BEng (Hons) Civil Engineering – E410 (Under Review)

1.0 Introduction

The aim of the degree programme is to provide students with a sound knowledge and understanding of the subject of Civil Engineering and the potential to practise in a range of contexts, with an awareness of their responsibilities to society and the environment, thus providing the potential for further professional training towards the requirements for registration as Professional Civil Engineers. Graduates should be capable to work in governmental, industrial and commercial organisations worldwide, follow a postgraduate route or apply the skills they have learnt in a range of other careers.

2.0 Objectives

The programme has been designed to enable students to

- solve civil engineering problems in practice by applying fundamental knowledge of mathematics, science, and engineering and by using modern engineering techniques, skills and tools, particularly recognising the role that computers play in engineering;
- identify, formulate and solve civil engineering problems, particularly the planning, design, construction and operation of systems, components or processes that meet specified performance, cost, time, safety and quality needs and objectives;
- obtain a broad education necessary to understand the impact of civil engineering solutions in a global, societal and environmental context consistent with the principles of sustainable development;
- design and conduct experiments and to analyse and interpret data within the various civil engineering disciplines;
- function and communicate effectively both individually and within multidisciplinary teams;
- obtain a solid understanding of professional and ethical responsibility and a recognition of the need for and ability to engage in lifelong learning; and
- experience an academic environment that facilitates and encourages learning and retention.

3.0 General Entry Requirements

As per General Entry Requirements for admission to the University for Undergraduate Degrees.

4.0 Programme Requirements

Credit in Chemistry at SC/ 'O' Level.

2 GCE 'A' Level Passes in Mathematics and one of the following subjects: Physics, Physical Science, Engineering Science, Physics with Chemistry, Design & Technology (Technology).

5.0 Minimum Requirements for Degree Award

For the award of the degree, the following should be met:

(i) Successful completion of 152 UoM credits (equivalent to 608 notional hours credits) as per the programme structure;

(ii) Satisfactory completion of Industrial placements and Vacation Trainings

(iii) Satisfactory performance in each of the Exit Level Outcomes (ELOs) specified against modules in the module specification sheets. To complete the programme of studies, students are required to perform satisfactorily in the following 11 ELOs:

1. ELO1: Problem Solving
2. ELO2: Application of scientific and engineering knowledge
3. ELO3: Engineering Design
4. ELO4: Investigations, experiments and data analysis
5. ELO5: Engineering methods, skills and tools, *incl.* Information Technology
6. ELO6: Professional and technical communication
7. ELO7: Impact of engineering activity

8. ELO8: Individual, team and multidisciplinary working
9. ELO9: Independent learning ability
10. ELO10: Engineering Professionalism
11. ELO 11: Engineering Management

6.0 Programme Duration

	Normal (Years)	Maximum (Years)
BEng (Hons) Degree:	4	7

7.0 Classifications of Awards

The award classification will be based on the CPA (x) at the end of the Programme of Studies as follows:

CPA	CLASSIFICATION	
≥ 70	1st Class	with Honours
60 ≤ x < 70	2nd Class 1st Division	
50 ≤ x < 60	2nd Class 2nd Division	
< 50	No Award	

Note: The general University Regulations pertaining to Exit Points would not be applicable to this programme.

8.0 Pre-Requisite Modules (PR)

A student will be allowed to follow module **y** of which module **x** is a *pre-requisite* (PR) provided he/she has satisfactorily completed module **x** with at least a pass grade.

9.0 Assessment and Pass Requirements

The assessment mode for each module will be based on one or a combination of the following:

- Examination
- Continuous assessment to include (class tests, assignments, practicals and oral presentations).
- Mini projects
- Practical and other reports
- Presentations
- Attendance to seminars

16 notional hours credits modules shall have 3-hour examination papers (except for CIVE1116(1) which will be of 2 hrs duration). 12 or 8 notional hours credits modules shall have 2-hour examination papers.
In order to pass a module a student must obtain an examination mark of at least 40% and a final mark of at least 50%.

