

IL139-15 Rethinking Health Science

22/23

Department

Institute for Advanced Teaching and Learning

Level

Undergraduate Level 3

Module leader

Vivan Joseph

Credit value

15

Module duration

10 weeks

Assessment

100% coursework

Study location

University of Warwick main campus, Coventry

Description

Introductory description

The COVID-19 pandemic has affected everyone. The responses to the pandemic (e.g. 'lockdowns' and mass vaccination) have been one of the most significant public health interventions in recent times. From coronavirus briefings to vaccinations, everyone has become aware of the importance of health and medical sciences. This module is inspired by these recent events to ask wider, more general questions about how we all think - and should think - about aspects of the theory and practice of health and medical sciences. It is an opportunity for any undergraduates (from their 2nd year) who are interested in thinking through some fascinating but complex questions.

How do theoretical and practical aspects of scientific research (particularly in health and medical sciences) relate to the wider societies that research is conducted in (e.g. how do biomedical theories about mental disorder impact on wider society)? Viewed as a group of disciplines, how do the sciences relate to other disciplines (e.g. in terms of what constitutes evidence and justification)? Viewed as a group of skilled and specialist activities with correspondingly specialised knowledge, how might scientific research (e.g. regarding a new disease) be most effectively communicated to the public?

This module aims to encourage participants from across the University to start thinking about these and related questions in a systematic way. Drawing on philosophy of science and life sciences, the module will cover some more conceptual, theoretical content (e.g. causation, reductionism, objectivity) and some more applied content (e.g. communicating science, science

and authority, collaboration and peer review).

In terms of teaching and learning, the emphasis will be on encouraging critical thinking skills and the effective communication and justification of ideas in written form and discussion. To this end, where practicable, students will be encouraged to analyse and present information to each other (e.g. in group discussions or short presentations) and to offer constructive critiques of those positions and presentations.

Module aims

This module aims to:

- (1) help students understand how social, intellectual and cultural movements have impacted upon the life sciences and medicine and vice versa;
- (2) Facilitate students' critical consideration of specific concepts and practices relevant to science and medicine (e.g. the concepts of disease, cause, and evidence, and the practice of peer review), and
- (3) Facilitate students' critical consideration of the benefits and limitations of science and medicine.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

The topics this module will cover include interdisciplinarity, causation, reductionism, disease and health, evidence and justification, objectivity, science and authority, and communicating science.

Learning outcomes

By the end of the module, students should be able to:

- Recognise, understand and use key concepts in the research and application of science, in particular life sciences and medicine (e.g. 'cause', 'objectivity' and 'disease')
- Analyse and evaluate ways in which scientific research is conducted and communicated to the public.
- Analyse and evaluate texts and other material with a comparative understanding of different disciplinary uses of evidence and argument.
- Imaginatively respond to a range of stimuli (e.g. texts, films, ideas) to aid learning individually and as part of a group, and use their responses to initiate the formulation of questions for further research
- Critically reflect on their own and others' experiences as participants in a creative and interdisciplinary learning process
- Articulate and justify arguments verbally and in writing, supported by independent research, using resources and referencing material on research-related topics of interest.

Indicative reading list

Handbook of the Philosophy of Medicine, edited by Thomas Schramme and Steven Edwards,

Springer, 2017

The Routledge Companion to Philosophy of Medicine, edited by Miriam Solomon, Jeremy R. Simon and Harold Kincaid, Routledge, 2016

Establishing Medical Reality: Essays in the Metaphysics and Epistemology of Biomedical Science, edited by Harold Kincaid and Jennifer McKittrick, Springer, 2007

Objectivity, Lorraine Daston and Peter Galison, Zone Books, 2007

Psychiatry and Philosophy of Science, Rachel Cooper, Acumen, 2007

The Blackwell Guide to the Philosophy of Science, edited by Peter Machamer and Michael Silberstein, Blackwell, 2002

Observation and Experiment in the Natural and Social Sciences, edited by Maria Carla Gavalotti, Kluwer, 2003

Understanding Scientific Understanding, Henk W. de Regt, OUP, 2017

Research element

There will be some guided and some independent research towards the assessments.

Interdisciplinary

The module aims to help students arrive at an understanding of the relationship between social, intellectual and cultural movements, and the life sciences and medicine. The module also aims to facilitate students' critical consideration of specific concepts and practices relevant to science and medicine. To meet those aims, we need vantage points outside science and medicine. Therefore, in addition to aspects of life sciences and medicine, the module will also draw on philosophy of science and medicine, history of medicine, as well as elements of other disciplines (e.g. medical sociology, science and technology studies).

