UNSW THE UNIVERSITY OF NEW SOUTH WALES | Arts and Social Sciences

SCHOOL OF HUMANITIES & LANGUAGES

ARTS3243

Remaking Nature: The Politics of Biotechnology

SEMESTER 2, 2013

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Welcome to ARTS3243, an upper Level 3 courses in the UNSW Environmental Humanities Major.

Course Staff

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Course Details

This course examines what many have called the 'century of the gene' and its implications for contemporary environmental thinking. In 1953, two young academics – James Watson, an American molecular biologist and zoologist, and Francis Crick, an English biologist –published the now famous *Nature* article entitled 'A Structure for Deoxyribose Nucleic Acid.' Now commonly credited with the discovery of DNA, Watson and Crick's famous breakthrough heralded what would become a revolution in genetics and the life sciences. Watson and Crick are typically credited with discovering the 'secret to life itself' and DNA is commonly understood as holding the basic informational code for biological life and forms of evolutionary hereditary. Successive areas of research in molecular biology and systems theory, genetic engineering and biotechnology, together with an ambitious programme to map the human genome, have broadly reconfigured commonly held notions of the 'naturalness' of nature.

Moreover, contemporary areas of research in nanotechnology, stem cells and synthetic biology have pushed life science research into new areas of technological development and raised the possibility of the production of forms of synthetic life. Alongside these developments, the biosciences and biotechnology have become a focal point for often-intense environmental debate, controversy and protest – focusing particularly on the release of genetically modified organisms to the environment and their intended use in contemporary agricultural systems. Together these developments have been responsible for changing the way we understand our relationship with environmental systems and the character of contemporary environmental controversies. More broadly, the political investment in biotechnology research has fundamentally challenged our ideas about politics, citizenship, representation and democracy.

The biosciences might therefore be understood as a social, political and cultural project inasmuch they are a technical and technological one. This course considers these issues through the prism of contemporary environmental thinking, drawing on a multidisciplinary set of insights from science and technology studies (STS), cultural and political theory, cultural anthropology and sociology. Focusing on the scientific and cultural history of molecular biology and biotechnology, and covering a range of contemporary case-studies on GM food, bio-prospecting, nanotechnology and synthetic biology, the course will equip students with a theoretical and conceptual tool kit that will enable them to better understand these developments. The course will focus particularly on the political and social implications of new genetic knowledge and contemporary biotechnological research. We will treat the changes brought about by the genetics revolution as an opportunity to rethink key concepts in contemporary environmental politics – including citizenship, representation, property, reproduction and conservation. These issues will be explored through group case study projects offering an opportunity for independent research and analysis, together with targeted readings from recent scholarly work.

ARTS3243 is worth 6 units of credit.

Course Aims

The aims of this course are:

1. To deepen students' understanding of the historical, political and cultural contexts that have shaped the emergence of biotechnology and the biosciences;

2. To equip students with a conceptual framework that enables a critical examination of the social, environmental and political aspects biotechnology and the biosciences;

3. To develop skills in researching and writing at the intersection of the humanities and the biosciences; and

4. To enhance skills of critical inquiry, reflection and discussion through a detailed engagement with contemporary social science and humanities scholarship and to provide a range of opportunities for presenting original research and analysis.

Student Learning Outcomes

1. At the conclusion of this course students should be able to:

2. Explain the historical, political and cultural contexts that have shaped the emergence of biotechnology and the biosciences;'

3. Analyse the intersections between genetics research and shifts in contemporary political organisation and environmental practice;

4. Apply selected disciplinary approaches and conceptual tools to understanding the social and environmental aspects of biotechnology and the biosciences;

5. Apply upper level skills of critical analysis, problem solving and interpretation in both written work and in-class discussions.

6. Conduct independent research, and demonstrate a capability to assemble, synthesise and communicate research findings and analytical interpretations.

Learning and Teaching Rationale

This course contributes to the Environmental Humanities major by introducing students to key debates on post-human natures, biopolitics and the democratic challenges posed by life science research. The Environmental Studies major currently has no single course that focuses on the environmental and political implications of biotechnology and allied areas of contemporary research and development. Given that research in these fields has been at the centre of a set of political debates that concern fundamental

questions about human- environment relations these issues are crucial to a contemporary teaching programme in Environmental Humanities.