Calculation of the final mark: The continuous assessment must account for no less than 30% and for no more than 50% of the final mark, with the exception of modules like design and research projects. Certain modules are assessed on the basis of 100% Continuous Assessment. The specific details and/or formula for the calculation of the final mark are given in the Module Specification Sheet (MSS) of each module.

Students have to retake both continuous assessment and exams in the failed module except in case of Resit Examinations; See provisions for Resit Examinations at Section 10. Students passing failed modules will score maximum marks of 50% in these modules but will have the failed marks not counted in the computation of the CPA.

If the student's CPA is between 40 and 50, he/she fails the year. However, student will be eligible to repeat the year and will maintain credits and marks for individual modules where the mark scored is 50% or above. If the CPA is less than 40, the registration will be terminated.

Rules in Cases of Unsatisfactory Performance of ELOs

The ELOs and assessment criteria are specified against modules in the module specification sheets (MSS).

A student must comply with the subminimum requirements in subdivisions of certain modules. For such modules these specific requirements are given in the MSS of the module. These sub-minima include the achievement of ELOs that are assessed in the module. A sub minimum mark of 50% is required for all assessed elements (relevant questions in an assessment, project or assignment) in which the achievement of exit level outcomes are assessed (for the particular module).

The following rules will apply in cases of unsatisfactory performance of ELOs.

(i) ELOs assessed in the written examination.

A student failing the assessment of an ELO in a written examination will be deemed to have failed the module. The student will have to retake the module next time it is offered. However, a Resit examination may be granted for the module only if a pass mark of at least 50% has been obtained; See the rules for Resit examinations at Section 10(iii).

(ii) ELOs assessed in coursework, e.g., mini-project work.

A student not satisfying an ELO may be given an extension by the lecturer and moderator prior to the written examination to amend and resubmit the coursework for pass mark of 50 % only. In case the student still fails to satisfy the ELO in the re-submission, he/she will be awarded Grade N in the module and will have to do a new coursework in the next academic year, provided he/she has scored a minimum of 50 % in the overall module mark.

In case a student fails the module, that is, scored less than 50 % in the overall module mark, he/she will be awarded Grade F and has to retake the whole module the next time it is offered.

(iii) ELOs (other than ELO 6) assessed in the Final Year Project.

If a candidate fails to obtain a pass mark of 50 % for any ELO (other than ELO 6) in the Final Year Project, the Board of Examiners may consider one of the following:

- For a project/dissertation with possibility of amendments, award the student Grade N in the module and grant the student an extension period of up to 3 months to amend the work related to the ELO, and resubmit for pass mark of 50 % in the ELO;
- For a project/dissertation with recommendations for a new submission, award the student Grade F in the module student will have to undertake a new project in the following academic year.

(iv) ELO 6 assessed in the Design Project and/or Final Year Project.

For a student failing to obtain the pass mark of 50 % for ELO 6 in the Design Project and/or Final Year Project, the Board of Examiners may consider awarding the student Grade N and granting the student an extension period of up to 3 months to amend the components of the work related to this ELO, and resubmit the Design Project and/or Final Year Project for a pass mark of 50 % in the ELO, provided that the student has scored a minimum of 50 % in the overall module mark.

In case a student fails the module, that is, scored less than 50 % in the overall module mark, he/she will be awarded Grade F and has to retake the Design Project and/or Final Year Project the next time it is offered.

(v) ELO 3 assessed in the Design Project.
A student failing ELO 3 will be awarded Grade F in the design project and will have to retake the module the next time it is offered.
The detailed assessment mode for each module is given in the MSS.

10.0 Resit Examinations

If a student obtains a CPA of at least 50 but has not passed all the modules, a Resit examination may be granted for failed modules by the Board of Examiners provided that:

(i) A minimum of 40% has been obtained in continuous assessment.
(ii) A Final mark of at least 40% has been achieved in the failed modules which exclude assessment of ELOs;
(iii) A pass mark has been achieved but the required sub minimum for passing an Exit Level Outcome (ELO) has not been obtained.

