136-218 Experiment: Seeing is Believing?

Credit Points:	12.50
Level:	2 (Undergraduate)
Dates & Locations:	This subject is not offered in 2009.
Time Commitment:	Contact Hours: one 1.5 hour lecture and one 1.5 hour seminar weekly Total Time Commitment: 8.5 hours per week
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry. It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability
Contact:	Dr Kristian Camilleri kcam@unimelb.edu.au
Subject Overview:	Experimentation has been considered one of the defining features of science ever since the eighteenth century. Today we frequently take the performance of experiments as a relatively straightforward and routine activity. However, the idea that we can acquire knowledge about the world by actively interfering with it, rather than simply passively observing it, brought with it new assumptions about the nature of knowledge and reality, as well as the transformation of the social and technological context in which science is practiced. In this subject we examine the nature of experimental knowledge and practice from a range of newly emerging perspectives in the history, philosophy and social studies of science. Drawing on some fascinating case studies from the history of science and medicine, this subject explores the intricate and complex issues surrounding the nature and purpose of experimentation. Some of the key questions we poses in this subject are: What role do experiments play in scientific knowledge and practice and how has this changed throughout history? How can experiments tell us about ‘nature’ if they depend on the creation of phenomena in artificial situations? And why do scientists often ‘interpret’ the same experiment in different ways?
Objectives:	Students who successfully complete this subject should... # have considerable knowledge of the different uses of experiment in the natural sciences and an understanding of the historical, social, and technological contexts which shape experimental practice; # have an understanding of the historical origins of experimental science; # develop an understanding of the philosophical issues surrounding experimentation as both a means of attaining knowledge and a practice; # develop an ability to conduct critical research at third year level; # through the written work develop a method of presenting an argument by developing critical analysis through synthesizing, and distinguishing between, a variety of arguments and ideas; # gain the necessary critical acumen and store of relevant knowledge to be able to engage confidently and intelligently in contemporary debates in the history and philosophy of science.
Assessment:	One piece of written assessment of 1,500 words worth 30 % due in week 6 and one essay of 2,500 words worth 70 % due at the end of semester

Prescribed Texts:	Subject reader available from University Bookshop
Recommended Texts:	Hacking, I. (1983). *Representing and intervening: introductory topics in the philosophy of natural science*. Cambridge: New York: Cambridge University Press. Gooding, D., T. J. Pinch, and S. Schaffer. (Eds.) (1989). *The uses of experiment: studies in the Natural Sciences*. Cambridge; New York: Cambridge University Press.
Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: # **Bachelor of Biomedicine (https://handbook.unimelb.edu.au/view/2009/J07)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2009/F04)** # **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2009/A04)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2009/M05)** # **Bachelor of Science (https://handbook.unimelb.edu.au/view/2009/R01)** # **Bachelor of Engineering (https://handbook.unimelb.edu.au/view/2009/355-AA)** You should visit **learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)** and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	Students who successfully complete this subject should # Develop skills in written and oral communication # Conduct independent research # Form defensible judgements on the basis of critical evaluation of conflicting arguments. # Understand and analyse key conceptual and theoretical arguments # Develop their own argument based on empirical evidence # engage in critical reflection about the past and its connection to the present;
Notes:	Merlin code: 161311