University of Dundee
Module Specification Template

Section Heading	Information required
Code	MA52003
Module title	Mathematical Physiology
College	College: CASE
School	School: Division of Mathematics, EPM
Credit rating: level, no. of credits	SHE M SCQF 11 15 SCQF credits 7.5 ECTS credits
Aims	Give the students a Masters-level postgraduate education in the knowledge, skills and understanding of mathematical physiology.
Intended learning outcomes	**A. Knowledge and Understanding** Comprehend the following subject areas: Mathematical Physiology: analysis of mathematical models of biochemical reactions, cell cycle models, intracellular dynamics, intercellular dynamics. **B. Intellectual Skills** 1. Qualitative and quantitative mathematical techniques for the analysis and solution of nonlinear difference equations, ordinary differential equations and partial differential equations. 2. Mathematical modeling of biochemical systems. 3. Scientific computational techniques applied to mathematical models of biomedical systems.
Indicative content	Biochemical reactions Cell cycle modelling Intracellular dynamics Intercellular communication
Modes of delivery and student participation	Delivery will be by traditional methods, face-to-face lectures and on-campus.

Teaching, learning and assessment	The programme will involve a variety of teaching formats including lectures, tutorials, seminars, journal clubs, case studies, coursework, and an individual research project. Taught sessions will be supported by individual reading and study. Students will be guided to prepare their research project plan and to develop skills and competence in research including project management, critical thinking and problem solving, project reporting and presentation.
Summative assessment: • **Coursework (%)** • **Examination (%, No. and duration of exams.)**	100% Coursework 0% Examination
When taught	S2 (semester 2 only)
Pre-requisites or entry requirements	2.2 Honours Degree in a relevant mathematical discipline or equivalent
Co-requisites	Semester 1: Mathematical Methods, Computational Modelling and Programming, Research Methodology, Communication Skills Semester 2: Mathematical Oncology, Mathematical Ecology and Epidemiology April-Sept: Personal Project in Mathematical Biology
Anti-requisites	N/A
Further information	http://www.maths.dundee.ac.uk/MSc
Date of Approval	
Applicability of Module Specification	Students first matriculating from session 2010-11