The course is designed as an advanced upper level course to build on and extend the conceptual insights students are exposed to in L1 and L2 courses. It is also designed as a specialist module that deals, in some depth, with a key area of contemporary environmental and political debate in a way that will equip students to understand and analyse the kinds of dynamics that are likely to shape environmental politics in years to come. This conceptual approach also complements existing courses in the Environmental Humanities major, whilst also appealing to a wide range of students across UNSW. In particular the course will be of interest to students from the Faculties of Science and Medicine who have an interest in the social and ethical aspects of life science research. The course will also be of interest to students from the College of Fine Arts and students within FASS who are interested in intersections between the science of genetics and contemporary cultural practice.

Course Structure

ARTS3243 will be delivered in a 3-hour lecture and tutorial block each Wednesday during term time.

The course is timetabled for a three-hour block in John Goodsell LG21.

As outlined below, attendance at lectures and tutorials is compulsory.

Course Text and Additional Readings

The course text for ARTS 3243: Remaking Nature will be :

Dolly Mixtures: The Remaking of Genealogy by Sarah Franklin (Duke University Press, 2007)

Additional tutorial readings will be uploaded to the course Moodle website.

Course Schedule

1	Wednesday 31 July	L1: Introduction and structure of the course
2	Wednesday 7 August	L2: Origins
		Readings: 1. Franklin: *Dolly Mixtures* Chapter 0: Origins 2. Jasanoff, S. (2011) Introduction: Rewriting Life, Reframing Rights. In *Reframing Rights: Bioconstitutionalism in the Genetic Age* (Jasanoff, S., ed), MIT Press, Cambridge
3	Wednesday 13 August	L3: Sex
		Readings: 1. Franklin: *Dolly Mixtures* Chapter 1: Sex 2. Foucault, Michel. 1990. *The History of Sexuality. Vol. 1, An Introduction*. New York: Vintage Books. Part 5: Right of Death and Power over Life 3. Wilmot, Sarah. 2007. "Between the Farm and the Clinic: Agriculture and Reproductive Technology in the Twentieth Century." *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 38 (2) (June): 303–315.
4	Wednesday 21 August	L4: Capital
		Readings 1. Franklin: *Dolly Mixtures* Chapter 2: Capital 1. Sunder Rajan, K. (2006) *Biocapital: The Constitution of Postgenomic Life*, Duke University Press, Durham. N.C. 2. Helmreich, S. (2008) Species of biocapital. *Science as Culture* **17**, 463-478

5	Wednesday 28 August	L5: Nation (and beyond)
		Readings 1. Franklin: *Dolly Mixtures* Chapter 3: Nation 2. Sunder Rajan, K. (2006) *Biocapital: The Constitution of Postgenomic Life*, Duke University Press, Durham. N.C. Chapter 5: Salvation and Nation: Underlying Belief Structures of Biocapital
6	Wednesday 4 September	L6: Colony
		Readings: 1. Franklin: *Dolly Mixtures* Chapter 4: Colony 2. Warwick Anderson (to add) 3. Jasanoff, Sheila. 2006. "Biotechnology and Empire: The Global Power of Seeds and Science." Osiris 21 (1) (January 1): 273–292.
7	Wednesday 11 September	L7: Death
		Readings 1. Franklin: *Dolly Mixtures* Chapter 5: Death 2. Haraway, Donna Jeanne. 2008. "Cloning Mutts, Saving Tigers: Bioethical Angst and Questions of Flourishing." In *When Species Meet*, 133–157. University of Minnesota Press.
8	Wednesday 18 September	L8: Case Studies Bioprospecting + Reproductive technologies
		Readings: TBC
9	Wednesday 25 September	L9: Guest Lecture: Thom van Dooren
		Readings: TBC

		MID SEMESTER BREAK
10	Wednesday 9 October	L10: Xenotransplantation Case Study
		Readings: TBC
11	Wednesday 16 October	L11: Nanotechnology + Synthetic biology = vitalizing life itself
		Readings: TBC
12	Wednesday 23 October	L12: Concluding lecture
		Readings: TBC
13	Wednesday 30 October	Revision Tutorial

Course Evaluation and Development

Student evaluative feedback on this course is welcomed and is gathered periodically, using among other means UNSW's Course and Teaching Evaluation and Improvement (CATEI) process.

Student feedback is taken seriously, and continual improvements are made to the course based in part on such feedback. Significant changes to the course will be communicated to subsequent cohorts of students taking the course.

Assessment

1. Seminar Presentation 10%

You will be asked to prepare a tutorial presentation focusing on a key reading and respond to a set of questions and facilitate class discussion.

