trials Co-Ordination
- Quality Assurance
- Business Strategy

www.innopharmalabs.com/education
A Demand for New Skills
The pharmaceutical industry has traditionally required individuals with strong science or engineering backgrounds to support its significant manufacturing activities in Ireland. Today, there is a new skill-set required in addition to those with scientific competencies. This skill-set requires professional individuals with a strong knowledge of technology, compliance, strategy & leadership, emerging trends and data analysis as well as operational excellence. These skills need to be supported with an ability to assimilate information, make effective decisions and communicate clearly using the latest technologies and systems. This MSc in Pharmaceutical Business & Technology developed by Innopharma College of Applied Sciences in conjunction with Griffith College will equip individuals with these skills and competencies.

Who is this Programme for?
The programme is targeted at those who wish to develop their career in the areas of pharmaceutical operations, compliance, business improvement, technology transfer, validation, clinical trials and data analysis. With extensive input and participation from the pharmaceutical and clinical trials sectors, this programme is ideal for those involved in manufacturing, compliance, business improvement, quality assurance, validation, data analytics, clinical trial co-ordination and engineering.

What will I learn from this programme?
This programme would ideally support a Team Leader / Supervisor Career Development programme as it develops the competencies required for such roles. This programme will focus on core competencies such as, Pharmaceutical Processes and Production, Pharmaceutical Business Introduction & Technology Transfer, Emerging Trends in the Industry, the implementation of Operational Excellence (Lean Six Sigma), Regulatory & Financial aspects of the Pharmaceutical Industry, Data Analytics, Strategic Thinking and Leadership Development and Professional Skills. A substantial focus of the programme will also develop the professional skills of the graduate to enhance their future career opportunities through professional development activities such as interview training, networking as well as developing presentation and communication skills.

Entry Requirements
Level 8 primary degree with a 2.2 award or higher in Science, Quality or Engineering related discipline. Recognition of Prior Learning will also be taken into account.

Duration and Hours
This programme is delivered over four semesters (90 Credits). Learners attend classes two evenings per week (6.30pm - 9.30pm) and two Saturdays per month for tutorial and group work. Evening classes are delivered with the option of logging on to the live evening classes online. Classes will be delivered in Griffith College, Dublin and Innopharma College of Applied Sciences, Dublin, Ireland.
MSc Programme Module Content

Semester 1 (20 Credits)

Processes, Production and Pharmaceutical Quality Systems
- Pharmaceutical & biopharmaceutical manufacturing industry, pharmaceutical products, manufacturing, quality system elements, validation and change control, pharmaceutical plant design, pharmaceutical quality systems, principles of quality by design.

Regulatory Landscape of Pharmaceutical Business
- Pharmaceutical legislation and regulation, core principles, statutory frameworks, environmental regulations, Irish and European Union law, planning law, waste management, control of pollution, factory facilities.

Semester 2 (20 Credits)

Pharmaceutical Technology Transfer
- Technology Transfer process, research to manufacturing, location to location, life cycle studies, raw material impacts, pilot plant studies, validation, commissioning and cleaning, project management, regulatory framework, analytical methods.

21st Century Dynamics & Emerging Trends
- Challenges facing the pharmaceutical industry, new product types, patent cliffs, emerging markets, innovative medicines, live licensing, modes of healthcare delivery, governmental strategies, demands on manufacturing and distribution.

Strategy, Leadership & the Culture of Innovation
- Current challenges of pharmaceutical industry, strategic thinking in the bio/pharma industry, leading change in the bio/pharma industry, culture of innovation, corporate governance and business ethics.

Semester 3 (20 Credits)

Operational Excellence & the Science of Innovation
- Origins of operational excellence, operational excellence implementation models, lean sigma implementation, design for six sigma, science of innovation, TRIZ, key performance indicators (KPI), quality function deployment.

Clinical Research Management
- Drug development life cycle, clinical trials project management, contract research organisations (CRO), competitive marketing in the clinical trials sector, managing commercial relationships.

Semester 4 (30 Credits)

Research Methods
- Topic selection, literature review, research design, methods of data collection and analysis, ethics.

Dissertation
- Abstract, introduction and rationale, methodology, analysis & results, discussions and recommendations, presentation of dissertation.
MSc Programme Learning Outcomes

On successful completion of the programme learners will be able to:

- **Demonstrate** detailed knowledge of the facts, concepts, principles, theories and methods associated with the life cycle of scientific discovery, development, delivery and support services governing the pharmaceutical industry’s operations.
- **Apply** advanced methods for acquiring, interpreting and analysing current research relating to business case development, financial analysis, trends in pharmaceutical business, project management, executive leadership and corporate social responsibility.
- **Source** relevant information relating to the current and future economic and regulatory environment within the pharmaceutical sector.
- **Interpret** and apply strategies to implement technology transfers, new business introductions, contract manufacturing and project implementation.
- **Select** and apply the appropriate business planning/analysis tools to coordinate activities as well as investigate and recommend improvements for business processes appropriate to pharmaceutical science.
- **Apply** advanced research skills to analyse, interpret and manipulate data in pursuit of solutions to specific business problems relating to pharmaceutical science.
- **Lead** and manage effectively, ethically and compliantly with others to propose and deliver significant projects and implementations involving multi-cultural and multi-site teams.

**Awards**

Master of Science (MSc) in Pharmaceutical Business & Technology.
Post Graduate Diploma in Pharmaceutical Business & Technology optional if exiting after Semester 3.

**Enrolment & Fees**

All learners are interviewed to assess suitability. Contact the Innopharma College of Applied Sciences offices to obtain the current pricing and payment options.

Innopharma College of Applied Sciences is the award-winning, premier education research and technology institute for industry-led education and training programmes in the Pharmaceutical, MedTech and Food industries. Innopharma College of Applied Sciences has grown to become one of the top institutions in Ireland delivering world recognised qualifications up to Masters’ degree level. All our education programmes are developed with your career advancement in mind – consisting of a unique blend of industry focused modules and practical workshops. Many of our lecturers have extensive experience in industry and engage in a high level of coaching and mentoring with students. Innopharma College of Applied Sciences programmes, are the number one choice for graduates and experienced professionals seeking to upskill and advance their careers in the Pharmaceutical, MedTech and Food sectors.

For more information on our award winning range of courses contact us on:
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Visit our website on www.innopharmalabs.com/education
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