PHL 260

Bioethics and Biotechnology

S2 External 2018

Dept of Philosophy

Contents

General Information

Unit convenor and teaching staff
Unit Convenor, Lecturer, Tutor
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Tutor
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Credit points
3

Prerequisites
(12cp at 100 level or above) or admission to GDipArts

Corequisites

Co-badged status

Unit description
This unit introduces students to a selection of the most pressing ethical questions and concerns raised by current and recent developments in the so-called ‘biotech revolution’, especially in the sphere of genetic technology. The first section of the unit provides an introduction to ethical reasoning, to issues of social justice and to the relationship between social values, scientific enquiry and research ethics in the context of biotechnology. The second section focuses on the ethics of gene technology in the spheres of human medicine and reproduction, including: genetic screening/testing; gene therapies; genetic enhancement; and human reproductive cloning. In the third section we explore the impact of biotechnologies on other aspects of human, non-human animal and environmental welfare including: genetic engineering of plants and animals (GMOs); biofortification of food; bio-prospecting; and commercial exploitation of human genetic material. The unit is an ethics unit, not a science unit, and prior scientific knowledge is not required.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at https://www.mq.edu.au/study/calendar-of-dates

Learning Outcomes

On successful completion of this unit, you will be able to:

The ability to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances;

Possession of a sound understanding of the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments;

The ability to analyse and critically evaluate relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature;

The development and application of skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences;

Development of your ability to construct arguments in support of your own ethical positions and values;

Development of your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

General Assessment Information

NOTE: Students need to complete ALL ASSESSMENT COMPONENTS in this unit. You do not need to have passed each assessment to pass the unit, but it is expected that all assessments are attempted.

General Submission Procedure: Essays must be submitted via TurnItIn at the correct link provided on the Unit iLearn site. Please note that there will be separate links for CBMS807 and PHL260 students. Please ensure that you use the correct link for your assessment!

Extensions: Extensions must be sought via the MQ Special Consideration application procedure, in advance of the due date. Extensions will only be granted for medical or equivalent reasons, supported by documentation (medical certificate or equivalent). Please note that workload in other units, and employment outside of university, will not be accepted as grounds for an extension.

LATE SUBMISSION POLICY: Unless a Special Consideration request has been submitted and approved, the following will apply:

(a) Late penalty – two (2) marks out of 100 will be deducted per day for assignments submitted after the due date;

(b) No assignment will be accepted more than seven (7) days (incl. weekends) after the original submission deadline. (c) No late submissions will be accepted for timed assessments – e.g. online test.

Assessment Tasks

Name	Weighting	Hurdle	Due
Online Discussion Exercise	10%	No	6 August 10am
Online Timed Test	20%	No	27 August
Essay	30%	No	21 Sept OR 9 Nov (11.59pm)
Participation	15%	No	Continuous
Exam	25%	No	Unversity Examination Period

Online Discussion Exercise

Due: **6 August 10am**
Weighting: **10%**

Individual introduction PLUS reflection on film in Lecture 1.

As well as introducing themselves online on the iLearn Discussion Board, students watch a film clip and post an online comment on the film.

Post a message on the iLearn Discussion Board for this Unit, containing the following: (i) Begin by introducing yourself. Include the following information: Name (and nickname or preferred name); Where you are from (locally or internationally); What you are studying at university (subjects, not degree); Why you are studying this unit/what you hope to get out of it.

(ii) Then add a comment about one or two of the issues or questions that you felt were raised by or in the film from Lecture 1.

This task will be assessed according to the following criteria: Evidence of engagement with film; relevance of issue identified in film; clarity of expression. A marking rubric and detailed task outline for this task will be supplied on the iLearn homepage.

On successful completion you will be able to:

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written argumentation.

Online Timed Test

Due: **27 August**
Weighting: **20%**

Case study application of emerging skills.

45min timed online test. The test will be accessible for 24 hours **from 9AM MONDAY 27 AUGUST until 9AM TUESDAY 28 AUGUST.** Within that time you will have **ONLY ONE OPPORTUNITY** to commence and complete the test, within the 45 minutes allowable time. Further information will be provided in class.

This task will be assessed according to the following criteria: demonstration of familiarity with unit content and readings; understanding of core theories to be examined; quality of analysis in application of theories to case study. A marking rubric and detailed task outline for this task will be supplied on the iLearn homepage.

On successful completion you will be able to:

- The ability to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances;
- Possession of a sound understanding of the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments;
- The ability to analyse and critically evaluate relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature;
- The development and application of skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences;
- Development of your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Essay

Due: **21 Sept OR 9 Nov (11.59pm)**
Weighting: **30%**

Written essay, 1500 words MAXIMUM. (**NB: Choose ONLY ONE essay option.** You can select whether to do your essay on a topic from the first half of the unit (Sept deadline) or from the second half (Nov deadline).

This task will be assessed by the following criteria: Mechanics (length, structure, written expression); Comprehension; Argument (critical analysis and purpose); and Sources (relevance and proper citation practices). A marking rubric and detailed task outline for this task will be

supplied on the iLearn homepage.

