

MODULE DESCRIPTOR 2019/20



**CL939 Principles of research methodology and research design**

<b>Registrar:</b> : Dr Elsa João, Senior Lecturer, Department of Civil and Environmental Engineering, level 5, James Weir Building, Tel.: 0141 548 4056; email: <a href="mailto:elsa.joao@strath.ac.uk">elsa.joao@strath.ac.uk</a> .	<b>Taught To (Programme):</b> MSc Environmental Engineering (DL), MSc Hydrogeology (DL), MSc in Sustainability & Environmental Studies (DL)	
<b>Other Lecturers Involved:</b> Dr John Douglas and MSc course leaders.	<b>Credit Weighting: 10</b>	<b>Semester: 1, 2 and 3 (Distance Learning Only)</b>
<b>Assumed Pre-requisites:</b> None	<b>Compulsory/ optional/ elective class</b> Compulsory to: MSc Environmental Engineering (DL), MSc Hydrogeology (DL), MSc in Sustainability & Environmental Studies (DL)	<b>Academic Level: 5</b>

**Class Format and Delivery (hours):**

Lecture	Tutorial	Laboratory	Coursework	Project	Private Study	Total
14	8	6		36	36	100

**Class Aim(s)**

Students will acquire familiarity with, and practice of, research techniques, and examine different ways of, and gain experience in, presenting research results. The class discusses the key principles, and practical exercises, on both quantitative and qualitative research methods, including survey methods, interviewing techniques, use of census data and statistical methods. The class also includes discussion of ethical issues. Finally, there is dissertation-related teaching on choosing a research question and a research method, and writing a research proposal. This is a semester 1 and 2 class but meetings do not happen every week.

**Learning Outcomes**

On completion of the module the student is expected to be able to

- LO1 answer research questions using a variety of different quantitative and qualitative methods
- LO2 evaluate the strengths and weaknesses of different research methods for answering a research question
- LO3 evaluate ethical issues related to a research project
- LO4 choose a research question and a research method and write and present a research proposal

*(UK SPEC suggests no more than 4 learning outcomes per module. Statements must be broad and be syllabus free and link in with the intended learning outcomes on the programme specifications.)*

**Syllabus**

The course will be taught using a combination of lectures, discussions and computer-based exercises.

The module requires the completion of the following parts – draft programme:  
 Semester 1:

1. Introduction to the class, research methods and assignments.
2. Writing, referencing, plagiarism
3. Qualitative Methods 1
4. Qualitative Methods 2
5. Qualitative Methods 3
6. Quantitative methods 1
7. Quantitative methods 2
8. Quantitative methods 3
9. Planning, researching and writing the MSc dissertation
10. Seminar of staff research interests to generate dissertation ideas. Each member of staff will be asked to present one slide for 5 minutes where they outline their research interests and also any dissertation topic ideas for MSc students. In some cases, students may need to apply to work on these topics in a competitive basis based on CV, statement of interest and sometimes interview.

Semester 2:

11. meetings between students and a member of staff to discuss draft dissertation proposal.
12. Project Management (plenary session to all students, 2 hours - lecture and workshop)

### Assessment Criteria

#### Criteria

For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning:

*[Note: Criteria break the LO down into 'teachable' elements but do not become syllabus orientated i.e. no mention of CAD package names, components etc.]*

LO1

C1 How students show an ability to answer research questions using a variety of different quantitative and qualitative methods

LO2

C1 How students show a critical understanding of the strengths and weaknesses of different research methods for answering a research question

LO3

C1 How students show a critical understanding of ethical issues related to a research project

LO4

C1 How competent students are in choosing a research question and a research method

C2 How well written and structured the dissertation proposal is

The standards set for each criterion per Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessments.

### Principles of Assessment and Feedback (<https://www.strath.ac.uk/staff/policies/academic/>)

2. Assignments are routine and evenly distributed throughout the class.
4. Students will have ample opportunities (via multiple projects) to incorporate feedback and improve their performance.
9. University policy: carry out mid-term class assessments and provide feedback to students.
11. Encourage self-motivation in group projects.

