MODULE DESCRIPTOR

Module Title	Current Perspectives in Bioscience
Course Title	BSc Bioscience, BSc Human Nutrition
School	☒ ASC ☐ ACI ☐ BEA ☐ BUS ☐ ENG ☐ HSC ☐ LSS
Division	Division of Human Sciences, Division of Food Science
Parent Course (if applicable)	Bioscience
Level	6
Module Code *(showing level)*	ASC 6-450-1718
JACS Code (completed by the QA)	
Credit Value	20 credit module
Student Study Hours	Contact Hours 45 Student Managed Hours 155
Pre-requisite Learning	240 credit points of which no more than 120 are at level 4 and no less than 120 at level 5 or equivalent.
Co-requisites	None
Excluded combinations	None
Short Description (max. 100 words)	This unit takes a critical look at science, its past, present and future and examines how it relates to the society it serves and is perceived by scientists and non-scientists alike. The unit will explore the links between pure science and applied science which give rise to technological advances. It also considers science as culture and explores the way in which science is communicated and features in the cultural life of nations. The ethical dimension of scientific endeavours is also examined along with the importance of professionalism within the scientific community.
Aims	The aims of this unit are: • To provide students with an understanding of the nature of science, its values and methods. • To examine the development of scientific practice and rational investigation from its origins to the present day.

	• To evaluate the contribution of key historical figures and events to the development of rational enquiry. • To consider how ethical issues arising from science and technology are dealt with by scientists and laypersons. • To explore issues concerning the public understanding of science. • To examine the means by which science is communicated. • To provide students with the opportunity to examine controversial issues that relate to the practice of science. • To provide the students with a sound ethical and professional basis on which to build a career in science.
Learning Outcomes (4 to 6 outcomes)	• Critically compare modern theories of the nature of scientific enquiry. • Understand the nature of public knowledge and perception of scientific concepts. • Recognise the reasoning underpinning scientific method, • Understand the origins of science and how it has shaped and continues to influence society. • Evaluate critically and explore rationally, arguments in, and associated with, science. • Communicate science through problem based learning and written reports ***Transferable Skills:*** • General literacy, numeracy and IT skills. • Critical thinking and analysis. • Intellectual and cultural openness towards alternative and competing ideas. • Self Management.
Employability	Students successfully completing this unit will have sound grounding in the history, philosophy and practice of science. They will be able to communicate science in a clear, balanced and informative manner. Students will also have an understanding of the professional and ethical obligations of a working scientist. These skills will provide scientifically literate individuals who have an understanding of professionalism which can be applied to many careers.

Teaching and learning pattern	Contact hours includes the following: (please click on the checkboxes as appropriate) √ Lectures ☐ Group Work: ☐ Seminars ☒ Tutorial: ☐ Laboratory ☐ Workshops ☐ Practical ☐ VLE Activities **Teaching and Learning Pattern:** Lectures (60% of time), tutorials/workshops (40% of time)
Indicative content	Key philosophical and intellectual underpinnings of science today. An introduction to the origins of science, and its emergence from and interaction with philosophy. How science functions today How society views and values science. Levels of public understanding of science and technology. Popular misconceptions of the role of science (both positive and negative). Communicating science. The various formats, audiences and approaches we transmit and receive Science as a profession**.** From individuals to organizations and policies.
Assessment method (Please give details – of components, weightings, sequence of components, final component)	**Assessment by means of TWO assessed Courseworks.** 1. The first being a Problem Based Learning Assessment where the students are working in groups and provided with a problem(s) to address. This will take place part way through the module and will require the development of a plan to solve the problem raised which is subsequently presented to the module cohort by means of a group PowerPoint Presentation (40% weighting) 2. The second being an Extended Essay on an individual basis demonstrating a detailed approach and critical analysis to addressing the problem**.** This will be submitted at the end of the module and of 2,000 words in length (60% weighting)
Mode of resit assessment (if applicable)	Students who fail coursework 1 will be required to submit an individual problem based learning powerpoint presentation with a narrative.

	Students who fail coursework 2 will be required to resubmit the extended essay.
Indicative Sources ***(Reading lists)***	***Core reading:*** Holliman, R., Thomas, J., Smidt, S., Scanlon, E., & Whitelegg, L. (eds.) (2009) *Practising science communication in the information age: Theorising professional practices.* Oxford University Press, Oxford. • Holliman, R., Whitelegg, L. Scanlon, E., Smidt, S., & Thomas, J., (eds.) (2009) *Investigating science communication in the information age: Implications for public engagement and popular media.* Oxford University Press, Oxford. • Gregory, J. & Miller, S. (2000) *Science in public: communication culture, & credibility.* Perseus. • Chalmers, A.F. (1982) *What is this thing called science?* Open University Press. • Lee, J.A. (1999) *The scientific endeavour: a primer on scientific principles and practice.* Benjamin Cummings/Pearson. ***Optional reading:*** • Recent Advances in Treatment of Coronary Artery Disease: Role of Science and Technology. Kandaswamy E, Zuo L. Int J Mol Sci. • A microfluidic chip containing multiple 3D nanofibrous scaffolds for culturing human pluripotent **stem cells**. Wertheim L, Shapira A, Amir R, Dvir T. Nanotechnology • Generation of hematopoietic **cells** from mouse pluripotent **stem cells** in a 3D culture system of self-assembling peptide hydrogel. Shan W, Wang B, Xu Y, Li X, Li X, Wang H, Lin Y, Tie R, Zhao Q, Wang J, Zheng W, Hu Y, Shi J, Yu X, Huang H. J Cell Physiol. • NK cell therapy for hematologic malignancies. Mehta RS, Randolph B, Daher M, Rezvani K. Int J Hematol. • Boyd, R. Gasper, P. & Trout, J.D. (eds.) (1991) *The philosophy of science.* MIT Press. • Bulger, R.E., Heitman, E. & Reiser, S.J. (1993*) The ethical dimensions of the biological science.* Cambridge University Press. • Chalmers, A.F. (1990) *Science and its fabrication.* Open University Press. • Gillies, D. (1993) *Philosophy of science in the twentieth century: four central themes.* Blackwell. • Moore, J.A. (1993) *Science as a way of knowing: the foundations of modern biology.* Harvard Press.

Other Learning Resources	Moodle, journals and websites referenced during the raising of topical issues in the lecturing schedule