



Module Details

Short Title:	Molecular Biotechnology APPROVED		
Full Title:	Molecular Biotechnology		
Module Code:	BIOT8001	NFQ Level:	Advanced
		ECTS Credits:	5.0
Valid From:	Semester 1 - 2011/12 (September 2011)		
Module Coordinator:	BRENDAN O CONNELL		
Module Author:	JIM O MAHONY		
Description:	A comprehensive analysis of the drug discovery process - from concept to production as evidenced by the modern biotechnology industry.		
Learning Outcomes:			
<i>On successful completion of this module the learner will be able to</i>			
<ol style="list-style-type: none"> 1. Access and interpret genomic & proteomic data from a variety of sources 2. List and describe the main bio-therapeutic products currently available 3. Analyse and evaluate the economic, legal, regulatory and logistical considerations associated with developing a new product 4. Synopsise and interpret key information from technical procedures and research reports 5. Perform applied laboratory tasks and produce high quality reports 			
Pre-requisite learning			
Module Recommendations			
<i>This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named CIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).</i>			
7369	BIOT7001	Applied Biotechnology	
7369	BIOT6001	Introduction to Biotechnology	
Incompatible Modules			
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module. You may not earn additional credit for the same learning and therefore you may not enrol in this module if you have successfully completed any modules in the incompatible list.</i>			
No incompatible modules listed			
Requirements			
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed. You may not enrol on this module if you have not acquired the learning specified in this section.</i>			
No requirements listed			
Co-requisites			
No co-requisites listed			



Module Content & Assessment

Indicative Content

- **Concept to production**
A comprehensive evaluation of the stages and logistical parameters underpinning new product development
- **Advanced techniques**
An overview of advanced techniques in use such as microarrays, mass spectrometry, high throughput screening, real-time PCR, modern cloning methods & DNA / protein sequencing
- **Bio-informatics**
A detailed analysis of the role played by bio-informatics in drug discovery and functional protein production
- **Products and Companies**
A thorough review of the major companies currently involved in the bio-pharmaceutical sector, and an analysis of the main classes of manufactured products
- **Strategic research**
An overview of the concept, project design, available funding and collaborative approaches to modern research for academia and industry

Assessment Breakdown	%
Course Work	50.0%
End of Semester Formal Examination	50%

	Outcome addressed	% of total	Assessment Date
Formal End-of-Semester Examination	1,2,3,4,5	50%	Semester End

Coursework Breakdown

Type	Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	Applied laboratory tasks	5	35.0	Every Week
Oral Examination/Interview	n/a	1,2,3,4	15.0	Week 8

Reassessment Requirement**Repeat examination**

Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.

The institute reserves the right to alter the nature and timings of assessment



Module Workload & Resources

Workload		Full-time		
Type	Description	Hours	Frequency	Average Weekly Learner Workload
Lecture	class based instruction	2.0	Every Week	2.00
Lab	Practical component	2.0	Every Week	2.00
Independent & Directed Learning (Non-contact)	No Description	3.0	Every Week	3.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				4.00

Resources

Recommended Book Resources

- Gary Walsh 2003, *Biopharmaceuticals, Biochemistry and Biotechnology* [ISBN: 978-0470843277]
- Daan Crommelin, *Pharmaceutical biotechnology* [ISBN: 978-0415285018]