



# PHL 249

## Evolution, Mind and Culture

S2 External 2017

*Dept of Philosophy*

### Contents

<u>General Information</u>	2
<u>Learning Outcomes</u>	2
<u>General Assessment Information</u>	3
<u>Assessment Tasks</u>	3
<u>Delivery and Resources</u>	8
<u>Unit Schedule</u>	11
<u>Policies and Procedures</u>	12
<u>Graduate Capabilities</u>	14
<u>Changes from Previous Offering</u>	19

#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

Senior Lecturer

Karola Stotz

[karola.stotz@mq.edu.au](mailto:karola.stotz@mq.edu.au)

Contact via email

Relocation to Hub, more info shortly

After appointment

Credit points

3

Prerequisites

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

Corequisites

Co-badged status

Unit description

This unit is devoted to examining the ways in which evolutionary biology can shed light on the nature of the human mind and culture. The unit begins with an introduction to evolutionary theory and a discussion of some foundational issues concerning its nature and structure. It explains its central concepts such as natural selection, fitness, adaption, and units of selection. It will also debate current modifications to evolutionary theory, such as evolutionary developmental biology, niche construction and the so called Extended Synthesis. A substantial part of the unit, however, involves investigating extensions of evolutionary theory to the explanation of human mind and culture. In particular, recent theories of cultural and cognitive evolution such as Evolutionary Psychology, gene-culture coevolution, and cognitive-developmental niche construction will be examined in detail. Issues, such as the ambitions and limitations of evolutionary explanations of human ethical and sexual behaviour will also be discussed. No background in biology or science is assumed.

## 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:

1. A working knowledge of some of the current major issues connecting philosophy and

biology

2. The ability to understand and critically evaluate the theories and arguments studied, identify their strengths and weaknesses, and develop an appreciation of the ways in which these positions have developed in response to identification of problems in other views
3. Synthesize and analyze information from a variety of sources concerning foundational concepts and arguments in biology and philosophy.
4. An ability to express and expound the positions studied clearly and lucidly
5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing.

## General Assessment Information

All tasks will be assessed using the criteria listed under the description of each task, such as: Understanding, critical evaluation, written expression (etc). A detailed rubric for each task will be supplied on iLearn.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Class participation</u>	20%	No	Ongoing
<u>Answers to weekly questions</u>	20%	No	Week 2-11
<u>Essay Plan</u>	10%	No	Week 9
<u>Essay</u>	50%	No	Week 13

### Class participation

Due: **Ongoing**

Weighting: **20%**

This unit is held similar to a seminar, with some discussion in class, particularly in the weeks without tutorials (2, 4, 5, 7, 8, 10, and 11). There will only be 4 Tutorials, Week 3, 6, 9 and 12.

The participation mark is based in part on the extent to which students come to class well prepared, having done the required reading and devised questions and discussion points. It is also based on the extent to which students make a constructive contribution to classroom discussion, so students should come to class with prepared questions and discussion points.

Grading: Students will receive a pass for satisfactory or fail for unsatisfactory participation at the end of term.

Class participation marking criteria:

- **Outstanding contributor:** Contributions in class reflect extensive preparation. Ideas offered are usually substantive; provide major insights and direction for class discussion. Challenges are substantiated and persuasive. Makes an important contribution to class discussion overall.
- **Good contributor:** Contributions in class reflect thorough preparation. Ideas offered are often substantive; provide useful insights and some direction for class discussion. Challenges are substantiated and often persuasive. Makes a significant contribution to class discussion overall.
- **Adequate contributor:** Contributions in class reflect adequate preparation. Ideas offered are sometimes substantive; provide some insight but rarely offer direction for class discussion. Challenges are sometimes presented, substantiated and persuasive. Makes a contribution to class discussion overall.
- **Unsatisfactory contributor:** Contributions in class reflect inadequate preparation. Ideas offered are rarely substantive; rarely provide insight but do not offer useful direction for class discussion. Contributions may be distractions rather than constructive. Does not make a positive contribution to class discussion overall.
- **Non-participant:** This person says little or nothing in class. There is not an adequate basis for evaluation. Makes no contribution to discussion.

(Adapted from Tyler, J. (2004) Class Participation Assessment Guide. Department of Education, Brown University).

**External** students are required to post online a discussion point in response to set readings during the week (Mon-Fri) in which those readings are set. They should also provide courteous and relevant feedback on at least one other post each week for an absolute minimum of 7 weeks of the semester. The marking criteria are the same as for internal students.

Grading: Out of 10 per week, averaged over the 10 best

Interim report will be given.

