DEREE COLLEGE SYLLABUS FOR: : **ES 4443 INTEGRATED METHODS IN ENVIRONMENTAL ANALYSIS II** **3/0/3**	
(Previously: ES 4343 Integrated Methods In Environmental Analysis II) (Updated Fall 2023)	**UK LEVEL: 6** **UK CREDITS: 15**
PREREQUISITES:	ES 1000 Environmental Science: Ecosystems and Biodiversity, ES 1010 Environmental Science: Energy Resources and Pollution MA 2025 Applied Statistics for Sciences ES 3340 Integrated Methods in Environmental Analysis I
CATALOG DESCRIPTION:	This course aims to cover basic methods and techniques needed in environmental studies and management. It includes the discussion of selected social scientific methods and their basic principles and techniques, in order to provide a sound basis for the interdisciplinary inquiry required in environmental studies. It also offers hands-on experience on some of the presented methods via selected project and/or field work.
RATIONALE:	Any systematic and effective environmental study and action requires the knowledge of scientific methodology. Environmental Studies are interdisciplinary, drawing from both natural and social sciences; therefore, their methodology should also be interdisciplinary, often using mixed modes of inquiry. For technical aspects of environmental action, natural scientific methods presented in course ES 3240 Integrated Methods in Environmental Analysis I are discussed. For behavioral and social aspects of environmental practices, social scientific, field-based empirical and text-based interpretive methods are needed; these are discussed in this course. Students will also prepare the proposal for their capstone projects; so this course is a prerequisite to the Environmental Studies Capstone.
LEARNING OUTCOMES:	As a result of taking this course, the student should be able to: 1. Demonstrate knowledge of and apply selected social scientific methods and techniques related to environmental studies such as sampling techniques, interviews and questionnaires 2. Explain and critically assess the underlying methodologies (i.e. theoretical assumptions, capabilities and constraints) of scientific methods and techniques. 3. Identify moral and ethical issues of scientific research and be aware of and apply professional codes of conduct to their environmental research. 4. Demonstrate ability to collect, record, process, analyze, interpret and present data using appropriate qualitative and quantitative methods and techniques. 5. Design and plan their capstone (environmental research) project by preparing their capstone proposal, with minimum guidance and within agreed guidelines.
METHOD OF TEACHING AND LEARNING:	In congruence with the teaching and learning strategy of the college, the following tools are used: • Class lectures, interactive learning (class discussions, group work), video presentations and case studies discussed in class. • Practical problems addressed (e.g. creation of a questionnaire) • Students' projects and presentations • Formative activities (e.g. homework assignments, involvement with on-line tools) which are reviewed in class

<table>
<tr><td></td><td>

Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and/or go over class material.
Use of a blackboard site, where instructors post lecture notes, assignment instructions, announcements, as well as additional online resources.

</td></tr>
<tr><td>ASSESSMENT:</td><td>
Summative:
<table>
<tr><td>Student’s capstone proposal (2,000 - 3,000 words)</td><td>40%</td></tr>
<tr><td>Selected practical exercises</td><td>30%</td></tr>
<tr><td>Critical response to selected essay questions (in class)</td><td>30%</td></tr>
</table>
Formative:
<table>
<tr><td>Critical response to selected questions during the semester and/or engagement with on-line tools</td><td>0%</td></tr>
</table>
The formative questions aim to prepare students for the examination.
Practical exercises test learning outcomes 1, 2, 3 and 4.
The capstone proposal tests learning outcome 1, 2, 3 and 5.
The final examination tests learning outcomes 1, 2 and 3.

Students are required to resit failed assessments in this module.
</td></tr>
<tr><td>INDICATIVE READING:</td><td>
REQUIRED READING:
Kanazawa, M. (2017). Research Methods for Environmental Studies A Social Science Approach. London: Routledge. https://doi.org/10.4324/9781315563671

RECOMMENDED READING:

Montello, D.R. & Sutton, P.C. 2013. An Introduction to Scientific Research Methods in Geography and Environmental Studies. Sage.
Knight, A. & Ruddock, L. 2008. Advanced Research Methods in the Built Environment. Wiley-Blackwell
Selected articles

</td></tr>
<tr><td>INDICATIVE MATERIAL:
(e.g. audiovisual, digital material, etc.)</td><td>REQUIRED MATERIAL: N/A</td></tr>
<tr><td>COMMUNICATION REQUIREMENTS:</td><td>In all presentations using proper English, written or spoken.</td></tr>
<tr><td>SOFTWARE REQUIREMENTS:</td><td>Microsoft Word, Microsoft PowerPoint, Blackboard CMS.</td></tr>
<tr><td>WWW RESOURCES:</td><td>As needed for the selected topic.</td></tr>
<tr><td>INDICATIVE CONTENT:</td><td>

Introduction: Scientific Research in Environmental Studies (Interdisciplinarity & basic steps)
Scientific Methodology: Quantitative and Qualitative Approaches
Selecting the Topic and the Research Method(s)
Data Collection and Analysis:

</td></tr>
</table>

	Social Scientific Methods a. Discussing issues like: sampling, techniques, analysis in each method that will be presented) b. Discussion of selected methods (e.g. Surveys, Interviews, Archives, Case studies, Observations) 5. Presentation and Communication of the Research Results 6. Scientific Research: Researcher and Presentation Ethics