### Recommended Reading

- Bryman, A. (2008), *Social research methods*. Oxford; New York: Oxford University Press. **[Strathclyde Main Library D 300.72 BRY]**
- Coffey, A. and P. Atkinson (1996) *Making Sense of Qualitative Data*, chapter 2, London: Sage Publications. **[Strathclyde Main Library D 300.72 COF]**
- Daly F., (1995) *Elements of Statistics*, Addison-Wesley. **[Strathclyde Main Library D 519.5 ELE]**
- Field, A. 2009. *Discovering statistics using SPSS, (3<sup>rd</sup> edition)*, London, Sage Publications Ltd. **[Strathclyde Main Library D 300.2854 FIE, 2000 and 2005 editions also available]**

- Kvale, S. (1996) *InterViews: An introduction to qualitative research interviewing*. London: Sage. **[Strathclyde Jordanhill Library 300.72 KVA]**
- MacEachren, A. (1995) *How maps work: representation, visualization, and design*. New York: Guilford Press, c1995. **[Strathclyde Main Library D 526 MACE]**
- Maddala, G. S. (2001) *Introduction to Econometrics*. Chichester; New York: John Wiley. **[Strathclyde Main Library D 330.0182 MAD]**
- Mauthner, M., Birch, M., Jessop, J. & Miller, T. (eds.) (2002) *Ethics in qualitative research*. London: SAGE. **[Strathclyde Jordanhill Library 174 MAU]**
- Miles, M. and Huberman, A. (1994) *Qualitative data analysis: an expanded sourcebook*. 2nd ed, Thousand Oaks, Calif: Sage. **[Strathclyde Main Library D 300.723 MIL]**
- Monmonier, M. (2005), Lying with maps. *Statistical Science* 20 (3): 215-222. **[Strathclyde Main Library 519.2 Serial plus electronic access]**
- Oppenheim, A. N. (1992) *Questionnaire design, interviewing, and attitude measurement*. London; New York: Pinter Publishers. **[Strathclyde Main Library D 300.72 OPP]**
- Rowntree D. (1981, 2000, 2004) *Statistics without Tears*, Penguin Books. **[1981 and 2000 edition at Jordanhill D 519.5 ROW; 2004 edition at Strathclyde Main Library D519.5 ROW]**
- Sapsford, R. and V. Jupp (1996) *Data Collection and Analysis*, London: SAGE in association with the Open University. **[Strathclyde Main Library D 300.72 DAT, 2006 edition available electronically]**
- Strauss, A. and Corbin, J. (1990) *Basics of qualitative research: Grounded theory procedures and techniques*. London: Sage Publications. **[Strathclyde Main Library D 300.72 STR]**
- Turabian, Kate L. (1996) *A manual for writers of term papers, theses, and dissertations*. Edition: 6th ed. / rev. by John Grossman and Alice Bennett. Chicago: University of Chicago Press. **[Strathclyde Main Library D 802.0 TUR]**

**PLEASE NOTE:**

**Students need to gain a summative mark of 40% / 50% (please delete as appropriate) to pass the module. Students who fail the module at the first attempt will be re-examined during the August diet. This re-examination will consist entirely of exam / coursework / viva (please delete as appropriate).**

**Resit Arrangements**

Assignment
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**Approved**

Programme Director Signature:
Date of Last Modifications:

(Updated 9<sup>th</sup> August 2018)

## Assessment and Feedback Schedule

Class Code	CL986	Class Title	Qualitative and Quantitative Research Methods
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### Brief Description of Assessment

<p><b>Coursework / Submissions deadlines:</b>  <i>This is a 100% continual assessment class. Students will be assessed on the basis of three assignments:</i></p> <p><b>Assignment 1: H&amp;S Quiz</b> (2% final mark)</p> <p><b>Assignment 2: Fill DB entry review of paper</b> (2% final mark)</p> <p><b>Assignment 3: Coursework on quantitative methods</b> (worth 28% of the final grade)</p> <p><b>Assignment 4: Coursework on qualitative methods</b> (worth 28% of the final grade)</p> <p><b>Assignment 5: Write a 2,000 words dissertation proposal</b> (worth 40% of the final grade)</p>
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Indicate in the tables below the Hand-Out (H), Submission (S) and Feedback (F) dates for each lab report/coursework/project and the timing of each Exam/Class Test (E), (T). Include duration of exam in brackets (e.g. E (2)).

### Semester 1

Assessment type (& title)	LOs	Weight (%)	Individual / Group	WK1	WK2	WK3	WK4	WK5	WK6	WK7	WK8	WK9	WK10	WK11	Exam Period
<b>Assignment 1: H&amp;S Quiz</b>	1-4	2	I	H		S			F						
<b>Assignment 2: Fill DB entry review of paper</b>	1-4	2	I	H			S			F					
<b>Assignment 3: Coursework on</b>	1-4	28	I			H			SF						

