



MODULE SPECIFICATION

Part 1: Information			
Module Title	Cell Control and Disease		
Module Code	USSKFR-15-3	Level	Level 6
For implementation from	2020-21		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Health & Applied Sciences	Field	Applied Sciences
Department	HAS Dept of Applied Sciences		
Module type:	Standard		
Pre-requisites	Cell Signalling 2019-20, Genes and Biotechnology 2019-20		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>Overview: Pre-requisites: students must take one out of Genetics USSKFQ-15-2 or Molecular Biotechnology USSKAM-30-2 or Cell Signalling USSKB4-15-2</p> <p>Educational Aims: This module will give an overview of Cell Signalling in cells, with a more in depth discussion of dysfunction of mechanisms that lead to disease. It will take a holistic approach to organisms, so will include animals and plants, but will have a focus on human biology to ensure relevance and interest.</p> <p>Outline Syllabus: The module will have lectures on:</p> <p>Principles of cell signalling: what is a good signal?; signal transduction; amplification; crosstalk etc.</p> <p>Extracellular signalling and receptors: hormones, cytokines, types and action of receptors, including steroids</p> <p>Intracellular signalling mechanisms: cAMP; IP3; Ca²⁺-ion signalling, role of G proteins</p> <p>Post-translational modifications; phosphorylation; oxidations; nitrosation etc.</p>

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<p>The influence of epigenetics on cell signalling pathways</p> <p>Signalling which leads to diabetes, insulin production and perception</p> <p>Signalling involved in apoptosis and cancer; mitochondria dependent- and non-dependent pathways</p> <p>Responses to environmental changes; how cells respond to changes from outside, such as heavy metals, temperature, light, pathogens etc.</p> <p>Teaching and Learning Methods: See assessment strategy</p>

Part 3: Assessment

Assessment will be of two types:

Coursework will be a data-based assignment. This has been chosen to allow students to think about how cell signalling works and how data from relevant experiments can be interpreted.

Exam (online with 24 hour submission window).

It is important that students can understand the types of experiment that leads to knowledge in this area, and how to interpret such data being generated (coursework). It is also important for students to be able to disseminate this knowledge in a logical and clear manner, and hence an essay-based assignment is appropriate (exam).

Assignments will be supported by in-class tutorial work.

First Sit Components	Final Assessment	Element weighting	Description
Examination (Online) - Component A	✓	60 %	Online Exam (24 hour submission window)
Written Assignment - Component B		40 %	Data-interpretation coursework (1500 words)
Resit Components	Final Assessment	Element weighting	Description
Written Assignment - Component B		40 %	Data-interpretation coursework (1500 words)
Examination (Online) - Component A	✓	60 %	Online Exam (24 hour submission window)

Part 4: Teaching and Learning Methods

Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:	
	Module Learning Outcomes	Reference
	Have an understanding of how cell signalling events manage the metabolism and gene expression in cells .	MO1
	Undertake data analysis relevant to the field (Component B) and disseminate information on cell signalling in a written format.	MO2
	Discuss how cells perceive signals from their extracellular environment, how this initiates signal transduction pathways and how they lead to the control of cellular events.	MO3
	Discuss how dysfunction of cell signalling pathways may lead to disease.	MO4

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Contact Hours	Independent Study Hours:	
	Independent study/self-guided study	117
	Total Independent Study Hours:	
	117	
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	33
	Total Scheduled Learning and Teaching Hours:	
	33	
Hours to be allocated		150
Allocated Hours		150
Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p>https://rl.talis.com/3/uwe/lists/D4C684DB-3F29-E584-6368-5F5B4D5ECF1D.html?lang=en-US&login=1</p>	

Part 5: Contributes Towards

This module contributes towards the following programmes of study: