



Title:	Biomolecules and Cells APPROVED
Long Title:	Biomolecules and Cells
Module Code:	BIOL6007
Duration:	1 Semester
Credits:	5
NFQ Level:	Fundamental
Field of Study:	Biochemistry & Cell Biology
Valid From:	Semester 1 - 2017/18 (September 2017)
Module Delivered in	15 programme(s)
Module Coordinator:	Brigid Lucey
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Module Description:	This module is an introduction to the structure and function of the major biological macromolecules. The structure of eucaryotic and procaryotic cells. The function of eucaryotic cell organelles and the cell cycle.
Learning Outcomes	
<i>On successful completion of this module the learner will be able to:</i>	
LO1	Recognise and describe the structure and function of the major biomolecules.
LO2	Describe and illustrate the differences between a procaryotic and a eucaryotic cell. .
LO3	Describe the structures and functions of the eucaryotic cell organelles.
LO4	Describe the normal eucaryotic cell cycle and its control.
LO5	Perform and report on, biological laboratory experiments.
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>	
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>	
N/A	
Co-requisite Modules	
No Co-requisite 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>	
None	

Module Content & Assessment

Indicative Content

Biomolecules

Structure and functions of proteins, fats, carbohydrates and nucleic acids.

Cells

The structure of a typical eucaryotic and procaryotic cell. The structures and functions of the organelles of a eucaryotic cell.

Eucaryotic cell division.

The process of normal eucaryotic cell division, the cell cycle and its regulation. Causes and characteristics of cancer cells.

Laboratory Practicals

The module will include laboratory practicals which will supplement the lecture based learning.

Assessment Breakdown

	%
Course Work	100.00%

Course Work

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Multiple Choice Questions	Theory Assessment.	1	30.0	Week 7
Written Report	Laboratory reports will be required every second week for thematic areas.	5	20.0	Every Second Week
Practical/Skills Evaluation	Lab exam	5	20.0	Sem End
Short Answer Questions	Theory assessment.	2,3,4	30.0	Sem End

No End of Module Formal Examination

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

Workload: Full Time				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Class room based learning	2.0	Every Week	2.00
Lab	Practical laboratory sessions	2.0	Every Week	2.00
Independent & Directed Learning (Non-contact)	Student independent learning time for this module	3.0	Every Week	3.00
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				4.00

This module has no Part Time workload.

Module Resources

Recommended Book Resources

- Dr. Rob Brooker, Dr. Eric Widmaier, Dr. Linda Graham, 2016, *Biology*, 4th Ed., McGraw-Hill Higher Education [ISBN: 9781259188121]

Supplementary Book Resources

- Sylvia Mader and Michael Windelspecht 2015, *Biology*, 12th Ed., McGraw-Hill Higher Education; U.S [ISBN: 0078024269]
- Peter H Raven, George B Johnson, Kenneth A. Mason, Jonathan Losos, Susan Singer 2010, *Biology*, McGraw-Hill Higher Education; [ISBN: 9780077129149]

This module does not have any article/paper resources

Other Resources

- Web site: *Biology mad*
<http://www.biologymad.com>

Module Delivered in

Programme Code	Programme	Semester	Delivery
CR_ECPEN_8	<u>Bachelor of Engineering (Honours) in Chemical and Biopharmaceutical Engineering</u>	1	Mandatory
CR_SAGBI_8	<u>Bachelor of Science (Honours) in Agri-Biosciences</u>	1	Mandatory
CR_SCHQA_8	<u>Bachelor of Science (Honours) in Analytical Chemistry with Quality Assurance</u>	1	Mandatory
CR_SNHSC_8	<u>Bachelor of Science (Honours) in Nutrition and Health Science</u>	1	Mandatory
CR_SPHBI_8	<u>Bachelor of Science (Honours) in Pharmaceutical Biotechnology</u>	1	Mandatory
CR_SAGBI_7	<u>Bachelor of Science in Agri-Biosciences</u>	1	Mandatory
CR_SCHEM_7	<u>Bachelor of Science in Analytical and Pharmaceutical Chemistry</u>	1	Mandatory
CR_SBIBI_7	<u>Bachelor of Science in Applied Biosciences and Biotechnology</u>	1	Mandatory
CR_SFSTE_7	<u>Bachelor of Science in Food and Health Science</u>	1	Mandatory
CR_ECBPO_6	<u>Certificate in Chemical and Biopharmaceutical Process Operations</u>	1	Mandatory
CR_EFDMO_6	<u>Certificate in Food Manufacturing Operations</u>	1	Mandatory
CR_SCEBS_8	<u>Common Entry Biological Sciences</u>	1	Mandatory
CR_SBIOS_6	<u>Higher Certificate in Science in Applied Biosciences</u>	1	Mandatory
CR_SCHEM_6	<u>Higher Certificate in Science in Chemistry</u>	1	Mandatory
CR_SGMPR_6	<u>Higher Certificate in Science in Good Manufacturing Practice and Technology</u>	1	Mandatory