Course Module Descriptors for Degree of Master of Research in Medical Sciences

The following descriptors have been taken from the relevant Catalogues of Courses for the academic year 2018/19, during which Krzysztof Kampinowski was a registered student of the University of Aberdeen studying towards the Degree of Master of Research in Medical Sciences. However, the courses MB5027, MB5028, MB5525 have come from the Catalogue of Courses for the 2019/20 academic year as no entry exists for them in the 2018/19 catalogue. The Catalogue of Courses archive can be accessed on the University of Aberdeen website at the following URL: https://www.abdn.ac.uk/registry/courses/.

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Date: 03/03/2020

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BT5014	Biotechnology	Credit Points: 15

Course Co-ordinator(s):
Professor Ian Stansfield

Course Overview:
Modern biotechnology is absolutely dependent upon our increasingly sophisticated ability to use microbial and mammalian host cells as factories to produce high quantities of protein pharmaceuticals, e.g. insulin. Increasingly, cells engineered with multiple foreign genes are also being used to drive small molecule drug production. This course will explore how such heterologous protein expression processes can be engineered and optimised to drive efficient synthesis of the next generation medicines on which healthcare systems are increasingly depending.

Course Description:
This course will provide a detailed description of a range of modern biotechnological processes and principles that underpin a range of protein expression systems used in the manufacture of modern medicines and protein biologics. The course will explain the challenges in overexpressing foreign proteins in host cells, and how those challenges are overcome to maximise yield, while optimising downstream purification and processing of the expressed protein. The course will introduce a range of heterologous expression systems, and explore their relative advantages.

The knowledge and skills this course will equip you with will be directly relevant to a range of bioscience career options, including employment in the rapidly expanding biotechnology sector.

Assessment & Feedback:
Summative Assessment:
Practical report (50%); Examination (50%).
Resit: viva exam with two academic staff.

Feedback:
Feedback provided via on-line marking platforms within MyAberdeen

GS50M2	Study Skills for Life	Credit Points: 0

Course Co-ordinator(s):
Ms Lynsey Christie

Course Overview:
This course gives students the opportunity to develop the transferable skills required to both complete their degree programme and progress in their future
career. The course provides guides and workshops on a variety of skills, including literature appraisal, academic integrity, writing, presentations, note
taking and time management. It provides online resources for developing IT and numeracy skills, and acts as a resource for advertising development
opportunities both within and outside the university.

The course strongly relies on self-reflection and identification of opportunities by the students to use the support sessions and online resources available.
Although completion of the course itself is compulsory the majority of the course sessions offered are optional, and support is given to the students to

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help them identify what they most need to work on. Completion of the course is achieved through formative assignments.

This course is the first of two courses relating to cross-discipline skills development that is compulsory for all taught postgraduate students in the School of Medicine, Medical Sciences and Nutrition.

Course Description:
This course gives students the opportunity to develop the transferable skills required to both complete their degree programme and progress in their future career. The course provides guides and workshops on a variety of skills, including literature appraisal, academic integrity, writing, presentations, note taking and time management. It provides online resources for developing IT and numeracy skills, and acts as a resource for advertising development opportunities both within and outside the university.

The course strongly relies on self-reflection and identification of opportunities by the students to use the support sessions and online resources available.
Although completion of the course itself is compulsory the majority of the course sessions offered are optional, and support is given to the students to help them identify what they most need to work on. Completion of the course is achieved through formative assignments.

This course is the first of two courses relating to cross-discipline skills development that is compulsory for all taught postgraduate students in the School of Medicine, Medical Sciences and Nutrition.

Assessment & Feedback:
Formative Assessment:
Academic skills test - focus on collecting, reviewing and evaluating literature; Induction materials test; Evaluation and development plan with feedback on support available.

GS55M2	**Beyond Your Degree**	**Credit Points: 0**

Course Co-ordinator(s):
Ms Lynsey Christie

Course Overview:
This course gives students the opportunity to develop the skills needed to progress in their degree programme and beyond into their chosen career. It focuses on the job application process, the support available from the university both during and after their degree, and the skills that apply to undertaking projects. Sessions include an introduction to the careers service, CV, cover letter and interview skills, workplace professionalism and managing projects. Online resources are provided to support transferable skill development.

The course strongly relies on self-assessment and identification of opportunities by the students to use the support sessions and online resources available. Although completion of the course is compulsory, most of the course sessions offered are optional, and completion of the course is achieved through formative assignments.

This course is the second of two courses relating to generic skills that are compulsory for all taught postgraduate students in the School of Medicine, Medical Sciences and Nutrition.

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Course Description:
The aim of this course is to give students the opportunities and resources to help develop their non-discipline specific academic and transferable skills. It also aims to help them identify and reflect on what they feel their own strengths are and the areas for development, and highlight the opportunities available to them through their programme.

Assessment & Feedback:
Formative Assessment:
Personal development review.

