

Tissue Engineering and Wound Repair

Module Code:	MHT7001-A
Academic Year:	2018-19
Credit Rating:	10
School:	Department of Biomedical and Electronics Engineering
Subject Area:	Medical and Healthcare Technology
FHEQ Level:	FHEQ Level 7 (Masters)
Module Leader:	Professor Clive Beggs

Additional Tutors:

Pre-requisites:

Co-requisites:

Contact Hours

Type	Hours
Lectures	20
Tutorials	4
Directed Study	74
Examinations DO NOT USE	2

Availability Periods

Occurrence	Location/Period
BDA	University of Bradford / Semester 1 (Sep - Jan)

Module Aims

To stimulate a multidisciplinary understanding of the concepts underlying tissue engineering and wound repair.

Outline Syllabus

Cell Biology: overview of structure of human cells; mitosis and protein synthesis; cell cycle, apoptosis and necrosis; ligands & receptors, communication between cells; transduction and cell differentiation; structure of various tissue types; connective tissue and extracellular

matrix; structure and nature of skin

Wound Repair: blood cells; haemostasis - physiological and immunological aspects; wound repair - characteristics of cell growth; growth factors, cell communication; microbiology and wound infection

Tissue Engineering: overview of tissue engineering, potential applications; cell adhesion, cell communication and growth; maintaining blood supply and nutrients; scaffolds, materials; mechanical properties

Module Learning Outcomes

On successful completion of this module, students will be able to...

- 1
 - 1.1 Critically evaluate the role of cell biology in tissue engineering and wound repair
 - 1.2 Integrate knowledge from the disciplines of biology, materials science and engineering in an understanding of tissue
- 2
 - 2 Apply an advanced understanding of cellular processes in wound repair and tissue engineering applications.
- 3
 - 3.1 Apply the scientific method
 - 3.2 Solve problems systematically
 - 3.3 Perform data analysis.

Learning, Teaching and Assessment Strategy

Concepts, principles and theories explored in formal lectures and practised in tutorials.

Cognitive and personal skills developed in problem solving exercises, tackled by working in small groups supported by members of academic staff. The formal examination will assess all the learning outcomes expressed in the descriptor.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Summative	Examination - closed book		2 hours	100%	Yes

Legacy Code (if applicable)

ENG4068M

Reading List

To view Reading List, please go to [rebus:list](#).