COURSE STRUCTURE

This unit is taught online where video recorded i-lectures, computer-generated practicals, discussion forums and assessments are accessible only via blackboard. Hence, this unit is available in external online mode ONLY.

For access to online content, presuming you are enrolled in the unit, go to:
https://learn.mq.edu.au/
Your username & password for online learning @ MQ
Click on the Biol346/806 link

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Textbook

Bioscience Ethics by Irina Pollard (Cambridge University Press, 2009) is the set text and can be bought from the Macquarie University bookshop. You are, of course, additionally expected to make liberal use of our and other institutional libraries, web sites, media outlets and wherever else you can find stimulation and factual material. Especially useful is the living UNESCO/IUBS/EUBIOS Dictionary of Biology for Bioethics and other material freely accessible from the bioscience-bioethics education portal at http://www.bioscience-bioethics.org/. Reproduction is a dynamic, exciting and rapidly evolving discipline whose dimensions are reflected in the emerging frontiers of science and ethics that enhance biological understanding and promote adaptive maturity in harmony with changing technology.
UNIT DESCRIPTION

Background

Technologies, all by-products of science, have redefined how we live, work, fight, relax and communicate with one another. When a scientific discovery in any discipline is applied its focus shifts incorporating functions such as value judgment, ideology and political force. Therefore, there is a need to find new ways that can effectively create a scientifically informed and ethically involved community in tune with present-day reality. Without free and accurate access to scientific, medical and technological expertise, stable social reform would be compromised. At its roots, the major responsibility of the modern ethicist is to integrate current scientific understanding of practical and cultural significance with traditional wisdom. By contrast, the responsibility of the scientist is to ensure that scientific information is not omitted or corrupted in the process. Bioscience ethics is the accepted interface in this process of integration.

Bioscience ethics’ major elements are increased understanding of biological systems, responsible use of technology, and reassessment of ethnocentric debate more in tune with new eco-scientific insights. Accordingly, this unit has been built around modules that initially provide students a means to reflect upon the traditional ethical dimensions of medicine, health and science and then move to social, community and environmental perspectives for evaluation. There are two overarching themes: a) to increase awareness of human reproduction by providing an integrated overview of current theories and principles of human reproductive function, and b) to explore the frontiers of science and technology as they relate to bioscience ethics. Basic topics include sexual differentiation, growth, maturation, the treatment and causes of infertility, parental behaviour, neonate biology and aging. The effects of procreational biology on the foundation of human social structure are also examined. Issues as they relate to health include the biology of stress, diseases of adaptation, principles of toxicology and teratology, sustainable living and the environment.

Bioscience-BioEthics International

An agreement between the United Nations Educational Scientific and Cultural Organization (UNESCO) and Macquarie University has been signed which incorporates bioscience ethics in its Bioethics Core Curriculum, which is currently in its testing phase. The Bioethics Core Curriculum sets out to introduce the bioethical principles of the Universal Declaration on Bioethics and Human Rights to university students. BIOL346 does not impose a particular model or specific view of bioethics, but articulates ethics principles as set out in the Declaration from the following perspectives:

- To promote a better understanding of the ethical implications of scientific and technological developments.

- To take into account that human beings are an integral part of the biosphere with an important role in protecting one another and other forms of life.

- To recognize that health does not depend solely on scientific and technological research developments but also includes biological, psychosocial, cultural and spiritual dimensions.

- To reflect on the responsibilities of the present generation towards future generations.
SCHEDULE: MODULES AND LECTURE SEQUENCE

The core modules are built around learning objectives as developed by means of specific lectures. The focus on objectives not only demarcates the lecture contents within each module but also serves as the basis of the practicals, appraisal and assessments. Students are expected to engage in additional learning beyond the core modules.

Module 1: Introduction to Bioscience Ethics & Reproduction

General Objectives

- Create a better understanding of the major ethical issues raised by science and technology.
- Trace the evolution of ethical consciousness.

Lecture 1.1 ‘Bioscience Ethics and Reproduction’ (Student Text – chapter 1)

  a) Relationships among the interrelated fields of ethics, bioethics and bioscience ethics are explored.
  b) Role of ethics in science and technology using practical applications of reproductive functions in medicine.

