Coordinator: M. Jaspars

SX3002 6th Century Course: "Science and Society"

Medical Humanities Course Code ME33SS

Introduction

This course will introduce how the role of science in society is changing. Engagement of scientists with peers, the public and policy makers is becoming increasingly important to enhance the impact of research, increase public awareness and to inspire the next generation of scientists. The concepts of intellectual property from both an academic and commercial perspective will be introduced. The importance of scientific ethics within a research environment will be discussed with reference to case studies from a wide range of disciplines. There is also a strong emphasis on improved oral and verbal communication so that our current graduates will be equipped with the skills essential for a future scientific career. This course will address the different communication skills required for promoting research to different audiences (public, peers, government/policy makers, funding bodies) and hence increase the impact. This year we will focus on how the COP-28 climate negotiations are communicated to policy makers and the general public.

The course will typically consist of two hours a week and will include taught lectures, workshops/discussion sessions, guest seminars and a field trip.

Course Coordinator: Prof. Marcel Jaspars, G21 Meston, m.jaspars@abdn.ac.uk; 01224 272895

Course Content

A. Intellectual Property Rights (IPR) (SX3002 Only)

Titilayo Adebola

This topic will involve a total of 4 hours over two weeks. The course will introduce the legal, economic and social dimensions of Intellectual Property Rights (IPRs) with a focus on patents, trade secrets, copyrights and trademarks. By exploring the role of IPRs on scientific advancements and employing practical examples, we will discuss what can and cannot be protected – ideas, inventions, innovations and images. By the end of the classes, you will develop a comprehensive understanding of the complexities surrounding IPRs and its significance in shaping the relationship between science and society. The class group assignment will also be introduced during this session. This assignment will be completed and submitted during the second session.

B. Entrepreneurship (SX3002 Only)

Richard Corrigan and Ijeoma Obiagwu

This workshop will give you an overview of entrepreneurship. Using interactive tools, we'll introduce you to the idea of entrepreneurship and we will show you how easy it can be to come up with a viable business idea, destroying the myth that entrepreneurs are born not made.

C. Ethics:

Angel Cuesta and Bill Harrison (SX3002 and ME33SS)

This will take place over 2 weeks during which you will be introduced to how research functions at present. This will include an introduction to how research is conducted and funded and how the public and other scientists are informed about results from the research. Throughout we will consider research ethics and develop an ethical code of practice for research. The assessment will be based on real examples of potentially non-ethical research behaviour and its impact on the wider community.

D. Communicating Science (SX3002 and ME33SS)

Marcel Jaspars and Chris Croly

You will be introduced to science communication to a range of audiences (scientific peers, public, the media and government) using several different media platforms. Topics covered will be selected from:

- Science in the news.

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- Different audiences and reasons to communicate science
- Different ways to communicate science including social media
- History of science communication
- Communication in times of crisis
- Public affairs
- Science advice for policy
- Press releases and press conferences

There will then be a visit to the renovated Aberdeen Science Centre (ASC), where you will have a chance to discover the exhibits for yourself and hear from the staff what is involved in running a science centre. You will also be given a topic, a target audience and a budget and tasked to plan a new exhibit or activity. The following week, you will be asked to provide positive criticism on a chosen ASC exhibit to the staff from the centre.

E. COP-28

Course Team

We will discuss the COP-28 climate negotiations in our course. We will discuss how to communicate complex science to policy makers and difficult decisions to the general public. You will use this knowledge to plan a scenario from the perspective of different countries explaining the challenges they face due to climate change and how they plan to respond and present this to the class as an electronic poster.

Course Assessment

The assessment for sixth century courses is 100% continuous assessment. **In order to pass the course at the first attempt you MUST obtain a Common Grading Scale (CGS) score of D3 (9) or better overall in the *continuous assessment*.** You **MUST** hand in all units of continuous assessment by the prescribed deadline or marks will be lost. Work handed in three days late will lose 25% of the mark; 5 days late 50% of mark; one week late 75% of mark; any later will receive a zero mark.

There will be four units of assessment with deadlines spread over the semester which will include:

1. Taking part in group discussions on the different issues related to ethics in research, then choosing a case study which will be written up as a short, structured essay (directed to answer certain points). This will be done individually and submitted through Turnitin.
2. Through an in-class assignment, your group will be asked to write the 'claims' that describes the key features of an invention which could be used as part of a patent application.
3. After your visit to ASC you will prepare an individual report summarising your feedback, based on your findings at the centre and our discussions in the next week: General evaluation of ASC; Evaluation of a specific exhibit; A description for a proposed new exhibit.
4. Plan a scenario for countries from different groups (eg Small Island Developing States) on the problems they face due to climate change and how they plan to respond. This is a group exercise, and you will prepare a poster that will be presented to the entire class.

You must complete all assessments – missing a single one means a resit and your grade will capped at D3

Deadlines and Feedback Dates for Assessments

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	Assessment	Type	Set Date	Due Date	Feedback date	Weighting
A	Intellectual Property	Group	26/09/23	04/10/23	20/10/23	25%
B	Ethics	Ind	25/10/23	10/11/23	27/11/23	25%
C	Communication	Ind	08/11/23	24/11/23	10/12/23	25%
D	COP-28	Group	01/11/23	29/11/23	17/12/23	25%

Useful Reading

Scientific Ethics

1. The Ethics of Science, an introduction by David. B. Resnik (Taylor and Francis (2007)).
2. Responsible Conduct of Research by Adil E Shamoo and David B Resnik (Oxford University Press (2009)).
3. The Cambridge Medical Ethics Workbook pp. 77-100. Fulford, K. W. M., 'Chapter 4 – Medical research: participation and protection' in Donna Dickenson, Richard Huxtable & Michael Parker (eds), http://ebooks.cambridge.org/ebook.jsf?bid=CBO9780511910098
4. Retractionwatch website: http://retractionwatch.com/
5. Plastic Fantastic: How the biggest fraud in Physics shook the scientific world, by Eugenie Samuel Reich (Palgrave Macmillan (2009)).

Communicating Science

6. Science in Public: Communication, Culture and Credibility, Steve Miller and Jane Gregory (Perseus Books, 2000).
7. Handbook of Science Communication, Anthony Wilson (editor) (IOP, 1998).
8. Study and Communications Skills for the Chemical Sciences, Tina Overton, Stuart Johnson and Jon Scott (2nd Ed OUP 2015).
9. Handbook of Public Communication of Science and Technology, Edited by Massimiano Bucchi, Brian Trench (Routledge, *(*2008)).
10. Australian Science Media Centre. Tips for Scientists Using Social MEDIA (http://sciencemediasavvy.org/wp-content/uploads/2013/05/6-SMS-Tips-for-scientists-using-social-media.pdf
11. Online Collaboration Scientists and Social Media (2014) *Nature* http://www.nature.com/news/online-collaboration-scientists-and-the-social-network-1.15711
12. How Scientists Engage the Public (2015) Pew Research Centre http://www.pewinternet.org/2015/02/15/how-scientists-engage-public/

IPR

13. World Intellectual Property Organisation, "What is Intellectual Property?" (2020) WIPO https://www.wipo.int/edocs/pubdocs/en/wipo_pub_450_2020.pdf
14. David Koepsell, "Issues in Intellectual Property and Science" in Scientific Integrity and Research Ethics, SpringerBriefs in Ethics. Springer (2017).
15. Peter Yu, "Imitative Pasts, Innovative Pathways and Intellectual Property" in Anselm Kamperman Sanders ed *Innovation and Triple Helix* Edward Elgar Publishing (2019) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3293718