On successful completion you will be able to:

- 1. A working knowledge of some of the current major issues connecting philosophy and biology
- 2. The ability to understand and critically evaluate the theories and arguments studied, identify their strengths and weaknesses, and develop an appreciation of the ways in which these positions have developed in response to identification of problems in other

views

- 3. Synthesize and analyze information from a variety of sources concerning foundational concepts and arguments in biology and philosophy.
- 4. An ability to express and expound the positions studied clearly and lucidly
- 5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing.

## Answers to weekly questions

Due: **Week 2-11**

Weighting: **20%**

Questions to the readings for each week will be posted on iLearn. Please provide short answers to all of them and post them on iLearn before each class.

Assessment:

This assessment task will be assessed by the following criteria set out in the following learning outcomes:

1. A working knowledge of some of the current major issues connecting philosophy and biology
2. The ability to understand and critically evaluate the theories and arguments studied, identify their strengths and weaknesses, and develop an appreciation of the ways in which these positions have developed in response to identification of problems in other views
3. An ability to understand and critically evaluate theories and arguments in the philosophy of biology.
4. An ability to express and expound the positions studied clearly and lucidly
5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing

Grading: Students have to submit answers to all the questions, which are posted weekly before class based on the readings, each week from Week 2-11. They will have to submit answers to the questions for at least 7 weeks to get a pass.

Grade per week: (10 for each submitted), fail (0 for not submitted) Final grade: pass (70 for 7 to 100 for 10) or fail (0)

On successful completion you will be able to:

- 1. A working knowledge of some of the current major issues connecting philosophy and biology
- 2. The ability to understand and critically evaluate the theories and arguments studied, identify their strengths and weaknesses, and develop an appreciation of the ways in which these positions have developed in response to identification of problems in other

views

- 3. Synthesize and analyze information from a variety of sources concerning foundational concepts and arguments in biology and philosophy.
- 4. An ability to express and expound the positions studied clearly and lucidly
- 5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing.

## Essay Plan

Due: **Week 9**

Weighting: **10%**

Students will write a 1-2 page plan or outline for their essay. This will contain the main thesis, arguments and evidence to support it, potential objections and reply to these objection, a summary and a list of references. A guide for how to write such a plan will be made available on iLearn.

Assessment:

This assessment task will be assessed by the following criteria set out in the following learning outcomes:

1. A working knowledge of some of the current major issues connecting philosophy and biology
2. The ability to understand and critically evaluate the theories and arguments studied, identify their strengths and weaknesses, and develop an appreciation of the ways in which these positions have developed in response to identification of problems in other views
3. An ability to understand and critically evaluate theories and arguments in the philosophy of biology.
4. An ability to express and expound the positions studied clearly and lucidly
5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing

Submission Instructions for Internal Students: Students will bring their plan to the tutorial in week 9 for peer discussion and feedback. Submission Instructions for External Students: External students will post their essay plans to the external students forum by week 9 and provide feedback on at least one other plan by week 10.

Feedback: Students will get feedback from convenor, plus there will be a peer feedback exercise

Grading: Pass for submission or Fail for no submission.

On successful completion you will be able to:

- 1. A working knowledge of some of the current major issues connecting philosophy and biology
- 2. The ability to understand and critically evaluate the theories and arguments studied,

identify their strengths and weaknesses, and develop an appreciation of the ways in which these positions have developed in response to identification of problems in other views

- 3. Synthesize and analyze information from a variety of sources concerning foundational concepts and arguments in biology and philosophy.
- 4. An ability to express and expound the positions studied clearly and lucidly
- 5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing.

## Essay

Due: **Week 13**

Weighting: **50%**

Students will write a research essay of 3,000 words which provides a careful critical examination, based on reasons, argumentation and evidence, of one of the topics covered in the course. A list of essay questions will be made available on iLearn. There will be a guide on how to write a successful essay on iLearn.

Assessment:

This assessment task will be assessed by the following criteria set out in the following learning outcomes:

1. A working knowledge of some of the current major issues connecting philosophy and biology
2. The ability to understand and critically evaluate the theories and arguments studied, identify their strengths and weaknesses, and develop an appreciation of the ways in which these positions have developed in response to identification of problems in other views
3. An ability to understand and critically evaluate theories and arguments in the philosophy of biology.
4. An ability to express and expound the positions studied clearly and lucidly
5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing

Submission via Turnitin.

Grading: Students will receive a grade out of 100 for the paper. A grading rubric will be available on iLearn.