Resit examinations do not apply to final year Project/Dissertation/Mini-Project Portfolio/Industrial Training and to modules assessed solely by continuous assessment.

11.0 Duration of examinations

16 NH credits modules shall have **3-hour** examination papers, except for CIVE1116(1) which will be of 2 hrs duration. 12 NH credits and 8 NH credits modules shall have **2-hour** examination papers.

12.0 Termination of Registration

Termination of registration will occur in the following circumstances:

- If the CPA is less than 25 at the end of Semester 1, Level 1.
- If the CPA is less than 40 at the end of an academic year.
- If the student fails to obtain credit in a module which he/she is repeating. This excludes Resit examinations.
- If the student does not pass all the modules for 1st, 2nd and 3rd years in a total of five years.

13.0 Unless otherwise decided by Faculty Board, the following will apply for:

Progression from lower level to higher level

First Year to Second Year
A student should not have failed more than two modules to be able to register for Second Year modules. If any of the failed modules is a Pre-requisite(s) for a Second Year module, then the candidate cannot register for the PR-linked Second Year module until the Pre-requisite(s) is passed.

Second Year to Third Year
A student **must** have passed all prescribed First Year modules. In addition, the student should not have failed more than two modules of the prescribed second year modules to be able to register for Third Year modules. If any of the failed modules is a Pre-requisite(s) for a Third Year module, then the candidate cannot register for the PR-linked Third Year module until the pre-requisite is passed.

Third Year to Fourth Year
A student **must** have passed all prescribed second year modules. In addition, the student should not have failed fail more than two modules of the prescribed **Third Year** modules to be able to register for Fourth Year modules. If any of the failed modules is a pre-requisite for a Fourth

Year module, then the candidate cannot register for the PR-linked Fourth Year module until the pre-requisite is passed.

Note: If a student is not proceeding to the next level, s/he is deemed to repeat the year, even if the CPA $\geq$ 50.

14.0 Registration for Modules in a Higher Year of study for Repeating Students

If a student is repeating a year and the CPA is above 45, the student may be allowed to register for a maximum of two modules per semester from the higher year of study. The student will need to make a request to the Dean of Faculty. The student cannot register for a module of a higher year of study if a timetable clash occurs with a module of a previous year which has not yet been passed and which is prescribed for his or her field of study. Moreover, registration for modules is subject to pre-requisites being met.

15.0 Self-Development (SD)

This refers to directly supervised work in terms of hours/week. It includes practicals, tutorials, seminars, visits, mini-projects, oriented-discussion, coached group-work, presentations and other structured activities associated to enhancing the engineering application abilities and professional and personal attributes of the students. Such supervised work is included in the time-table.

16.0 Programme Plan - BEng (Hons) Civil Engineering Programme Structure

Year 1 Semester 1

Code	Module name	L+SD	UoM credits	Notional hours credits	Pre-requisites
MATH 1101(1)	Mathematics 1	3+2	4	16	
CHE 1103(1)	Chemistry for Engineers	3+2	4	16	
CIVE 1116(1)	Building Construction and Engineering Graphics	3+2	4	16	
CIVE 1119(1)	Professional Communication for Civil Engineers	2+2	3	12	
ELEC 1107(1)	Physics for Engineers 1	3+2	4	16	
	Total		**19**	**76**	

Year 1 Semester 2

Code	Module name	L+SD	UoM credits	Notional Hours credits	Pre-requisites
MATH 1201(1)	Mathematics 2	3+2	4	16	
ELEC 1201(1)	Physics for Engineers 2	3+2	4	16	
MECH 1201(1)	Materials Science	3+2	4	16	
MECH 1204(1)	Mechanics	3+2	4	16	
HIST 1212(1)	History of Mauritius	2+0	2	8	
CIVE 1208(1)	Geoscience	2+0	2	8	
CIVE 1201	Vacation Training-Workshop practice				
	Total		**20**	**80**	