On successful completion you will be able to:

- Possession of a sound understanding of the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments;
- The ability to analyse and critically evaluate relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature;
- The development and application of skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences;
- Development of your ability to construct arguments in support of your own ethical positions and values;
- Development of your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Participation

Due: **Continuous**
Weighting: **15%**

Internal: You must **participate in 70% (7/10) of the tutorials** and contribute to the discussions, by both asking and answering questions and engaging in tutorial activities. Both ***frequency of attendance*** & ***quality of contribution*** (in lectures and tutorials) will be considered.

External: You must listen to the online Echo 360 lectures every week, and post a discussion/ response to 70% (7/10) of the weekly tutorial topics/questions posted on the External Students Discussion Board on iLearn.

This task will be assessed by the following criteria: Engagement (attendance/participation frequency meets requirements); Quality of contributions; Demonstration of familiarity with topic and readings. A marking rubric and detailed task outline for this task will be supplied on the iLearn homepage.

On successful completion you will be able to:

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- The development and application of skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences;
- Development of your ability to construct arguments in support of your own ethical

positions and values;
- Development of your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Exam

Due: **Unversity Examination Period**
Weighting: **25%**

Short exam (1.5 hours) during University Examination period. **Compulsory for Internal AND External students.**

This task will be assessed according to the following criteria: Demonstration of familiarity with unit content and readings. A marking rubric and detailed task outline for this task will be supplied on the iLearn homepage.

On successful completion you will be able to:

- The ability to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances;
- Possession of a sound understanding of the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments;
- The ability to analyse and critically evaluate relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature;
- The development and application of skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences;
- Development of your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Delivery and Resources

There will be one 2-hour lecture per week, and for internal students, one 1-hour tutorial per week.

Please check Timetables for confirmation of days/times and venues.

All materials, including lecture recordings, will be available on the unit ilearn site.

REQUIRED READING: All required reading in this unit can be found in the *PHL260/CBMS807 Bioethics and Biotechnology* unit reader, available via online order (Print On Demand). Please use the link on the unit iLearn site to order your copy. Please do not delay with ordering your copy, as there can be delays and there is a test in Week 5 so you will need to have purchased your own copy of the Reader well in advance of that.

RECOMMENDED READING: A list of *Additional Readings*, for use for your essays, exam study and as supplementary reading throughout the semester, will be available on the unit iLearn site under "Additional Reading". Asterisked sources on that list are available on Reserve in the Library.

Unit Schedule

SCHEDULE OF CLASSES AND REQUIRED READINGS

Note: The following are REQUIRED readings for this unit. All readings listed below are in the Unit Reader. Where more than one reading is listed priority is to be given to reading(s) marked '', but it is expected that all readings listed here will have been read by the end of the unit.*

SECTION I: (WEEKS 1–5) FRAMEWORKS FOR ETHICAL REASONING

TOPIC 1 WEEK 1 (July 30): Introduction/overview of course. Introducing the process and principles of ethical reasoning.

Reading:

*Stephen Cohen: 'What is Ethics?

*James Rachels: 'What is Morality?'

***NOTE**: NO TUTORIALS in Week 1*

TOPIC 2 WEEK 2 (Aug 6): Overview of key moral theories and their applications to issues in biotechnology.

Reading:

* Damian Grace and Stephen Cohen: Excerpt from *Business Ethics: Problems and Cases*.

* Anne Thomson: 'Moral Principles and Moral Theories'.

NOTE: Online Discussion Exercise due: by 10am today.

TOPIC 3 WEEK 3 (Aug 13): The role of ethics and social values in science

Reading:

* E. Emanuel *et al:* 'What Makes Clinical Research Ethical?' *Journal of the American Medical Association (JAMA),* Vol. 283, No. 2 (May24/31: 2701-2711.

* Glass: 'The Ethical Basis of Science.'

TOPIC 4 WEEK 4 (Aug 20): The moral legacy of eugenics and key principles of justice in

biotechnology.

Reading:

* Buchanan et al: Excerpt from 'Eugenics and Its Shadow'

* Wikler and Barondess: 'Bioethics and Anti-Bioethics in Light of Nazi Medicine: What Must We Remember?'

Buchanan et al: Excerpt from 'Genes, Justice and Human Nature.'

WEEK 5 (Aug 27): TIMED ONLINE TEST: Must be completed within 24 hours from 9AM MONDAY 27 AUGUST until 9AM TUESDAY 28 AUGUST.

NOTE: *NO LECTURE OR TUTORIALS this week*

SECTION II (WEEKS 6–11): GENETIC TECHNOLOGY IN THE SPHERE OF HUMAN HEALTH AND REPRODUCTION

TOPIC 5 WEEK 6 (Sept 3): Ethical issues posed by genetic screening, testing and diagnosis

Reading:

* Clarke: 'Genetic Screening and Counselling.'

* Steinbock: 'Preimplantation Genetic Diagnosis and Embryo Selection.'

TOPIC 6 WEEK 7 (Sept 10): The ethics of somatic and germline genetic therapy

Reading:

* Chadwick: 'Gene Therapy.'