On successful completion you will be able to:

- 1. A working knowledge of some of the current major issues connecting philosophy and biology
- 2. The ability to understand and critically evaluate the theories and arguments studied, identify their strengths and weaknesses, and develop an appreciation of the ways in

which these positions have developed in response to identification of problems in other views

- 3. Synthesize and analyze information from a variety of sources concerning foundational concepts and arguments in biology and philosophy.
- 4. An ability to express and expound the positions studied clearly and lucidly
- 5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing.

## Delivery and Resources

This unit uses an iLearn website and Echo360 lecture recordings (<https://ilearn.mq.edu.au/login/MQ/>). The website contains links to lecture notes, lecture recordings, and other learning materials. Students will therefore require access to a computer and a good internet connection in order to access all the material, and participate in the unit effectively.

Together with a careful attention to the assigned readings, the lectures will be delivered in a seminar style, which will include some discussion. They are also designed to provide an important foundation for tutorial discussions which will be held every three weeks. In order to get the most of those discussions and to foster a sense of common intellectual purpose, **attendance at all lectures is mandatory**. If you have a regular conflict that will prevent you from attending one or both of the lectures, you should consider enrolling as an external student.

### Seminars and Tutorial Times

Seminars are on Wednesday 2-4pm, in 25 Wallys Walk, W6B 345

Tutorials meet every three weeks (Week 3, 6, 9, & 12) on Wednesday afternoons: 4-5pm 23 Wallys Walk W5A 204, 5-6pm E3B 215 Tut rm

### Required Materials:

Students are **not** required to purchase any books for this course. All readings for tutorials will be made available via iLearn. Further readings for essays will be recommended.

### Readings

All readings will be made available on iLearn. Most readings are taken from these textbooks:

Sterelny, K., & Griffiths, P. E. (1999). *Sex and death: An introduction to philosophy of biology*. University of Chicago Press. à S&G

Godfrey Smith, Peter (2013) *Philosophy of Biology*. Princeton Foundations of Contemporary Philosophy. Princeton University Press. à PGS

A few readings come from these books:

Griffiths, P., & Stotz, K. (2013). *Genetics and philosophy: an introduction*. Cambridge University Press. à G&S



Sterelny, Kim (2003) *Thought in a Hostile World: The Evolution of Human Cognition*.

### **Week 1. Philosophy of Biology**

1. Griffiths, Paul (2008) "Philosophy of Biology". *The Stanford Encyclopedia of Philosophy* (Spring 2017 Edition), Edward N. Zalta (ed.). URL = <<https://plato.stanford.edu/archives/spr2017/entries/biology-philosophy/>>.
2. PGS, Chapter 1 "Philosophy and Biology"

### **Week 2. The Received View of Evolution:**

1. S&G, Chapter 2 "The Received View of Evolution"
2. Gould, S. J. and R. C. Lewontin and R. (1979) "The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme." *Proceedings of the Royal Society of London. Series B, Biological Sciences* 205 (1161), 581-598

### **Week 3. Individuals & Levels of selection**

1. O'Malley, M. A. (2016). Reproduction expanded: multigenerational and multilineal units of evolution. *Philosophy of Science*, 83(5), 835-847.
2. PGS, Chapter 5 "Individuals"

### **Week 4. Molecular and Behavioral Genetics**

1. Taylor, Peter and Lewontin, Richard (2017) "The Genotype/Phenotype Distinction". *The Stanford Encyclopedia of Philosophy*, Edward N. Zalta (ed.). URL = <<https://plato.stanford.edu/archives/sum2017/entries/genotype-phenotype/>>.
2. Griesemer, James (2015) "A Postgenomic Philosophy of the Gene". *BioScience* 65 (2), 212-3.
3. Lynch, Kate. "Explainer: What Is Heritability?" *The Conversation*. Accessed January 27, 2017. <http://theconversation.com/explainer-what-is-heritability-21334>.

Optional:

4. Griffiths, P. & Stotz, K. (2013). *Genetics and philosophy: an introduction*. Cambridge University Press. Ch1 Introduction, pp 1-8, Ch 4 The Reactive Genome, pp. 66-106, & Chapter 9 Four Conclusions, pp. 221-228

### **Week 5: Adaptationism, Functions and Naturalised Teleology**

1. PGS Chapter 4 Adaptation, Construction and Function
2. Mossio, M., Saborido, C., & Moreno, A. (2009). An organizational account of biological functions. *The British Journal for the Philosophy of Science*, 60(4), 813-841.

Optional:

3. S&G CHAPTER 10 Adaption, Perfection, Function, pp. 215-252
4. Godfrey-Smith, P. (1993). Functions: consensus without unity. *Pacific Philosophical Quarterly* 74 (3):196-208.