Lecture 1.2 ‘Human Origins, Natural Selection and the Evolution of Ethics’ (Student Text – chapter 1)

  a) Human prehistory and the evolution of ethical consciousness – experimental evidence.
  b) The triune brain, neuroscience and neuroethics.

Expected Learning Outcomes

- Students should be able to relate how ethics impacts on modern science and its applications.

Discussion focus: “To incorporate current scientific insights of practical significance within a cultural context is an aim of bioethics. Bioscience ethics is the interface ensuring that such scientific information is not omitted or corrupted in this process. In your opinion, is a good working knowledge of biological systems essential before the philosophy of bioethics can adequately be addressed? Justify your point of view.”

Module 2: Human Reproduction and Development

General Objectives

- Provide an overview of human reproduction.
- Experience a realistic simulation of routine medical assisted treatments available to couples seeking fertility assistance at an IVF clinic.
- Trace the biology of sex determination, brain sex and sexuality.
Lecture 2.1 ‘Fertilization and the Initiation of Development’ (Student Text – chap 3 & browse by way of index)

a) Lifestyle, fertility and preconceptional care.
b) Oogenesis, sperm maturation and fertilization.
c) Early mammalian embryogenesis, imprinting and epigenetic mechanisms.

Lecture 2.2 ‘Development and Placentation: Maternal-Fetal Communication Systems’ (Student Text – chapter 3)

a) The biology of bonding and the establishment of pregnancy.
b) The placenta as maternal-fetal interface.
c) Maternal physiology during gestation and fetal survival strategies.
d) Epigenetic gene regulation heritable down the generations.

Lecture 2.3 ‘Patterns of Human Growth and Maturation’ (Student Text – chapter 3)

a) Life cycle as defined by biological characteristics.
b) Embryonic-fetal periods and embryo staging.
c) Critical periods during development.
d) Intrauterine growth restriction (IUGR) and preterm births.
e) Factors contributing to IUGR.

Lecture 2.4 ‘Sex Determination, Brain Sex and Postnatal Personality Development (Student Text – chapter 2).

a) Foundation of adult sexuality and fetal life.
b) Normal sexual development.
c) Hidden genders – intersex conditions, androgen insensitivity syndrome.
d) Brain sex and behaviour – a continuum of sexual orientations.

Expected Learning Outcomes

- Students should have gained knowledge into the science of toxicology with special reference to reproduction.
- Students should have gained an understanding of the biological basis of sex determination.

Discussion focus: “Do changing views about genes, teratogens and extragenomic modes of inheritance have any relevance to the study of bioethics? Rationalize your point of view.”

Module 3: Gender, Sexuality and Social Aspects

General Objectives

- Trace the biological basis and evolution of the socialization of human sexuality.
Lecture 3.1 Guest Lecture 1 ‘Transgendered: A Personal Perspective’ by Katherine Cummings

a) My story: the life and loves of an XY woman.
b) Introducing a wide-ranging transgendered ‘cover’ stories featured in Polare – the magazine of the New South Wales Gender Centre.

Lecture 3.2 Guest Lecture 2 ‘Gender Diversity: Corresponding States and Challenges’ by Katherine Cummings and Gina Wilson

a) Oii – Organization Intersex International.
b) Political activism – speaking up for Intersex Rights and acceptance of sexual diversity.

Lecture 3.3 ‘Human Sexuality: Behaviour and Pheromones’ (Student Text – browse by way of index)

a) The evolution of sex and sexual attraction.
b) Types of communication – the male, the female.
c) Pheromones and human reproduction – kinship laws and incest.
d) Dopamine and the chemistry of desire / oxytocin the chemistry of attachment.

Lecture 3.4 ‘Sociobiology – the Study of the Biological Basis of Social Behavior’ (Student Text – browse by way of index)

a) Fitness enhancing strategies of reproduction – sperm competition.
b) The art of deception – paternity DNA testing.
c) Sexual triggers, body image and body reality.
d) Body dismorphic disorder and body mutilation.

Expected Learning Outcomes

- Students should be able to view sex and gender determination in a number of ways, whether as biology, lifestyle, accomplishment and/or ways of being.

Discussion Focus: “To what extent is it regressive to follow existing mores, rather than facilitating social change toward a more tolerant and open society which would ultimately benefit all? Discuss ethical approaches that should successfully challenge societal prejudices and discrimination against singles, gays and others living outside the social norm.”