Subject specific skills

- Recognise, understand and use key concepts in the research and application of science
- Analyse and evaluate forms of scientific research
- Analyse and evaluate forms of communicating scientific research
- Understand and use elements of different disciplinary languages
- Demonstrate an understanding of different disciplinary uses of evidence and argument

Transferable skills

- Critical reflection and thinking
- Team working
- Analytical skills
- Cognitive flexibility
- Complex problem solving
- Written communication skills
- Verbal communication skills
- Management of learning
- Independent working skills
- Research skills

Study

Study time

Type	Required
Lectures	9 sessions of 1 hour (6%)
Seminars	9 sessions of 1 hour (6%)
Tutorials	2 sessions of 1 hour (1%)
Private study	30 hours (20%)
Assessment	100 hours (67%)
Total	150 hours

Private study description

Private study hours include background reading, completing reading/other tasks in preparation for timetabled teaching sessions and follow-up reading work.

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group A

	Weighting	Study time
Presentation (group - combined individual and collective mark)	30%	30 hours

A group presentation that includes an individual component. Each group (of 3, 4, or 5 students) should communicate a health science-related theory, position or debate in a way that is accessible to a non-specialist audience while also providing some evaluation, analysis, or application of the material that goes beyond a description of the academic sources used. Each student is to present for 2 minutes as part of the group's presentation.

Each student must also produce a short (1000 word) individual reflection on their contribution to the group presentation to cover (i) working with other members of the group (a description and evaluation of the process), and (ii) an evaluation of their group's finished presentation.

Weighting

Study time

The group presentation as a whole will be given a mark, which will constitute 50% of each individual member of the group's mark; the other 50% will be constituted by each member's individual reflection.

3000 Word-equivalent SDA

70%

70 hours

An individual Student Devised Assessment with accompanying rationale. 3000 words equivalent for this component as a whole, 2000 words for the rationale. Each student should devise a piece (e.g. something pictorial, material, a video, audio recording, textual) that, together with the accompanying rationale, demonstrates (i) engagement with theory (in particular some idea or debate related to health science), (ii) some evaluation, analysis, or application of the material that goes beyond a description of the academic sources used, and (iii) an explanation of why the choice of piece is effective as a way of achieving (i) and (ii).

Feedback on assessment

Students will be encouraged to get formative feedback as they plan their assessments. Detailed written feedback will be provided on presentations and Student Devised Assessments.

Availability

Courses

This module is Core optional for:

- Year 3 of ULFA-C1A6 Undergraduate Biochemistry with Industrial Placement (MBio)

This module is Option list B for:

- UBSA-C700 Undergraduate Biochemistry
 - Year 3 of C700 Biochemistry
 - Year 3 of C700 Biochemistry
- ULFA-C1A2 Undergraduate Biochemistry (MBio)
 - Year 3 of C1A2 Biochemistry
 - Year 3 of C700 Biochemistry
- Year 4 of ULFA-C702 Undergraduate Biochemistry (with Placement Year)
- UBSA-3 Undergraduate Biological Sciences
 - Year 3 of C100 Biological Sciences
 - Year 3 of C100 Biological Sciences
- Year 3 of ULFA-C1A1 Undergraduate Biological Sciences (MBio)
- Year 4 of ULFA-C113 Undergraduate Biological Sciences (with Placement Year)
- Year 3 of ULFA-C1A5 Undergraduate Biological Sciences with Industrial Placement (MBio)
- UBSA-C1B9 Undergraduate Biomedical Science
 - Year 3 of C1B9 Biomedical Science
 - Year 3 of C1B9 Biomedical Science

- Year 3 of C1B9 Biomedical Science
- ULFA-C1A3 Undergraduate Biomedical Science (MBio)
 - Year 3 of C1A3 Biomedical Science
 - Year 3 of C1B9 Biomedical Science
- Year 3 of ULFA-C1A7 Undergraduate Biomedical Science with Industrial Placement (MBio)
- ULFA-CB18 Undergraduate Biomedical Science with Placement Year
 - Year 4 of CB18 Biomedical Science with Placement Year
 - Year 4 of CB18 Biomedical Science with Placement Year
 - Year 4 of CB18 Biomedical Science with Placement Year
- Year 3 of ULFA-B140 Undergraduate Neuroscience (BSc)
- Year 3 of ULFA-B142 Undergraduate Neuroscience (MBio)
- Year 3 of ULFA-B143 Undergraduate Neuroscience (with Industrial Placement) (MBio)