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| 4101BMBMOL  Semester 1  *Biomedical science* | BIOMEDICAL SKILLS  (20c) | *Aim:*  This module aims to facilitate effective study of Biomedical Science by providing a foundation in basic methodology, data handling, IT, laboratory techniques and study and transferable skills, including teamwork. This module will provide an opportunity for the self-awareness statement to be completed and for reflection on this. | *Learning activities:*  Lectures, practicals, workshops and tutorials | *Assessment:*  Self awareness statement (10%) lab skills test (40%) Reflection on feedback (10%) Tutorial presentation (40%) |
| 4102BMBMOL  Semester 1  *Biomedical science* | CELL BIOLOGY  (20c) | *Aim:*  To provide a fundamental introduction to cellular biology and the manner in which the functions of individual cells contribute to the overall function of a tissue in health and disease. | *Learning activities:*  Lectures, Practical Exercises and an Assessment Workshop | *Assessment:*  Group Poster Presentation (50%) MCQ Exam (50%) |
| 4103BMBMOL  Semester 1  *Biomedical science* | PRINCIPLES OF BIOCHEMISTRY  (20c) | *Aim:*  The aim of this course is to provide an education in the fundamental biochemical processes which occur in the cell. This will be underpinned by a through introduction into the relevant molecular biology of DNA, proteins and lipids. | *Learning activities:*  This course will consist of lectures and practicals. The practicals will  develop laboratory skills and re-inforce taught material. | *Assessment:*  Examination (50%) Practical report (50%) |
| 5101BMBMOL  Semester 1  *Biomedical science* | BIOMEDICAL RESEARCH METHODS  (20c) | *Aim:*  The aim of this module is to equip biomedical science students with essential research skills and knowledge of methods and techniques that are routinely applied in biomedical research. | *Learning activities:*  Material will be delivered through lectures, workshops and tutorials. The lectures will be designed to introduce the routine laboratory-based methods and techniques currently used in biomedical research. Workshops will be delivered to enable the students to develop their analytical/data handling/statistical skills. Tutorials will be linked to assessment tasks and are designed to facilitate student development and learning. | *Assessment:*  Group Presentation (40%) Research Proposal (60%) |
| 5103BMBMOL  Semester 1  *Biomedical science* | IMMUNOLOGY AND INFECTION  (20c) | *Aim:*  An introduction to the practical and theoretical concepts of medical microbiology and immunology.  To provide an understanding of the principles and practices involved in the laboratory diagnosis, prevention and treatment of infectious diseases in humans. | *Learning activities:*  Lectures, practicals, workshops and videos | *Assessment:*  immunology online (50%) microbiology practical and mcq (50%) |
| 5105BMBMOL  Semester 1  *Biomedical science* | HISTOLOGY AND PHYSIOLOGY  (20c) | *Aim:*  This course aims to develop knowledge of, and practical skills in, histology and to inform students of the basic physiology of the endocrine and nervous systems and to introduce the topic of reproductive science. | *Learning activities:*  Material will be delivered through lectures and practical classes. The  lectures will be designed to introduce two main themes to the students histology and  physiology, while helping students understand how these topics integrate from a  biochemical and biomedical perspective. Students will undertake a substantial  practical component to enable them to develop valuable practical skills in histological  techniques. | *Assessment:*  Examination (60%) Portfolio (40%) |
| 6101BMBMOL  Semester 1  *Biomedical science* | STUDY OF DISEASE 1  (20c) | *Aim:*  The module with explore mechanisms for the initiation of atherosclerosis along with identifying relevant risk factors. The content with also examine the effective use of statins and anti-platelet therapy. This will be underpinned by detailing laboratory diagnostic tests and current research into atherosclerosis. A critical evaluation of the laboratory tests and pathological mechanisms associated with endocrine function will also be undertaken. | *Learning activities:*  Material will be delivered through a combination of lectures, tutorials, seminars and workshops.  The module incorporates mini literature reviews for student, which will involve self-directed learning with tutor support. | *Assessment:*  Essay 1 (50%) Essay 2 (50%) |
| 6102BMBMOL  Semester 1  *Biomedical science* | STUDY OF DISEASE 2  (20c) | *Aim:*  This module will provide students with comprehensive biochemistry, physiology and pathology of the liver and the digestive tract , provide details of the diagnostic tests available for investigation of liver and digestive disorders including its treatment, explore the genetic basis of liver and gastrointestinal disorders and introduce the concept of genetic counselling and therapy, and to introduce future directions of research into liver and digestive disorders. | *Learning activities:*  Lectures will provide in-depth knowledge of the subject whilst the workshops will help  in the development of the basic and advanced principles delivered in the lectures. | *Assessment:*  Case Study Evaluation (100%) |
| 7102BSBMOL  Semester 1  *Biomedical science* | Medical Genetics  (30c) | *Aim:*  To provide an overview of the roles and investigations of genes and disease. | *Learning activities:*  Lectures, practicals, workshops, tutorials and student-centred activities. | *Assessment:*  Examination (50%) Lab report (50%) |
| 4104BMBMOL  Semester 2  *Biomedical science* | INTRODUCTION TO BIOMEDICAL SCIENCE  (20c) | *Aim:*  To introduce the work of clinical laboratories and recent developments of relevance to biomedical scientists and also to foster course identity. | *Learning activities:*  Lectures, tutorials and workshops. | *Assessment:*  Tutorial essay (40%) Practical scenarios (60%) |
| 4105BMBMOL  Semester 2  *Biomedical science* | ANATOMY, PHYSIOLOGY AND GENETICS  (20c) | *Aim:*  To provide an introduction to the major anatomical and physiological systems which underpin the study of Biomedical Science and an introduction to the study of human genetics. | *Learning activities:*  Lectures, practical classes and workshops | *Assessment:*  Practical class with assesment (50%) Exam (50%) |