Module 4: Considerations of Effective and Ethical Reproduction

General Objectives

- Create a better understanding of the major biological and ethical issues raised by substance abuse and parenthood.
- Study the physiochemical characteristics of caffeine and its biologically reactive metabolites.
- Describe the neuro-endocrinology of homeostatic systems and their biological function.
- Relate the maintenance of health and wellbeing across the generations.

Lecture 4.1 ‘Principles of Toxicology and Teratology’ (Student Text – chapters 3 & 4)
a) Drug characteristics.
b) Chemical teratogenesis and the etiology of malformations.
c) Warfare and toxic chemical legacies across the generations.
d) Low birth weight – demographic characteristics and medical risks.

Lecture 4.2 ‘Substance Abuse and Parenthood’ (Student Text – chapter 4)

a) Infertility and preventable drug-induced disability in children.
b) Male and female mediated adverse reproductive outcome from the use of ‘recreational drugs’ and narcotics.
c) Drug teratogenicity, genetic predisposition, fetal programming and adult disease.
d) The biology of addiction.
e) Ecogenetics and socio-political responsibility.

Lecture 4.3 ‘Fertility Awareness and the Aging Gamete: An Exploration of Sexual Behaviour and Congenital Anomalies in Children’ (Student Text – chapter 5)

a) Adolescent sexuality.
b) Causes of human congenital anomalies at birth.
c) The ovulatory method of birth control – biological and behavioural perspectives.
d) The gametopathy hypothesis – aging sperm and eggs.
e) The right of freedom from excess fertility.

Lecture 4.4 ‘Parental Behaviour and the Neonate’ (Student Text – chapter 6)

a) Early developmental patterns.
b) Physiological adaptation to extrauterine life.
c) Adaptation to motherhood – postnatal depression.
d) Parental abuse and the physiology of the child – unwanted birth and crime.
e) Attainment of maturity – physical and emotional, posttraumatic stress disorder (PTSD).
f) Socio-ethical implications.

Lecture 4.5 ‘Stress and the General Theory of Adaptation in Four Parts’ (Student Text – chapter 7, brows by way of index)

Part 1: The Biology of Stress
a) On the balance of sickness and health – the general adaptation syndrome (GAS).

Part 2: On the Biology of Happiness and Depression.
a) Reactive homeostasis – neuro-endocrine control.
b) Link between drug abuse and depression – biological findings – medical consequences.
c) The emotional (limbic) brain’s functional compartments and communication systems.
d) Stress and addiction from the transgenerational perspective – fetal programming.
e) In pursuit of happiness.

Part 3: Students writing on what happiness means to them personally.
a) Analysis of questionnaires.
b) The biological determinants of happiness.
c) fMRI of brain’s optimism centre.

Part 4: High-Tech Advances in Neuroscience and Neuroethics.
a) The precautionary principle and bioscience ethics.  
b) Neuroimaging of the human brain.  
c) Manipulating thoughts, consciousness and memory.  
d) Medicating memory – the ethics.  
e) Ethics – our evolutionary heritage.  

**Expected Learning Outcomes**

- Student to gain understanding of the genetic / epigenetic influences active throughout life.  
- Students to gain awareness concerning neuro-endocrinology and homeostatic systems.  
- Students to gain increased empowerment over their own health and wellbeing and that of their children.

Discussion Focus: “Discuss whether you agree that persons with authority but lacking biological knowledge should be entitled to enunciate which methods of contraception are natural and which are not.”

**Module 5: Sustainable Ethics**

**General Objectives**

- Challenge human-dominated ecosystems.  
- Review population growth, economic activity and warfare.  
- Provide an integrated overview of what can be seen as ‘ethical economics’ – or an argument for generosity based on self interest.

**Lecture 5.1 ‘Social Discrimination and Health Disparity Across Generations: Are We Sufficiently Informed?** (Student Text – chapter 7, brows by way of index).

a) On maintaining health and wellbeing.  
b) Lifestyle diseased within the socio-biological context.  
c) Indigenous health: determinants and disease patterns.  
d) Challenging social discrimination and health disparity in contemporary Australia.  
f) An ecological model of care.

