CBMS807

Bioethics and Biotechnology

S2 Day 2015

Dept of Chemistry & Biomolecular Sciences

Contents

General Information

Unit convenor and teaching staff
Unit Convenor in 2015, Lecturer, Tutor
Elizabeth Schier
elizabeth.schier@mq.edu.au

Unit Convenor - On Leave in 2015
Mianna Lotz
mianna.lotz@mq.edu.au

Credit points
4

Prerequisites
Admission to MBiotech or MBiotechMCom or MBioBus

Corequisites

Co-badged status
PHL260 Bioethics and Biotechnology

Unit description
This unit introduces students to ethical issues raised by current developments in biotechnology, especially in the sphere of genetic technology. Topics include the ethics of genetic technology in human medicine and reproduction, including genetic screening/testing; genetic therapies (somatic and germ-cell); genetic enhancement; and cloning; and the impact of biotechnology on other aspects of human, animal and environmental well-being. Students develop a firm grounding in the ethical principles, theories and frameworks with which to analyse a variety of biotechnological applications, in addition to the requirements of scientific and academic conduct and the carrying out of responsible research.

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:

Being able to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances

Having an ability to understand the central ethical concepts, principles and theories that

arise in debates concerning the applications of biotechnological developments
Gaining skills in analysing and critically evaluating relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature
Being able to apply the skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences
Developing your ability to construct arguments in support of your own ethical positions and values
Enhancing your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Assessment Tasks

Name	Weighting	Due
Online post	5%	3 Aug, 4pm
In-class test	15%	10 Aug
Presentation (in pairs)	25%	Scheduled with Convenor
Essay	25%	EITHER: 11 Sept OR 6 Nov (4pm)
Participation	10%	Continuous
Exam	20%	University examinations period

Online post

Due: **3 Aug, 4pm**
Weighting: **5%**

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.

On successful completion you will be able to:

- Being able to demonstrate a sound understanding of the major ethical issues posed by

specific biotechnological advances
- Having an ability to understand the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments
- Gaining skills in analysing and critically evaluating relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature
- Being able to apply the skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences
- Enhancing your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

In-class test

Due: **10 Aug**
Weighting: **15%**

45-minute online test: case study application of emerging skills.

The test is designed to assess your ability to identify ethical principles and apply an ethical style of reasoning and argument to a case study. You will be advised separately on how to access the time-limited online test. It will be open for 24 hours. You will have **only one opportunity** to commence and complete the test within 45 minutes.

On successful completion you will be able to:
- Being able to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances
- Having an ability to understand the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments
- Gaining skills in analysing and critically evaluating relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature
- Being able to apply the skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences
- Enhancing your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Presentation (in pairs)

Due: **Scheduled with Convenor**
Weighting: **25%**

10 minute in-class presentation in pairs, with a written version (1000 words max) and Powerpoint

slides, to be submitted electronically to ilearn site, by 5pm on day of presentation.

This assessment task is compulsory for CBMS807 students. Students must present a 10 minute presentation to the class, with a presentation report and power point slides to be submitted on the day of presentation. Students will present in pairs, during the final 30 mins of the relevant lecture. Each person must present half of the presentation to the class. Included with the written presentation report must be a signed Authorship Statement (available on the unit ilearn) which clearly explains the division of labour and responsibility of each student. *Please note: Failure to submit the signed Authorship Statement will result in a mark of zero % for the presentation, for both students.*

The presentation must consist of a **critical discussion of one of the class readings,** and must take place in the week for which that reading is designated. Students are expected not merely to summarise the views presented in the reading, but to engage critically with them. Presentation Reports must be fully written and submitted on the day of the class presentation. Further guidelines for presentations will be supplied early in the semester. You will need to consult with the unit convenor in order to have your presentation option and partner confirmed. A maximum of TWO presentations will be held per lecture. **Topic requests MUST be submitted by email to the unit convenor by Lecture 3**. Topics will be allocated on a first-come-first-served basis. A schedule of class presentations will be provided to all students after Lecture 3.

