

Academic Transcript Module Descriptor Example

Module Title:	Cell Biology
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Module Overview:

This module aims to provide learners with a basis in the basic principles of prokaryotic and eukaryotic cell biology and the identified practical applications. Theoretical content will focus on establishing a knowledge of cellular structure, function, organisation and cell division including aspects of molecular cell biology, such as DNA and chromosome structure, subcellular architecture and the essential processes of cell division and replication. The practical content focuses on the use of light microscopy to guide students through exploration of cell biology.

Learning Outcomes (LO): (to be numbered)

For a 5ECTS module a range of 4-10 LOs is recommended

On Completion of this module, the learner will be able to

1	Outline characteristics of living organisms
2	Describe the classification of living organisms
3	Identify and explain differences between eukaryotic and prokaryotic cells
4	Describe the structure and function of cell organelles and cytoskeleton
5	Explain how vesicular transport operates within the endomembrane system.
6	Explain and describe the structure and function of the plasma membrane
7	Describe the structure of DNA and RNA
8	Have an knowledge of DNA replication
9	Describe the processes of mitosis and meiosis
10	Microscopically identify stages of cell mitosis

Indicative Syllabus:

Theory:

1. Characteristics of living organisms.
2. Classification of living organisms.
3. Prokaryotic and eukaryotic cell structure.
4. Viruses and viral life cycles.
5. Principles of light and electron microscopy.
6. Structure and function of Eukaryotic cell organelles.
7. The endomembrane system.
8. Structure and function of the plasma membrane.
9. Structure and function of the cytoskeleton.
10. The role of proteins in transport processes.
11. Osmosis and diffusion.
12. Structure and function of biomolecules (lipids, carbohydrates, proteins, enzymes, nucleic acids (DNA and RNA).
13. DNA replication.
14. Eukaryotic cell cycle.
15. The processes of meiosis and mitosis.

Laboratory Practical

1. Essentials of microscopy.
2. Preparation of wet mounts and simple staining techniques.
3. Analysis of eukaryotic cell organelle ultrastructure.
4. Demonstration of osmosis in blood cells.
5. Enzymology.
6. Mitosis.

Learning and Teaching Methods:

Classroom based teaching, lectures, demonstrations, group work, presentations, problem based learning, web based learning, self-directed learning.

Total Teaching Contact Hours	40
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Total Self-Directed Learning Hours	80
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Module Delivery Duration:

Module delivered during semester 2

Assessment

Assessment Type	Weighting (%)	LO Assessment (No.)
Written Exam	45	1,2,3,4,8,9
MCQ	5	1,2,3,4
project	10	1,2,3,4,7,8,9,10
Presentation	5	1,2,3,7,8,9,10

Module Specific Assessment Arrangements (if applicable)

(a) Derogations from General Assessment Regulations	N/A
(b) Module Assessment Thresholds	40% must be achieved at in-class MCQ. 40% must be achieved in each written exam, case-study and logbook. Students must pass the written competency test.
(c) Special Repeat Assessment Arrangements	A second MCQ will be offered to students who fail first attempt. A second competency test will be offered when/where resource allows.

Essential Reading:

Reece J, Urry L, Cain M, Wasserman S, Minorsky P, Jackson, R. (Eds) 9th Global Edition, 2011, Campbell Biology, Pearson Benjamin Cummings.

Supplemental Reading

Reece J, Taylor M, Simon E, Dickey J. (Eds) 8th edition 2015, Campbell Biology: Concepts and Connections, Pearson Benjamin Cummings.

Bruce Alberts, 2010, Molecular Biology of the cell 6th Edition, Garland Science

Version No:	x	Amended By	x
Commencement Date	x	Associated Programme Codes	x