2. Reading Reflections 40%

This assessment task will be comprised of two 750 word essays, based around key readings and tutorial questions. The two pieces will be due in weeks 5 & 9 and will be designed to give you early feedback on your individual progress. Each piece will be worth 20% of the overall mark for the course.

1. Final Essay 40%

The final report will be a 3000 paper due in week 13. The details of this essay topic will be published on the course moodle site.

The aim of this task is to develop your analytical abilities, helping you to apply the conceptual framework we will develop throughout the course to the analysis of an aspect of climate change.

To do well in this course you will be expected to show a good grasp of the issue and evidence of comprehensive reading and understanding of course material. You will be expected to contextualise you chosen issue both conceptually and historically and to provide a synthetic analysis that demonstrates that you have been able to apply these ideas to a real-world example.

It goes with out saying that in order to do well in this task your report should be well presented and comply with conventions for referencing source material. Please see the library information on referencing: http://www.lc.unsw.edu.au/onlib/ref.html.

2. Individual Participation 10%

Your participation in tutorial discussions will be assessed throughout the course and an individual participation grade awarded that equates to 10% of your final grade.

Assignment Submission

- The cut off time for all assignment submissions in the School is **4pm** of the stated due date.

- 2 assignment copies must be submitted for every assessment task - 1 paper copy and 1 electronic copy.
- All hard/paper copy assessments should be posted into the Assignment Drop Boxes outside the front counter of the School of Humanities and Languages on level 2, Morven Brown Building by 4pm on the due date.
- A completed cover sheet must be securely attached to assignments. The School is not responsible for any missing pages from poorly bound or stapled assignments.
- In addition, a soft copy must be sent through **Moodle** on Turnitin by 4pm on the due date

Assignment Collection

Assignments should be collected from your lecturer/tutor and must be collected by the owner/author of the assignment. A Stamped Self Addressed Envelope must be provided on submission if students require their assignment to be posted back to their home address.

Assignment Extensions

A student may apply to the Lecturer/Tutor for an extension to the submission date of an assignment. Requests for extension must be made via myUNSW before the submission due date, and must demonstrate exceptional circumstances, which warrant the granting of an extension. If medical grounds preclude submission of assignment by due date, contact should be made with subject coordinator as soon as possible. A medical certificate will be required for late submission and must be appropriate for the extension period.

To apply for an extension please log into myUNSW and go to My Student Profile tab > My Student Services channel > Online Services > Special Consideration

Late Submission of Assignments

Assignments submitted after the due or extended date will incur a XX% penalty of the maximum marks available for that assignment. Assignments received more than XX calendar days after the due or extended date will not be allocated a mark.

ATTENDANCE

To successfully complete this unit you are required to attend minimum 80% of classes. If this requirement is not met you will fail the unit. Attendance records will be kept.

Academic Honesty and Plagiarism

Students seeking information on plagiarism should visit the following web site:
http://www.lc.unsw.edu.au/plagiarism/index.html

Occupational Health and Safety Policy

UNSW's Occupational Health and Safety (OHS) Policy requires each person to work safely and responsibly, in order to avoid personal injury and to protect the safety of others.

Any OHS concerns should be raised with your immediate supervisor, the School's OHS representative, or the Head of School. The OHS guidelines are available at: http://www.ohs.unsw.edu.au/ohs_policies/index.html

Student Equity and Diversity

Students who have a disability that requires some adjustment in their learning and teaching environment are encouraged to discuss their study needs with the course convener prior to, or at the commencement of the course. Alternatively, the Student Equity and Diversity Unit can be contacted on 9385 4734. Further information is available at: http://www.studentequity.unsw.edu.au

Grievances

All students should be treated fairly in the course of their studies at UNSW. Students who feel they have not been dealt with fairly should in the first instance attempt to resolve any issues with their tutor or the course convenors. If such an approach fails to resolve the matter, the School of Humanities has an academic member of staff who acts as a Grievance Officer for the School. This staff member is identified on the notice board in the School of Humanities. Further information about UNSW grievance procedures is available at: https://my.unsw.edu.au/student/atoz/Complaints.html

Other Student Information

myUNSW is the single online access point for UNSW services and information, integrating online services for applicants, commencing & current students and UNSW staff. To visit myUNSW please visit either of the below links:

https://my.unsw.edu.au
https://my.unsw.edu.au/student/atoz/ABC.html