**Lecture 5.2 ‘Population Growth and Economic Dynamics in Two Parts’** (Student Text – chapter 12, brows by way of index).

Part 1: Population Growth

a) Population growth and economic dynamics.  
b) What is a sustainable population?  
c) Population clocks.

Part 2: Contraception or the Artificial Control of Fertility

a) Historical perspectives.  
b) Modern approaches to fertility regulation – mechanisms of action, risk factors.  
c) Contraceptives for males.
Lecture 5.3 ‘Human Dominated Ecosystems: Re-Evaluating Environmental Priorities’ (Student Text – chapters 12 & 13)

a) Environmental concerns – global, regional, local.
b) The link between our homeostatic responses and population density.
c) The importance of genetic diversity and environmental adaptability.
d) The phenomenon of extinction and conservation strategies.
f) Multiple-entry bookkeeping – stewardship of Earth.

Lecture 5.4 ‘Sustainable Peace for a Sustainable Future’ (Student Text – chapters 14 & 15)

a) Modern warfare – fitness enhancement or losing evolutionary strategy?
b) The triune brain in evolution.
c) Developmental programming or the ‘fetal origins’ hypothesis and violence across the generations – self-sustaining characteristics of the ecology of violence.
d) Sustainable peace initiatives.
e) Cooperative symbiosis.

Expected Learning Outcomes

- Students to gain an increased appreciation that once the members of a species have attained a sufficient degree of individuation, they become participating partners within ecosystems where diversity, not unity, is the basis of health.

Discussion Focus: “The decades since the signing of ‘The Universal Declaration of Human Rights’ have been characterized by war, waged primarily by the very states that were instrumental in making The Declaration in 1948. What in your opinion is the use of the Declaration to those who cannot read it?”

Module 6: Ethics in Society

General Objectives

- Provide an integrated overview of what can be seen as ‘ethical economics’ – or an argument for generosity based on self interest.

Lecture 6.1 Guest Lecture 3 ‘Policy Papers: The Politics and the Ethics by Jenny Burchmore’

a) Policy “basics.”
b) Ethical dimensions of policy development in the public sector.
c) Political dimensions of policy development in the public sector.
d) Using case studies in fisheries and water management policy.

Lecture 6.2 Guest Lecture 4 ‘Sustainability Indicators by Morgan Pollard in Three Parts’

Part 1: Global Limits
a) Global carrying capacity, survival and wellbeing.
b) Ecological footprint.
c) The basics of bioethics.

Part 2: Ecological Economics

a) Basic economic model of supply and demand.
b) Opportunity cost.
c) UN Millennium Development Goals.
d) Ecological economics.

Part 3: Sustainability Development

a) Weak sustainability / strong sustainability / critical natural value.
b) PISA model for sustainable management.
c) Environmental indexes.

Lecture 6.3 Guest Lecture 5 ‘Ethics of Scientific Research by A/Prof Roger Hiller’

a) Academic science, industrial science, military science.
b) Fraud and scientific misconduct.
c) Plagiarism.
d) Rating of scientific journals.
e) Ethics codes – guidelines, statements and declarations.

Expected Learning Outcomes

- Students to gain an increased appreciation that once the members of a species have attained a sufficient degree of individuation, they become participating partners within ecosystems where diversity, not unity, is the basis of health.

Discussion Focus: “Health and ill health are deeply dependent on the conditions under which we live and the ways in which we behave. How may bioscience ethics assist in deciding the kinds of societies we want to live in and how to achieve these goals?”

Final Exam

Final examination ‘paper’ will be posted on web site to be returned, either electronic or hard copy version to the Centre for Open Education (COE) one week later. The exam stipulates two essay questions out of a choice of three each with a word limit of 1,000 (bibliography and acknowledgement as long as necessary). The questions require a good working knowledge of the Unit’s content, and the ability to evaluate collected data within innovative contextual perspectives (40%).

PRACTICALS, PRACTICAL ASSESSMENTS AND DISCUSSION BOARD

The unit aims to inform and to challenge. To this end, you are provided with the opportunity to further investigate specific interests outside the mainstream topics of the course, or to explore more deeply these topics by means of a theme topic of your choice (see ‘Student Theme Topic: an interpretational
study’). In addition, the assigned open-ended participation in discussion is dedicated to exploring recently published research, thought-provoking current topics from the media, or any other topic relevant to the designated module and its associated disciplines. Please note: the ‘discussion focus’ (taken from the student text) ought to motivate the web’s dialogue beyond the module where students are also encouraged to bring in original ideas that can form a new core for discussion.