| 4106BMBMOL  Semester 2  *Biomedical science* | MICROBIOLOGY  (20c) | *Aim:*  This course aims to provide a broad spectrum of knowledge about microorganisms and their activities which will provide a foundation for microbiology modules at Levels 5 and 6. | *Learning activities:*  Lectures, Practical, Workshops, Videos, Clickers. | *Assessment:*  Practical assessment (50%) Examination (50%) |
| 5102BMBMOL  Semester 2  *Biomedical science* | CLINICAL BIOCHEMISTRY  (20c) | *Aim:*  An introduction into how biochemical markers can investigate the function and dysfunction of systems, organs and tissues and how this is applied to the diagnosis and treatment of disease. | *Learning activities:*  Lectures, practical | *Assessment:*  Exam (50%) Data analysis & interpretation (50%) |
| 5104BMBMOL  Semester 2  *Biomedical science* | PERSPECTIVES IN BIOMEDICAL SCIENCE  (20c) | *Aim:*  Through this module students will develop an awareness of some areas at the forefront of Biomedical Science development, and extend their career planning to organisational awareness and making things happen | *Learning activities:*  lectures, seminars, workshops, tutorials | *Assessment:*  tutorial essay (50%) tutorial oral presentation (30%) career planning (20%) |
| 5106BMBMOL  Semester 2  *Biomedical science* | BLOOD CELL SCIENCE  (20c) | *Aim:*  This module aims to provide the students with an opportunity to increase and develop their understanding of the principles and practice of Haematology and Transfusion Science, to extend the students' knowledge and understanding of haematological disorders and malignancies, together with the undesirable effects of blood transfusion and to develop students' practical skills in Haematology and Transfusion Science. | *Learning activities:*  Most of the material will be delivered through lectures and workshops. The practical element should help enforce some principles and allow the student to develop basic haematological techniques in cell counting and assessing coagulation pathways. MCQ will be posted on blackboard to supplement further understanding from the lectures. Workshops will extend knowledge derived from the lectures to prepare the student for their level 6 studies. | *Assessment:*  exam (50%) case study (50%) |
| 6103BMBMOL  Semester 2  *Biomedical science* | STUDY OF DISEASE 3  (20c) | *Aim:*  To provide an integrated knowledge of human pathological processes of the renal and respiratory systems, and the laboratory methods used to study disease, including the genetic basis of disease where appropriate and the use of bioinformatics. | *Learning activities:*  Material will be delivered through a combination of lectures, tutorials, seminars and workshops. Assessment will be via final examination. | *Assessment:*  Exam (100%) |
| 6105BMBMOL  Semester 2  *Biomedical science* | NUTRACEUTICALS AND TOXICOLOGY  (20c) | *Aim:*  1. To develop an in-depth knowledge of biochemistry, physiology and pathology of nutraceuticals in relation to health and disease.  2. To introduce the principles of toxicity and structural manifestations of toxicity to cells, tissues and organ systems.  3. To emphasise the importance of nutraceuticals and toxicology within the context of Biomedical Science including future directions of research. | *Learning activities:*  Lectures will provide in-depth knowledge of the subject whilst the workshops will help  in the development of the basic and advanced principles delivered in the lectures.  The practical sessions will introduce techniques used in the field of xenobiotics and  will also provide an opportunity to write the results in the format of a paper to be  published in the "Journal of Nutrition" thus giving students further experience of  writing scientific papers. | *Assessment:*  Exam (50%) Practical Write-up as Paper (50%) |
| 6106BMBMOL  Semester 2  *Biomedical science* | ADVANCED IMMUNOLOGY AND INFECTION  (20c) | *Aim:*  This module will enable students to develop an in depth understanding of the origins, functions and aberrations of the immune system, microbial interactions with the immune system and infectious diseases and the strategies employed for the prevention, diagnosis, treatment and research of immune and infectious diseases. | *Learning activities:*  Lectures, workshops and Practicals | *Assessment:*  Examination (50%) Practical Report (50%) |
| 7105BSBMOL  Semester 2  *Biomedical science* | Diagnostics and Therapeutics  (30c) | *Aim:*  To provide an overview of the application of techniques to disease diagnosis and therapeutic modulation. | *Learning activities:*  Lectures, practicals, workshops and student-centred activities. | *Assessment:*  Module examination (50%) Laboratory report (50%) |
| 7106BSBMOL  Semester 2  *Biomedical science* | Current Issues in Biomedical Sciences  (30c) | *Aim:*  To provide students with an appreciation of current research, controversies, state of the art and newsworthy breakthroughs that are addressed by biomedical scientists Guest speakers from local industry will provide a commercial perspective. | *Learning activities:*  Lectures, workshops, seminars, tutorials and student-centred activities. | *Assessment:*  Critical literature review (60%) Journal club presentation (40%) |
| 6100GNBMOL  Yearlong  *Biomedical science* | RESEARCH PROJECT  (40c) | *Aim:*  To equip the student with the necessary transferable skills to investigate a research topic and present it using appropriate methods of scientific communication. | *Learning activities:*  Lectures and workshops on skills required to carry out and evidence a piece of independent research.  Practical sessions: to be completed within specified start and completion dates as stated in the module handbook. Compliance with these dates will be required in order to present for assessment.  Tutorials: the research project is self-directed, with guidance through tutorials.  Report writing.  Oral/Powerpoint presentation | *Assessment:*  Literature review (60%) Oral Presentation (30%) Mark for practical performance (10%) |