Important note: Once your class presentation request has been confirmed, you are committed to giving the presentation, and can only opt out of it under special circumstances and with the approval of Dr Lotz. **Students who fail to give a committed-to presentation, without having re-negotiated with the unit convenor, will forfeit that % of their overall grade.**

On successful completion you will be able to:

- Being able to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances
- Having an ability to understand the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments
- Gaining skills in analysing and critically evaluating relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature
- Being able to apply the skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences
- Developing your ability to construct arguments in support of your own ethical positions and values
- Enhancing your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Essay

Due: **EITHER: 11 Sept OR 6 Nov (4pm)**
Weighting: **25%**

The essay task is designed to test your ability to engage with an ethical issue in depth. Essay writing tests your ability to express, analyse and organise key ideas clearly and systematically, and to develop an argument in a sustained way. All students will be required to submit one essay (word length: 2000 words.) Essay topics will be distributed at least one month before each due date, and will be available on the unit iLearn. You may choose whether to do the first or the second essay (ie Sept 19 or Nov 7 deadline), but you may only select from the relevant question sets (ie first batch of questions for Sept deadline, second batch of questions for Nov deadline).

On successful completion you will be able to:

- Being able to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances
- Having an ability to understand the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments
- Gaining skills in analysing and critically evaluating relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature
- Being able to apply the skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences
- Developing your ability to construct arguments in support of your own ethical positions and values
- Enhancing your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Participation

Due: **Continuous**
Weighting: **10%**

Students will be assessed on both frequency of class attendance and quality/frequency of contribution to discussion (lectures, tutorials and online).

On successful completion you will be able to:

- Being able to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances
- Having an ability to understand the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments

- Gaining skills in analysing and critically evaluating relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature
- Being able to apply the skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences
- Developing your ability to construct arguments in support of your own ethical positions and values
- Enhancing your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Exam

Due: **University examinations period**
Weighting: **20%**

Short compulsory closed book examination (1.5 hours) will be held in the examination period at the end of semester and is deigned to test your general familiarity with the main ideas and issues covered in the lectures, tutorials and readings. It will consist of closed-book, mini-essay questions.

On successful completion you will be able to:

- Being able to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances
- Having an ability to understand the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments
- Being able to apply the skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences
- Developing your ability to construct arguments in support of your own ethical positions and values
- Enhancing your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Delivery and Resources

All assessment tasks in this unit are compulsory. Students are required to complete ALL assessment components in order to pass this unit.

While the contact hours are fewer in this unit than for other CBMS units, students are expected to complete 3.5 hours of compulsory reading and private study per week in this unit.

REQUIRED READING The required reading for this unit is contained in the course reader:

PHIL260/CBMS807 Bioethics and Biotechnology, available at the Co-op Bookstore on campus.

The readings contained in the Reader are compulsory reading for this unit. You will be expected to keep up with the readings throughout semester, and tutorial discussion will presume prior familiarity with the relevant readings.

RECOMMENDED READING An additional list of Supplementary Readings will be provided on the ilearn website for this unit. Students are expected to draw on one or two additional readings for the essay component of assessment in this unit.

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: (LECTURES 1–4) FRAMEWORKS FOR ETHICAL REASONING

LECTURE 1 (July 27): 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*

LECTURE 2 (Aug 3): 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 4pm today.

LECTURE 3 (Aug 10): IN-CLASS and ONLINE TEST, 12-1pm.

***NOTE:** NO TUTORIALS this week.*

LECTURE 4 (Aug 17): 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.'

LECTURE 5 (Aug 24): 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.'

SECTION II (LECTURES 5–9): GENETIC TECHNOLOGY IN THE SPHERE OF HUMAN HEALTH AND REPRODUCTION

LECTURE 6 (Aug 31): Ethical issues posed by genetic screening, testing and diagnosis

Reading:

* Clarke: 'Genetic Screening and Counselling.'