Students are encouraged to progress at their own pace but are restricted by date for the assessments.

Computer generated practicals are designed around a variety of sub-disciplines modified from research projects in order to provide some knowledge about the various practical skills currently used in reproductive biology and bioscience ethics. These include:

**Practical 1: Gametes, Early Development and Assisted Reproduction.**

**Prerequisites:**

1. Module 2.
2. DVD 1: Lifestyle, Fertility and the Assisted Reproductive Technologies
   - [YouTube Link](http://www.youtube.com/watch?v=PE69WMmw8nU)
3. Lecture 2.5 ‘Assisted Reproduction: At the Interaction of Ethics and Social Determination’
4. ART Practical Notes.

**Assessment 1:** Sperm and Fertility Test consisting of multiple choice alternatives garnered from the ART prac (10%).

**Practical 2: Reproductive Toxicology and Teratology.**

**Prerequisites:**

2. Reproductive Toxicology – a computer generated interactive practical.

**Assessment 2:** Reproductive Toxicology Test consisting of multiple choice alternatives garnered from the reproductive toxicology prac (10%).

**STUDENT THEME TOPIC: An interpretational study**

Since this unit focuses on the interface of biology and ethics in public health and personal decision making, part of the assessment will depend on your performance within a group context. Group experience and accomplishment present extremely powerful learning environments on many levels. You are required to create an original interactive play/script/scenario or hypothetical interviews, role plays, conundrums, or visualizations using diverse viewpoints that extend BIOL346’s mainstream learning. These techniques and others provide direction mixed with the unique flavor of the specifics of group interaction. Working in collaboration toward a common purpose creates a kind of alchemy which
soon becomes greater than the sum of its parts. Your choice of topic will give you the opportunity to in
deepth study an area of special interest to you in an original and thoughtful way and also gain by the
contributions of colleagues in your group. Groupings will have to be finalized as early as possible in
order to give you maximum time for designing strategies, enjoy group interaction and topic
preparations before the due by date.

Precondition

You are required to note on the student discussion board – ranked in order of preference – three
putative theme topics together with possible sub-theme groupings. These topics indicate the areas you
wish to be involved in for your theme interpretation which, if it is to be realized, will attract classmates
to form a group. Since, ideally, each group will be made up of 5-6 individuals; the theme topics must
be suitable for further subdivision into several debatable, controversial and interconnected sub-themes
to support group input. The overarching theme topic must also be sensitive to biological, social, and
ethical scrutiny. For example; the theme ‘an exploration of the ethics of environmental degradation
from the point of view of …’ maybe further broken up into possible sub-themes as follows:

- **Biological** – evolution, life cycles, genetics
- **Economic** – sustainability, transgenerational justice
- **Educational** – institutional/secular, grass roots, peer pressure
- **Legal/Political** – common law, legislation
- **Biophilic or Love of Life** – stewardship, altruism, spirituality
- **Aesthetic** – art, fashion – and so on.

Theme Realization

Once the groupings have been finalized, then the topic will be realized where each group member will
create their contribution. The final script should reveal ethically neutral aspects like mechanisms(s) of
action, applications, aims, access and effectiveness; but must also reveal how the topic is affecting the
group members; e.g., why is the topic so emotive, what is it that touches the emotions, why is it
attractive or repugnant, and how might we go further in our relationship with this topic. Group
members are also encouraged to address the topic directly because to personalize the topic provides
empirical knowledge while also exploring the feelings embedded within the theme or idea.

Finally, each group member is allocated a maximum of 400 words; however, this can be split into
smaller segments and distributed through the text as required.

