THE UNIVERSITY of EDINBURGH

DEGREE REGULATIONS & PROGRAMMES OF STUDY 2012/2013

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DRPS : Course Catalogue : School of Social and Political Science : Sociology

Undergraduate Course: Statistical Literacy (SCIL07001)

Course Outline

School	School of Social and Political Science	College	College of Humanities and Social Science
Course type	Standard	Availability	Not available to visiting students
Credit level (Normal year taken)	SCQF Level 7 (Year 1 Undergraduate)	Credits	20
Home subject area	Sociology	Other subject area	None
Course website	None	Taught in Gaelic?	No
Course description	The Daily Mail recently informed readers that drinking a glass of wine increased their ¿risk of death¿ by 20%. Even if this were not logical nonsense (sadly we all face a 100% risk) a moment¿s reflection suggests it is implausible: a bottle of wine would be lethal! Not only journalists slip up with numbers. Research shows that doctors rarely interpret the implications of a positive test result correctly (tests contain a margin of error, so that the likelihood of a ¿false positive¿ must be weighed against that of a ¿true¿ result). Several innocent people have been jailed over the years because trials have used faulty statistical reasoning. These are everyday examples of statistical illiteracy: lack of confidence or skill in handling numerical evidence. Yet Hal Varian, of Google, has declared that statistics will be the sexiest science of the 21st century! Most corporations are now recruiting ¿data scientists¿ because they believe that how they harness the exponentially increasing volume of information produced by ¿digital society¿ will determine their success. Governments and public agencies have more and better evidence to guide their decisions than ever before: but only if they can organise and analyse it. Most important of all, citizens in democratic societies now face the same ¿data deluge¿ about the risks and opportunities associated with different behaviours, lifestyles or policies. Most people see statistics as a dark art practised by those who have forsaken real life for the world of numbers. This is a pity. It sustains poor decision-making at every level from individual lifestyles to the top of government. It is also untrue. Statistics is less about numbers than rules for logical thinking about evidence and imagination in applying them. These rules are straightforward to learn, but often counter-intuitive, because evolution has trained us to notice and rationalise whatever catches our attention. Anyone can use these rules to judge the quality of evidence in anything from newspaper stories to scientific papers. Once mastered, the world becomes a more curious and interesting place. The course also looks at the often surprising origin of these rules in gambling, theology or the study of genetics. The skills this course imparts are not only fundamental to logical and critical reflection, but also highly valued by employers as economy and society becomes more ¿data driven¿.

Entry Requirements (not applicable to Visiting Students)

Pre-requisites		Co-requisites	
Prohibited Combinations		Other requirements	None

Additional Costs	None

Course Delivery Information

Delivery period: 2012/13 Semester 1, Not available to visiting students (SS1)						Learn enabled: Yes		Quota: None

Location	Activity	Description	Weeks	Monday	Tuesday	Wednesday	Thursday	Friday
Central	Lecture	Lecture	1-11		13:10 - 14:00			
Central	Lecture	Lecture	1-11				13:10 - 14:00	
First Class	First class information not currently available							
No Exam Information								

Summary of Intended Learning Outcomes

On successful completion of the course, students will be able to critically evaluate the use of numerical data by others, and to use and present it effectively themselves. They will appreciate how data can inform description, analysis, understanding and decision making, and understand why ¿statistical¿ reasoning, and drawing inferences from multiple observations, can yield knowledge that cannot be gleaned from detailed examination of individual experience or case studies. They will appreciate why heuristic biases often distort less formal means of data gathering and processing. They will understand why technical change is continually increasing the range and quality of data available, however they will also be aware of the manifold sources of measurement error, the importance of careful definition, and in particular the implications of this for targets and audits.

Assessment Information

Weekly online multiple choice assessment based on course reading (best 8 results from 10 weeks) 40%; Tutorial participation 10% Open book exam (2 hours) 50%.

Special Arrangements

None

Additional Information

Academic description	Not entered
Syllabus	Not entered
Transferable skills	Not entered
Reading list	Course Text Andrew Dilnot and Michael Blastland 2008 The Tiger That Isnt: Seeing Through a World of Numbers Profile Books. Indicative Bibliography Joel Best 2001 Damned Lies and Statistics: Untangling Numbers from the Media, Politicians and Activists Berkeley, Univ Calif Press. Gerd Gigerenzer 2002 Reckoning with Risk: Learning to Live with Uncertainty, Penguin. Ian Hacking 2001 An Introduction to Probability and Inductive Logic, Cambridge Univ Press David Hand 2008 Statistics: a Very Short Introduction, Oxford University Press Darrel Huff 1991 How to Lie with Statistics Penguin Daniel Kahneman 2011 Thinking Fast and Slow, Penguin Books
Study Abroad	Not entered

Study Pattern	Not entered
Keywords	Statistical Literacy

Contacts

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