Year 2 Semester 1

Code	Module name	L+SD	UoM credits	Notional Hours credits	Pre-requisites
CIVE 2115(3)	Fluid Mechanics 1	2+2	3	12	
ENGG 2101(3)	Engineering Mathematics 1	3+2	4	16	MATH1101(1) MATH1201(1)
CIVE 2116(3)	MATLAB programming	1+2	2	8	
CIVE 2119(3)	Structural Analysis 1	2+2	3	12	MECH1204(1)
CIVE 2120(3)	Concrete Technology	2+2	3	12	MECH1201(1)
CIVE 2121(3)	Geotechnical Engineering 1	2+2	3	12	
	Total		**18**	**72**	

Year 2 Semester 2

Code	Module name	L+SD	UoM credits	Notional Hours credits	Pre-requisites
CIVE 2235(3)	Introduction to Civil Engineering Design and Problem Solving	1+2	2	8	
CIVE 2223(3)	Fluid Mechanics 2	2+2	3	12	CIVE2115(3)
CIVE 2226(3)	Spatial data acquisition and management	2+2	3	12	
CIVE 2228(3)	Structural Analysis 2	2+2	3	12	CIVE2119(3)
ENGG 2201(3)	Engineering Mathematics 2	3+2	4	16	MATH1101(1) MATH1201(1)
CIVE 2234(3)	Environmental Engineering	2+2	3	12	CHE1103(1)
CIVE 2236(3)	Statistics for Civil Engineers	1.5+1	2	8	
CIVE 2200	Vacation Training-Survey camp				
	Total		**20**	**80**	

Year 3 Semester 1

Code	Module name	L+SD	UoM credits	Notional Hours credits	Pre-requisites
CIVE 3114(5)	Reinforced concrete and Structural Steel Design	3+2	4	16	CIVE2119(3)
CIVE 3124(5)	Highway Engineering	2+2	3	12	
CIVE 3115(5)	Economics for Engineers	2+0	2	8	
CIVE 3117(5)	Hydrology and Water Resources	2+2	3	12	CIVE2223(3)
CIVE 3120(5)	Geotechnical Engineering 2	2+2	3	12	CIVE2121(3)
CIVE 3121(5)	Structural Analysis 3	2+2	3	12	CIVE2228(3)
CIVE 3125(5)	Numerical Methods for Civil Engineers	1.5+1	2	8	ENGG2201(3)
	Total		**20**	**80**	

Year 3 Semester 2

Code	Module name	L+SD	UoM credits	Notional Hours credits	Pre-requisites
CIVE 3204(5)	Design of timber and retaining structures	3+2	4	16	CIVE2119(3)
CIVE 3205(5)	Contract Management and Laws of contract	2+2	3	12	
CIVE 3206(5)	Wastewater Engineering	2+2	3	12	CIVE2234(3)
CIVE 3207(5)	Geotechnical Engineering 3	2+2	3	12	CIVE3120(5)
CIVE 3225(5)	Hydraulic Engineering	2+2	3	12	CIVE2223(3)
CIVE 3226(5)	Traffic Engineering	2+2	3	12	
CIVE 3230	Industrial Training				
	Total		**19**	**76**	

Year 4 Semester 1

Code	Module name	L+SD	UoM credits	Notional Hours credits	Pre-requisites
CIVE 4020Y(5)	Design Project	2+2	3	12	CIVE3114(5) CIVE3204(5)
CIVE 4019Y(5)	Degree project		6	24	
CIVE 4108(5)	Advanced Structural Analysis	2+2	3	12	CIVE3121(5)
CIVE 4115(5)	Professional Practice	3+2	4	16	
ENGG 4102(5)	Sociology for Engineers	2+0	2	8	
	Total		**18**	**72**	

Year 4 semester 2

Code	Module name	L+SD	UoM credits	Notional hours credits	Pre-requisites
CIVE 4020Y(5)	Design Project	2+2	3	12	
CIVE 4019Y(5)	Degree project		6	24	
CIVE 4211(5)	Civil Engineering Software Tools	2+2	3	12	
CIVE 4212(5)	Integrated Infrastructural Development	3+2	4	16	
CIVE 4213(5)	Environmental Assessment and Management	2+0	2	8	
	Total		**18**	**72**	