MB5025	Molecular Genetics	Credit Points: 15

Course Co-ordinator(s):
Professor Bernadette Connolly

Course Description:
Series of lectures covering fundamental topics such as RNA (coding, non-coding transcription), DNA –protein interactions (e.g. chromatin, transcription factors), 3D structure of chromosomes and regulation of gene activity) as well as on genome structure/genetic mapping and advanced analytical methods such as CRISPR and genome editing technology. Lectures are complemented by tutorials and workshops covering related topics.

Assessment & Feedback:
Summative Assessment:
50% coursework; 50% exam.
Resit: 100% MCQ exam for students taking MSc in Cell and Molecular Systems Biology (conversion course).

MB5027	Shaping a Research Question	Credit Points: 5

Course Co-ordinator(s):
Personal Chair Anne Donaldson

Course Overview:
This short course allows students to explore the research carried out within the School of Medicine, Medical Sciences & Nutrition and identify a supervisor and research area for their extended research project.

Course Description:
Shaping a Research Question is a five credit course for students who will undertake the Extended Research Project in Medical Sciences. Students will explore the research carried out within medical sciences research programmes and will identify those areas of research which interest them and which form the basis of their future research careers. Principle investigators will be approached and potential research projects discussed. The principle investigator and student will agree a research area for the project and the student will explore the published literature in this research area and will produce a 1500 word essay on the background of the project.

Assessment & Feedback:
Formative Assessment:
1500-word essay (100%).
Feedback:
Students will receive written feedback via MyAberdeen

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MB5028	Profiles of Immunology	Credit Points: 15

Course Co-ordinator(s):
Dr Frank Ward

Course Overview:
This course aims to provide students with an understanding of how behaviours (e.g. smoking, diet, medication adherence, etc) can protect, promote, risk or damage health; the key drivers of (un)healthy behaviours; and techniques to change health behaviours.

Course Description:
Aims
To provide all students with the knowledge required for more advanced teaching

Learning outcomes
At the end of this course students should be familiar with the following:

- Basic anatomy and cells of the immune system
- Cellular functions of myeloid and lymphoid
- cell types
- Links between innate and adaptive immunity
- Immune effector mechanisms
- How immune regulation maintains homeostasis

Assessment & Feedback:
Summative Assessment:
Multiple choice exam (50%), individual oral presentation (25%), flow cytometry (25%)

MB5525	Extended Research Project in Medical Sciences	Credit Points: 120

Course Co-ordinator(s):
Personal Chair Anne Donaldson

Course Overview:
This course is an extended research project which is designed with a supervisor/principle investigator with research interests aligned with those of the student. The project (including assessment) runs from January until August.

Course Description:
This course is an extended research project, running from January until August. The project is carried out in the research group where the research is aligned with the research interests of the student. The student will use state-of-the-art medical sciences techniques to address a research question designed by the student and the research supervisor. Progress during the project will monitored by completion of monthly progress reports, and the project will be assessed by oral presentation and viva, and submission of a project write-up in the form of a research manuscript. The supervisor will also submit a supervisor report as part of the assessment of the student at the end of the project.

Assessment & Feedback:
Summative Assessment:
Individual oral presentation (30%), laboratory supervisor assessment report (10%), project report/dissertation (60%)

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Formative Assessment:
Progress report submitted every 4 weeks - formative feedback to be provided by supervisor

MC5008	Introduction to Microbiology	Credit Points: 15

Course Co-ordinator(s):
Dr Donna MacCallum

Course Overview:
This course will provide students with microbiology knowledge for further advanced studies and will provide training in microbiological laboratory techniques. At the end of this course students will have an understanding of microbes associated with health and disease (including bacteria, fungi and viruses), practical and academic understanding of laboratory techniques required for the culture, identification and characterisation of microbes, and increased confidence in reading and critiquing primary research literature.

Course Description:
Lectures will cover basic microbiology and microbes associated with health and disease.

Practical classes will cover selective culturing of microorganisms, Gram staining, other techniques and microscopy to characterise microorganisms, tests to assist in identification of species, and antimicrobial drug susceptibility testing.

Journal clubs will be held on a weekly basis and will be used to encourage students to engage with current scientific literature and to become confident in critiquing the information.

Assessment & Feedback:
Summative Assessment:
1st attempt; continuous assessment (written practical report in manuscript form)(50%); one 2 hour written examination - MCQ (50%) Resit: Oral interview to determine whether the student has achieved the learning outcomes of the course.

Formative Assessment:
Students are encouraged to submit their practical report manuscript for formative feedback one week before the final deadline - all reports are commented upon individually via myAberdeen.

Feedback:
Students receive formative written feedback on their practical report via myAberdeen. The final submitted version is also commented upon in myAberdeen and additional comments on how the learner could improve in the future are submitted via myAberdeen, as well as a rubric giving feedback on performance in various areas for the assessment. Students can ask for feedback on their MCQ exam.

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