Criteria for Evaluation

- **Content** – theories presented must be current
- **Creativity/originality of ideas**
- **Resources used**

**Theme Topic (15%)**
MID-TERM ASSIGNMENT – Choose one of the following topics (topics change each time round, the following were set in 2011)

1. “Science” as a pursuit has a set of ethical precepts from which it derives much of its social authority. Falsifying data, exaggerating claims, reusing data for multiple publications, eliminating anomalous or disconfirming data or studies, all undermine the integrity of science and public confidence in its products. Evaluate whether bioscience ethics training reinforces the ethical underpinnings of undergraduate scientists and their future scientific enterprises, or has little to no effect. Rationalize your point of view with examples of your choice. Your word limit is 1,000 words – diagrams, figures, acknowledgements and bibliography as long as necessary.

OR

2. Personal ethics are strongly influenced by emotions, particularly secondary emotions, because these emotions expand ethical reasoning and development as the child matures. Essentially, the innate sense of ethics requires nurturing during infancy before it can be cognitively understood and practiced in maturity. Children living in war zones, or similar chaotic circumstances, ‘adjust’ their ethical judgments to their surrounding conditions. Write an essay (or other form of communication such as a pronouncement, statement or debate) on measuring the true costs of war. Your word limit is 1,000 words – diagrams, figures, acknowledgements and bibliography as long as necessary.

Mid-Term Assignment (15%)

NB: Marks will be deducted for late assignment. However, should illness or mishap prevent any student from submitting returning their mid-term assignment by the due date, I will grant a personal extension if I feel the circumstances, as relayed to me, warrants an extension it.

PARTICIPATION

Participation (section in forum) will be noted as we move forward and a participation mark provided end of the semester (10%).

UNIT ASSESSMENT

Gametes, early development and assisted reproduction practical 10%
Reproductive toxicology practical 10%
Student group theme topic 15%
Mid-term assignment 15%
Participation mark 10%
Final examination 40%
TOTAL 100%
NB: In order to acquire a pass overall, it is essential to obtain a pass grade at minimum in the final assessment and the assignments plus participation. The university rules of conduct in examinations apply to the final exam. That is; should any student be prevented from returning the completed exam by the due date, the circumstances must be reported in writing (supported by an original medical certificate or other proper evidence) to the Registrar’s Office no later than the day following the due date and I should also be contacted and advised of the circumstances. In due course the information will officially be referred to me; however, I am not under any obligation to grant a special examination.

**EXPECTED GENERIC SKILLS AND GRADUATE CAPABILITIES DEVELOPED**

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<thead>
<tr>
<th>Discipline-Based Skills</th>
<th>Section of Unit</th>
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<tbody>
<tr>
<td><strong>Academic problem solving and critical/creative thinking skills</strong></td>
<td></td>
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<tr>
<td>• Able to think analytically and critically across disciplines</td>
<td>Unit transdisciplinary</td>
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<tr>
<td>• Able to work independently and cooperatively</td>
<td>Chosen theme topic and group communication</td>
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<tr>
<td>• Able to extract key bioethical issues from the scientific literature, lectures and group communications</td>
<td>Essay, prac tests, group work, lecture feedback sessions</td>
</tr>
<tr>
<td>• Acquiring a sound understanding of the ethical issues posed by specific biotechnological advances and their application</td>
<td>Practicals, essay, group work, lecture feedback and forum participation</td>
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| **Data handling and problem-solving skills** | |
| • Able to interpret and analyze data | Practicals and practical assessments |
| • Able to use data analysis and interpretation to present a coherent argument | Practicals, practical assessments and group work |

| **Self-management skills** | |
| • Take responsibility for own targets and timetabling | Progress at own pace online |

| **Information Attaining / Computer Literacy Skills** | |
| • Able to use the Internet to garner required information | Assignment, chosen theme topic |
| • Able to find references in the library | Assignment, chosen theme topic |
| • Able to judge the reliability of information sources | Assignment, group work |
| • Able to research a topic | Assignment, chosen theme topic |

| **Communication Skills – written** | |
| • Able to write critically in good standard English | Assignment, chosen theme topic |
| • Able to produce coherent and logical arguments | Assignment, group topic & script preparation |
| • Able to write in such a way as to highlight key points | Assignment, group topic & script preparation |
| • Able to communicate key concepts by means of diagrams | Assignment, theme topic & script preparation |
| • Able to write a bibliography | Assignment |
Communication Skills – Oral and interpersonal understanding

- Able to communicate ideas
- Able to pay attention and learn from others

| Chosen theme topic, discussion forum |

SUGGESTED TIMELINE FOR UNIT COMPLETION

A - Module 1:
Student Progress Week 1 August 1 – no assessment.