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

LECTURE 7 (Sept 7): 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.'

*** ESSAY 1 DEADLINE: 4pm Friday 11 September**

MONDAY 14 SEPT – FRIDAY 25 SEPT: MID SEMESTER BREAK

LECTURE 8 (Sept 28): Stem cell research and the moral status of human embryonic stem cells.

Reading:

* Harris: 'Stem Cells, Sex and Procreation'

NB: PUBLIC HOLIDAY: October 5

LECTURE 9 (Oct 12): 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'.

LECTURE 10 (Oct 19): 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 (LECTURES 11–12): THE SOCIAL AND ENVIRONMENTAL IMPLICATIONS OF BIOTECHNOLOGY

LECTURE 11 (Oct 26): 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'

LECTURE 12 (Nov 2): 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 2 DEADLINE: 4pm Friday 6 November**

SEMESTER ENDS – EXAMINATIONS BEGIN

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central. Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

Assessment Policy http://mq.edu.au/policy/docs/assessment/policy.html

Grading Policy http://mq.edu.au/policy/docs/grading/policy.html

Grade Appeal Policy http://mq.edu.au/policy/docs/gradeappeal/policy.html

Grievance Management Policy http://mq.edu.au/policy/docs/grievance_management/policy.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the Learning and Teaching Category of 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/support/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://informatics.mq.edu.au/help/.

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

Graduate Capabilities

PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

Learning outcomes

- Being able to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances
- Having an ability to understand the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments
- Gaining skills in analysing and critically evaluating relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature
- Being able to apply the skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other

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

Assessment tasks

- Online post
- In-class test
- Presentation (in pairs)
- Essay
- Participation
- Exam

PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

Learning outcomes

- Being able to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances
- Having an ability to understand the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments
- Gaining skills in analysing and critically evaluating relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature
- Being able to apply the skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences
- Developing your ability to construct arguments in support of your own ethical positions and values

Assessment tasks

- In-class test
- Presentation (in pairs)
- Essay
- Participation

- Exam

PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

Learning outcomes

- Being able to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances
- Having an ability to understand the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments
- Gaining skills in analysing and critically evaluating relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature
- Being able to apply the skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences
- Developing your ability to construct arguments in support of your own ethical positions and values

Assessment tasks

- Online post
- In-class test
- Presentation (in pairs)
- Essay
- Participation
- Exam

PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

Learning outcomes

- Gaining skills in analysing and critically evaluating relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature
- Being able to apply the skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences

Assessment tasks

- Presentation (in pairs)
- Essay
- Exam

PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

Learning outcomes

- Being able to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances
- Gaining skills in analysing and critically evaluating relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature
- Developing your ability to construct arguments in support of your own ethical positions and values
- Enhancing your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Assessment tasks

- Online post
- In-class test
- Presentation (in pairs)
- Essay
- Participation
- Exam

PG - Engaged and Responsible, Active and Ethical Citizens

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

Learning outcomes

- Being able to demonstrate a sound understanding of the major ethical issues posed by specific biotechnological advances
- Having an ability to understand the central ethical concepts, principles and theories that arise in debates concerning the applications of biotechnological developments
- Gaining skills in analysing and critically evaluating relevant case studies and scientific contexts, as well as theories and arguments in the relevant literature
- Being able to apply the skills and concepts involved in ethical reasoning and argumentation to past, current and future controversies in biotechnological and other sciences
- Developing your ability to construct arguments in support of your own ethical positions and values
- Enhancing your skills in clarity of thought, clarity of oral and written expression, and written argumentation.

Assessment tasks

- Online post
- Presentation (in pairs)
- Participation

Changes from Previous Offering

Students will present their Class Presentations in pairs, with a requirement to complete an Authorship Statement to be submitted with the Presentation Report. Presentations will be held in the final 30 minutes of lecture time, and will be attended only by CBMS students.