5. Godfrey-Smith, P. (2001). Three kinds of adaptationism. *Adaptationism and optimality*, 335-357.

### **Week 6: Developmental Systems Theory**

1. S&G, Ch 5. The Developmental Systems Alternative, pp. 94-111
2. Stotz, K. and P. E. Griffiths. In Press. 'Genetic, epigenetic and exogenetic information'. In: Richard Joyce (ed.). *Routledge Handbook of Evolution and Philosophy*. Routledge.

Optional:

3. Uller, Tobias (2013) "Non-genetic inheritance and evolution". In: Kostas Kampourakis (ed.) *The Philosophy of Biology: a Companion for Educators*, pp 267-287

### **Week 7: Extended Evolutionary Synthesis**

1. Laland K, Odling-Smee J, Hoppitt W, Uller T (2012) "More on how and why: cause and effect in biology revisited". *Biol Philos* 28(5):719–745
2. Laland KN, Uller T, Feldman MW, Sterelny K, Mu ?ller GB, Moczek A, Jablonka E, Odling-Smee J. 2015. "The extended evolutionary synthesis: its structure, assumptions and predictions." *Proc. R. Soc. B* 282: 20151019. <http://dx.doi.org/10.1098/rspb.2015.1019>

### **Week 8: Evolution and Social Behavior**

1. S&G, Chapter 13. "From Sociobiology to Evolutionary Psychology"
2. PGS, Chapter 8. "Evolution and social behavior"

### **Week 9: Naturalized epistemologies**

- 1, Robert L. Campbell (2006) Jean Piaget's Genetic Epistemology: Appreciation and Critique. URL: <http://campber.people.clemson.edu/piaget.html>
- 2, Gontier, Nathalie (20) "Evolutionary Epistemology". The Internet Encyclopedia of Philosophy, James Fieser and Bradley Dowden (eds.). URL: <http://www.iep.utm.edu/eds/>

Optional:

3. Turner, Terence (1973) "Review article Piaget's Structuralism. Genetic Epistemology." *American Anthropologist* 75: 351-373
4. Bradie, Michael and Harms, William (2011) "Evolutionary Epistemology". The Stanford Encyclopedia of Philosophy (Spring 2017 Edition), Edward N. Zalta (ed.). URL = <https://plato.stanford.edu/archives/spr2017/entries/epistemology-evolutionary/>
5. Rysiew, Patrick (2106) "Naturalism in Epistemology". The Stanford Encyclopedia of Philosophy (Spring 2017 Edition), Edward N. Zalta (ed.). URL = <https://plato.stanford.edu/archive/s/spr2017/entries/epistemology-naturalized/>

### **Week 10: Cultural Evolution and Niche construction**

1. Lewens, Tim (2007) "Cultural Evolution". The Stanford Encyclopedia of Philosophy (Spring

2013 Edition), Edward N. Zalta (ed.). URL = <https://plato.stanford.edu/archives/spr2013/entries/evolution-cultural/>

### Week 11: Developmental Niche Construction

1. Sterelny, K. Thought in a hostile world. Ch 8. Epistemic Engineering & Ch. 11. Evolving a Theory of Mind
2. Stotz, K. (2017). "Why Developmental Niche Construction is not Selective Niche Construction – and why it matters". Interface Focus (Special Issue "New Trends in evolutionary Biology")

### Week 12: Human Nature

1. Stotz, K and P. E. Griffiths. In Press. Developmental systems perspective of human nature. In: Elizabeth Hannon and Tim Lewens (eds) *Why we disagree about Human Nature*. Oxford: Oxford University Press.

Optional:

2. Stotz, K. 2010. 'Human Nature and Cognitive-Developmental Niche construction. *Phenomenology and the Cognitive Sciences* 9 (4):483-501.

## Unit Schedule

Date and topic	Topic	Tutorials
Week 1: Introduction	What is philosophy of biology?	
Week 2: Evolutionary Theory	The received view of evolution	
	Challenges	
Week 3: Individuals & Levels of Selection	What are Individuals?	Tutorial for Weeks 1-3
	Multi-level selection	
Week 4: Genetics	Genetics	
	Behavior genetics	
Week 5: Adaptation, construction, functions & constraints	Adaptation, Construction & Function	
	Spandrels and Constraints	

Week 6: Developmental Systems Theory	Developmental systems theory (DST)	Tutorial for Weeks 4-6
	Extended Inheritance	
Week 7: Extended Evolutionary Synthesis	Proximate and Ultimate Explanations	
	The Extended Evolutionary Synthesis	
Week 8: Evolution and Social Behavior	Sociobiology	
	Evolutionary Psychology	
Week 9: Naturalized Epistemologies	Piaget's Genetic Epistemology	Tutorial for Weeks 7-9
	Evolutionary Epistemology	
Week 10: Cultural Evolution & Niche Construction	Cultural evolution	
	Niche construction	
Week 11: Developmental Niche Construction	Epistemic Engineering	
	Evolving a Theory of Mind	
Week 12: Human Nature	Developmental niche construction	Tutorial for Weeks 10-12
	Human Nature and DST	

