



Module Definition Form (MDF)

Module code: MOD010258	Version: 2 Date Amended: 13/Jun/2024
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1. Module Title
Feasibility and Flood Hydrology Project

2a. Module Leader
Biniam Ashagre

2b. School
School of Engineering and the Built Environment

2c. Faculty
Faculty of Science and Engineering

3a. Level
4

3b. Module Type
Standard (fine graded)

4a. Credits
30

4b. Study Hours
300

5. Restrictions			
Type	Module Code	Module Name	Condition
Pre-requisites:	None		
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:	None		

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

This module presents you with real-world problems that requires the application of engineering principles. Every construction project needs to be feasible, whether it is the cost, the workforce required, or the timescale set. Without reviewing this, a project could quickly fail. Here you will start with the feasibility stage of a built environment project. After an introduction to the project and the definition of the deliverable deadlines you will work in groups using an integrated approach to produce a project plan for your work, organising it for the trimester ahead of you. This includes the identification of key stakeholders and regulators, the production of a topographical survey of the project site, and collection of relevant data though field and laboratory work. You'll use this information to produce a site investigation report which will be the basis for the feasibility study.

Under the wider topic of hydrology and flood risk assessment you'll learn and apply the fundamentals of flood hydrology. You will learn to develop the necessary site-related engineering surveying skills, both through the theoretical understanding and a hands-on practice in the use of surveying instruments as part of your project. You will perform a site investigation that involves a systematic way of gathering information about geological conditions, characteristics of in-situ soil condition, and other environmental factors affecting your study site.

The Live Brief task within your project gives you the opportunity to work with professionals within the Civil Engineering industry. You'll receive guidance, support and feedback from professionals in the industry.

6b. Outline Content

Project planning:

- Time management
- Resource allocation
- Tasks and milestone identifications
- Tracking project progress and the use of the Gantt chart

Feasibility study and flood risk assessment:

- Analysing and presenting sufficient information to determine the suitability of proposed approaches/solutions for a given problem.
- Identification of risks, costs and benefits
- Provision of justifications for a project to advance to its final stage (construction)
- Flood risk assessment and associated regulations
- Interpreting flood maps and the fundamentals of risk and probability

Surveying:

- Principles of linear measurement (direct): detail acquisition, slope and plan distances, accuracy and sources of error and corrections to measurements.
- Principles of levelling: instrumentation (traditional and contemporary), procedures, recording and computation (manual and spreadsheets), accuracy and sources of error, contouring, longitudinal and cross section preparation.
- Setting out

Ground investigation

- Introduction to Engineering Geology
- Ground investigation techniques,
- Description and classification of soils for engineering purposes:
- Compaction of soils
- Water in soils
- Soil stabilisation

Skills:

- Effective teamwork
- Effective communication to non-technical and technical audiences
- Referencing and citation skills
- Technical report writing
- Problem solving
- Effective planning and organisation
- Effective autonomous work

6c. Key Texts/Literature

The reading list to support this module is available at: <https://readinglists.aru.ac.uk/>

6d. Specialist Learning Resources

- Surveying equipment
- Geotechnics lab
- Work room

7. Learning Outcomes (threshold standards)		
No.	Type	On successful completion of this module the student will be expected to be able to:
1	Knowledge and Understanding	Understand the application of flood risk analysis and its application in construction and design projects
2	Knowledge and Understanding	Collect, interpret, and present information using surveys, labs and workshop skills to assess the feasibility of a built environment project.
3	Knowledge and Understanding	Show an understanding of the background to, the need for, and limitations of ground investigation.
4	Knowledge and Understanding	Demonstrate an appreciation of the health and safety requirements and legislations related the use of lab spaces, equipment, and procedures to a construction project.
5	Intellectual, practical, affective and transferrable skills	Use engineering science and mathematics to analyse complex problems and develop engineering solutions to the built environment challenges using integrated approaches and evaluate their environmental and societal impact.
6	Intellectual, practical, affective and transferrable skills	Present and communicate technical concepts effectively to a range of stakeholders through well-constructed arguments developed by critically evaluating technical literature.

8a. Module Occurrence to which this MDF Refers				
Year	Occurrence	Period	Location	Mode of Delivery
2024/5	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	Hours	Learning Outcomes	Details of Duration, frequency and other comments
Lectures	36	1-4	Normally 3 hrs of 12 sessions: However, this should be scheduled in accordance with the project requirements
Other teacher managed learning	36	2,4,5,6	Normally 3 hrs of 12 sessions: However, laboratories, practicals, workshops, field work, scheduled in accordance with the project requirements.
Student managed learning	228	1-6	Group work, autonomous study and individual learning activities.
TOTAL:	300		

9. Assessment for the above Module Occurrence					
Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
010	Coursework	3	20 (%)	Fine Grade	30 (%)
Project planning group report – 1000 words equivalent This element is aligned with the C4 Engineering Council’s AHEP4 Learning Outcomes and JBM’s thread Professionalism and Ethics					
Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
011	Coursework	2,3,4	30 (%)	Fine Grade	30 (%)
Site investigation report (individual report) 1500-word equivalent This Element is aligned with the C12 Engineering Council’s AHEP4 Learning Outcomes. and JBM’s thread Geotechnics					
Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
012	Coursework	1,2,5,6	50 (%)	Fine Grade	30 (%)
Feasibility study (group Report); 2000 words equivalent. This Element is aligned with the C4, C7, C11, C16, and C18 of Engineering Council’s AHEP4 Learning Outcomes and JBM’s thread Design, Environmental Engineering, Professionalism and Ethics Component.					

In order to pass this module, students are required to achieve an overall mark of 40% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7*).

In addition, students are required to:

- (a) achieve the qualifying mark for each element of fine graded assessment as specified above**
- (b) pass any pass/fail elements**

[* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]