* Elias and Annas: 'Somatic and Germline Gene Therapy.'

Warren: 'The Moral Status of the Gene.'

MONDAY 17 SEPT – MONDAY 2 OCT (inclusive): MID SEMESTER BREAK

*** ESSAY OPTION 1 DEADLINE: 11.59pm Friday 21 September**

TOPIC 7 WEEK 9 (Oct 8): Guest lecture: Professor Wendy Rogers – The moral acceptability of genetic enhancement and the therapy/enhancement distinction

Reading:

* Peter Singer: 'Parental Choice and Human Improvement'.

* Ruud Ter Meulen *et al:* 'Ethical Issues of Enhancement Technologies'.

David Resnik and Daniel B. Vorhaus: 'Genetic Modification and Genetic Determinism'.

TOPIC 8 WEEK 10 (Oct 15): Stem cell research and the moral status of human embryonic stem cells.

Reading:

* Harris: 'Stem Cells, Sex and Procreation'

TOPIC 9 WEEK 11 (Oct 22): Would it be morally permissible to clone human beings?

Reading:

* Brock: 'Cloning Human Beings: An Assessment of the Ethical Issues Pro and Con.'

Holm: 'A Life in the Shadow: One Reason Why We Should Not Clone Human Beings.'

Kass: 'The Wisdom of Repugnance.'

SECTION III (WEEKS 12-13): THE SOCIAL AND ENVIRONMENTAL IMPLICATIONS OF BIOTECHNOLOGY

TOPIC 10 WEEK 12 (Oct 29): Ethical issues posed by commercialisation of human genetic material

Reading:

* Chadwick and Hedgecoe: 'Commercial Exploitation of the Human Genome'

Munzer: 'Property, Patents and Genetic Material'

TOPIC 11 WEEK 13 (Nov 5): Ethical and environmental issues in food biotechnology.

Reading:

*Thompson: 'Ethical Issues in Food Biotechnology'

Altieri and Rosset: 'Ten Reasons Why Biotechnology Will Not Ensure Food Security, Protect the Environment and Reduce Poverty in the Developing World.'

McGloughlin: 'Ten Reasons Why Biotechnology Will Be Important to the Developing World.'
Wills: 'Disrupting Evolution: Biotechnology's Real Result.'

*** ESSAY OPTION 2 DEADLINE: 11.59pm Friday 9 November**

SEMESTER ENDS – EXAMINATIONS BEGIN

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- Academic Appeals Policy
- Academic Integrity Policy
- Academic Progression Policy
- Assessment Policy
- Fitness to Practice Procedure
- Grade Appeal Policy
- Complaint Management Procedure for Students and Members of the Public
- Special Consideration Policy *(**Note:** The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)*

Undergraduate students seeking more policy resources can visit the Student Policy Gateway (https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/study/getting-started/student-conduct

Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit ask.mq.edu.au.

Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- Workshops
- StudyWise
- Academic Integrity Module for Students
- Ask a Learning Adviser

Student Services and Support

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.

Graduate Capabilities

Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

Learning outcomes

- The development and application of skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences;
- Development of your ability to construct arguments in support of your own ethical positions and values;
- Development of your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Assessment tasks

- Essay
- Participation

Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

Learning outcomes

- The ability to analyse and critically evaluate relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature;
- The development and application of skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences;
- Development of your ability to construct arguments in support of your own ethical positions and values;
- Development of your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Assessment tasks

- Essay
- Participation
- Exam

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- The ability to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances;
- Possession of a sound understanding of the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments;
- The ability to analyse and critically evaluate relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature;
- The development and application of skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences;
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- Development of your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Assessment tasks

- Online Timed Test
- Essay
- Exam

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcomes

- The ability to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances;
- Possession of a sound understanding of the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments;
- The ability to analyse and critically evaluate relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature;

- The development and application of skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences;
- Development of your ability to construct arguments in support of your own ethical positions and values;
- Development of your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Assessment tasks

- Online Discussion Exercise
- Online Timed Test
- Essay
- Participation
- Exam

Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcomes

- The ability to analyse and critically evaluate relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature;
- The development and application of skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences;
- Development of your ability to construct arguments in support of your own ethical positions and values;
- Development of your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Assessment task

- Essay

Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

Learning outcomes

- Development of your ability to construct arguments in support of your own ethical positions and values;
- Development of your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Assessment tasks

- Online Discussion Exercise
- Online Timed Test
- Essay
- Participation
- Exam

Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

Learning outcomes

- The ability to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances;
- Possession of a sound understanding of the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments;
- The ability to analyse and critically evaluate relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature;

- The development and application of skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences;
- Development of your ability to construct arguments in support of your own ethical positions and values;
- Development of your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Assessment tasks

- Online Discussion Exercise
- Online Timed Test
- Essay
- Participation
- Exam

Socially and Environmentally Active and Responsible

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

Learning outcomes

- The ability to analyse and critically evaluate relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature;
- The development and application of skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences;

Assessment task

- Participation