B - Module 2:
Student Progress Weeks 2 & 3 August 8 ----. First practical assessment ‘Gametes, Early Development and Assisted Reproduction’ assessment in Week 4, August 18.

C - Module 3:
Student Progress Weeks 4 & 5 August 22-29 -----. Second assessment ‘Student Group Theme Topic (Play/Script Scenario)’ due September 21.

D - Module 4:
Student Progress Weeks 6 & 7 September 5-12 – Second practical assessment ‘Reproductive Toxicology’ multiple choice – 5 questions’ due September 16.

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E - Module 5:
Student Progress Weeks 8, 9 & 10 in October. Mid-Term Assignment (Essay Topic) due September 26.

F - Module 6:
Student Progress Weeks 11, 12 & 13 October - November. Final Exam due (returned) November 14 – displayed one week earlier. Final participation mark.
EXAMINATIONS

Students will have the final exam for this unit made available on the 7th November 2011, with the completed exam due back via Centre for Open Education (see Submission of Assignments for details) on the 14th November, 2011. As this is an open book, weeklong exam, you are not required to attend an examination sitting.

SPECIAL CONSIDERATION REQUESTS

During Semester:

All requests for special consideration should be submitted through the Student Enquiry Service, Registrar and Vice-Principal's Office. You must also provide your Lecturer with a copy of the documentation lodged at the Student Enquiry Service when submitting assignments. We strongly recommend that you see your Lecturer or Tutor on all such occasions to discuss the matter with her/him.

During Examination Period:

During the examination period, original requests for special consideration plus one copy must be submitted to the Registrar and Vice-Principal, through the Academic Program Section, Level 4, Lincoln Building. The copy will be forwarded to your Division of Registration which will in turn forward it to the Department. Full details, and forms, are available at http://www.reg.mq.edu.au/Forms/APSCons.pdf. As well as submitting the appropriate documentation through the Registrar and Vice-Principal's Office, if you miss an examination, YOU MUST CONTACT YOUR LECTURER WITHIN 72 HOURS OF THE DATE OF THE EXAMINATION so that alternative examination arrangements may be made without delay. Failure to do so will result in the award of an "F" grade.

Please note that the submission of requests for special consideration is monitored by the Department. Repeated requests will result in referral of the student to the Dean of Students for discussion and advice.

Important information, including Undergraduate Student Forms and deadlines for submission, is available at: http://www.student.mq.edu.au/

SUBMISSION OF ASSIGNMENTS IN 2011

All students are required to submit their assessable written work to the Centre for Open Education (COE) in either physical form (in the folders provided) or via email, to coeassign@mq.edu.au, and be sure you have followed the guidelines listed below:

How to format your assignment?

1) Send the assignment from your Macquarie University student email account only.
   eAssignment sent from other email accounts cannot be accepted.
2) The Email Subject line should be filled in as follows: Unit Code - Assignment Number (two characters) - Your Student Number (e.g. ENGL101-01-41637133).

3) Your assignment must be sent within a single attachment to the email including the cover sheet and plagiarism declaration as well as the Bibliography and Appendices.

4) The attachment should be named in the same way as the Subject of the email; e.g. ENGL101_01_41637133.doc. This is so staff at the Centre for Open Education can easily identify your assignment.

5) The Cover Sheet and Plagiarism declaration should be completed (typed) and saved as the FIRST PAGE of your assignment. You can download the forms in word or pdf format.

6) Your assignment will only be accepted in Microsoft Word (in the format word.doc), RTF (Rich Text Format, rtf) or Adobe PDF. Any data which is not in the above formats will not be printed.

7) Send the assignment to coeassign@mq.edu.au via your Macquarie University student email account.