## 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](http://mq.edu.au/policy/docs/academic_honesty/policy.html)

Assessment Policy [http://mq.edu.au/policy/docs/assessment/policy\\_2016.html](http://mq.edu.au/policy/docs/assessment/policy_2016.html)

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

Complaint Management Procedure for Students and Members of the Public [http://www.mq.edu.au/policy/docs/complaint\\_management/procedure.html](http://www.mq.edu.au/policy/docs/complaint_management/procedure.html)

Disruption to Studies Policy (in effect until Dec 4th, 2017): [http://www.mq.edu.au/policy/docs/disruption\\_studies/policy.html](http://www.mq.edu.au/policy/docs/disruption_studies/policy.html)

Special Consideration Policy (in effect from Dec 4th, 2017): <https://staff.mq.edu.au/work/strategy->

[planning-and-governance/university-policies-and-procedures/policies/special-consideration](#)

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/](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](http://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](http://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/](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

- 2. The ability to understand and critically evaluate the theories and arguments studied, identify their strengths and weaknesses, and develop an appreciation of the ways in which these positions have developed in response to identification of problems in other views
- 5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing.

### 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 outcome

- 5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing.

#### Assessment task

- Essay

### Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

## **Learning outcomes**

- 3. Synthesize and analyze information from a variety of sources concerning foundational concepts and arguments in biology and philosophy.
- 5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing.

## **Assessment tasks**

- Answers to weekly questions
- Essay Plan
- Essay

## **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**

- 1. A working knowledge of some of the current major issues connecting philosophy and biology
- 2. The ability to understand and critically evaluate the theories and arguments studied, identify their strengths and weaknesses, and develop an appreciation of the ways in which these positions have developed in response to identification of problems in other views
- 3. Synthesize and analyze information from a variety of sources concerning foundational concepts and arguments in biology and philosophy.
- 4. An ability to express and expound the positions studied clearly and lucidly
- 5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing.

## Assessment tasks

- Class participation
- Answers to weekly questions
- Essay Plan
- Essay

## 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

- 1. A working knowledge of some of the current major issues connecting philosophy and biology
- 2. The ability to understand and critically evaluate the theories and arguments studied, identify their strengths and weaknesses, and develop an appreciation of the ways in which these positions have developed in response to identification of problems in other views
- 3. Synthesize and analyze information from a variety of sources concerning foundational concepts and arguments in biology and philosophy.
- 4. An ability to express and expound the positions studied clearly and lucidly
- 5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing.

## Assessment tasks

- Class participation
- Answers to weekly questions
- Essay Plan
- Essay

## 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**

- 1. A working knowledge of some of the current major issues connecting philosophy and biology
- 2. The ability to understand and critically evaluate the theories and arguments studied, identify their strengths and weaknesses, and develop an appreciation of the ways in which these positions have developed in response to identification of problems in other views
- 3. Synthesize and analyze information from a variety of sources concerning foundational concepts and arguments in biology and philosophy.
- 4. An ability to express and expound the positions studied clearly and lucidly
- 5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing.

## **Assessment tasks**

- Class participation
- Answers to weekly questions
- Essay Plan
- 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**

- 2. The ability to understand and critically evaluate the theories and arguments studied, identify their strengths and weaknesses, and develop an appreciation of the ways in which these positions have developed in response to identification of problems in other views
- 3. Synthesize and analyze information from a variety of sources concerning foundational

concepts and arguments in biology and philosophy.

- 4. An ability to express and expound the positions studied clearly and lucidly
- 5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing.

## **Assessment tasks**

- Class participation
- Answers to weekly questions
- Essay Plan
- Essay

## **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**

- 1. A working knowledge of some of the current major issues connecting philosophy and biology
- 2. The ability to understand and critically evaluate the theories and arguments studied, identify their strengths and weaknesses, and develop an appreciation of the ways in which these positions have developed in response to identification of problems in other views
- 5. Students should start to develop their own philosophically informed views on the issues studied and defend their views, clearly and courteously in response to critical evaluation from others in discussion and in writing.

## **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 outcome**

- 2. The ability to understand and critically evaluate the theories and arguments studied, identify their strengths and weaknesses, and develop an appreciation of the ways in which these positions have developed in response to identification of problems in other views

## **Changes from Previous Offering**

A new unit schedule and new resources.