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**PLAGIARISM**

The definition of plagiarism is reproduced here. ALL (ie internal and external) students are requested to read the definition. If you are still unsure about this issue, please see your Lecturer for further advice. When submitting an assignment, you will be signing a statement confirming that you have read the information on plagiarism. In the event that a Lecturer identifies a case of plagiarism, the University's procedures for suspected cases of plagiarism will be followed by the Department. These procedures are available for perusal at: http://www.mq.edu.au/policy/docs/academic_honesty/policy.html

*IF YOU HAVE ANY QUERIES RELATING TO THESE ISSUES, PLEASE CONTACT YOUR LECTURER OR THE HEAD OF DEPARTMENT OF BIOLOGICAL SCIENCES.*

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**PLAGIARISM**

Academic Senate in June 2001 approved policies and procedures to ensure that the University takes a consistent and equitable approach to plagiarism. The Senate adopted the following definition of plagiarism.

Plagiarism involves using the work of another person and presenting it as one's own. Any of the following acts constitutes plagiarism unless the source of each quotation or piece of borrowed material is clearly acknowledged:

- copying out part(s) of any document or audio-visual material (including computer-based material);
- using or extracting another person's concepts, experimental results, or conclusions;
- summarizing another person's work;
- in an assignment where there was collaborative preparatory work, submitting substantially the same final version of any material as another student.

Encouraging or assisting another person to commit plagiarism is a form of improper collusion and may attract the same penalties which apply to plagiarism.
Senate also approved a statement entitled *The Dangers of Plagiarism and How to Avoid It* which is as follows:

The integrity of learning and scholarship depends on a code of conduct governing good practice and acceptable academic behaviour. One of the most important elements of good practice involves acknowledging carefully the people whose ideas we have used, borrowed, or developed. All students and scholars are bound by these rules because all scholarly work depends in one way or another on the work of others.

Therefore, there is nothing wrong in a student using the work of others as a basis for their own work, nor is it evidence of inadequacy on the student’s part, provided they do not attempt to pass off someone else’s work as their own.

To maintain good academic practice, so that a student may be given credit for their own efforts, and so that their own contribution can be properly appreciated and evaluated, they should acknowledge their sources and they should **ALWAYS:**

- state clearly in the appropriate form where they found the material on which they have based their work, using the system of reference specified by the Division in which their assignment was set;
- acknowledge the people whose concepts, experiments, or results they have extracted, developed, or summarised, even if they put these ideas into their own words;
- avoid excessive copying of passages by another author, even where the source is acknowledged. Find another form of words to show that the student has thought about the material and understood it, but stating clearly where they found the ideas.

If a student uses the work of another person without clearly stating or acknowledging their source, the result is falsely claiming that material as their own work and committing an act of PLAGIARISM. This is a very serious violation of good practice and an offence for which a student will be penalised.

**A STUDENT WILL BE GUILTY OF PLAGIARISM** if they do any of the following in an assignment, or in any piece of work which is to be assessed, without clearly acknowledging their source(s) for each quotation or piece of borrowed material:

- copy out part(s) of any document or audio-visual material, including computer-based material;
- use or extract someone else's concepts or experimental results or conclusions, even if they put them in their words;
- copy out or take ideas from the work of another student, even if they put the borrowed material in their own words;
- submit substantially the same final version of any material as a fellow student. On occasions, a student may be encouraged to prepare their work with someone else, but the final form of the assignment must be their own independent endeavour.

A full outline of the revised University Policy on Plagiarism can be found on the official Student @ Macquarie website at [http://www.mq.edu.au/policy/docs/academic_honesty/policy.html](http://www.mq.edu.au/policy/docs/academic_honesty/policy.html). The website includes a general discussion of plagiarism, definitions, examples drawn from concrete cases, procedures that will be followed by the University in cases of plagiarism, and recommended penalties. Students are expected to familiarise themselves with the website.

*Macquarie University Handbook of Undergraduate Studies 2007, pp 46*
Assignments are to be your own work. Using someone else's words (either another student's or from a book or journal article or a web site) without clear acknowledgement is plagiarism and can incur serious penalties. If it is ever necessary to use someone else's words for a phrase or sentence, they should be placed in quotation marks and acknowledged at the end of the sentence. If you use or modify a diagram or figure from another author, that must be acknowledged underneath (e.g. Figure 3 from Brown et al, 1995; figure modified from Green, 1997). Lecturers want to read your own words and ideas.

In the event that a Lecturer identifies a case of plagiarism, the University's procedures for suspected cases of plagiarism will be followed. These procedures are available for perusal at:
http://www.mq.edu.au/policy/docs/academic_honesty/policy.html