

**Course Information Form (CIF)**

**Certificate in Engineering (Civil, Architectural and Civil-Architectural) (Level 3)**

This specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

1. **General Information**

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| **Course Title** | Certificate in Engineering (Civil, Architectural and Civil-Architectural) |
| **Qualification** | Certificate |
| **FHEQ Level** | Level 3 |
| **Intermediate Qualification(s)** | N/A |
| **Awarding Institution** | STI Myanmar University |
| **Location of Delivery** | STI Myanmar University (Yangon and Mandalay) |
| **Mode(s) of Study and Duration** | Full Time over 1 year |
| **Professional, Statutory or Regulatory Body (PSRB) accreditation or endorsement** | N/A |
| **Benchmarking** | * QAA Subject Benchmark Statement Engineering (October 2019) * Architecture (September 2010) * Land, Construction, Real Estate and Surveying (October 2019) * QAA FHEQ Level Descriptors |
| **Other External Reference Points** | * ISCED Qualifications Framework (2011) * Myanmar Engineering Council Guideline for Graduate Attributes and Professional Competencies, (2018) * Myanmar Engineering Council Guideline for International Engineering Alliance: Educational Accords (2018) * Frameworks for Higher Education Qualifications (FHEQ) (2014) * Accreditation of Higher Education Programmes: UK Standard for Professional Engineering Competence. Third edition. (2014) * Joint Board of Moderators Guidelines for Developing Degree Programmes (Version 2 Revision 1 - March 2020) * SEEC Level Descriptors (2016) |
| **Entry Month(s)** | February, June and October |

1. **Course descriptor**

Engineering is a key area to support national development generally. The foundation certificate in Engineering program prepares the students with the fundamentals engineering science subjects such as mathematics, physics, chemistry, geology, practical skills for engineers, fundamentals of drawing and sketching, information technology fundamentals, Introduction to Electronics, English, Introduction to Programming, fundamental of computer studies for the matriculated students who want to pursue their studies on Electronics and IT Engineering.

The Foundation Certificate year (Level 3) introduces students to the essential skills, knowledge and attributes required for engineers. The course helps students develop competence in the study of mathematics, mechanics, materials, construction processes, conceptual and drawing design. A professional approach to engineering is encouraged from the outset, including building relationships as an individual and as a member of a team, such as in undertaking a supervised group project on a negotiated topic. The four core threads of design, sustainability, health and safety risk management and professionalism and ethics are embedded within the course.

The STI MU Foundation Certificate in Engineering (Level 3) consists of 15 credit units and 7.5 credit units making a total of 120 academic credits for the course. The Foundation provides the three years of full-time study which culminates in the degree of BEng (Hons) Civil/Architectural and Electronic / Computing Database Engineering (Top-up) at Level 6, awarded by the University of Bedfordshire, UK.

1. **Educational Aims of the Course**

This course aims to achieve the following for its students:

* To lay the foundations for becoming an engineer who is practical, articulate, numerate, literate, creative and flexible
* To Introduce the concepts and principles of engineering, and to help students understand how to evaluate and interpret these creatively
* To enable students to present, evaluate and interpret statistical data in order to understand the performance of systems and components
* To introduce the wider professional responsibilities of engineers, including code/s of conduct, working within an ethical framework, health and safety, risk management, environmental, sustainability and societal issues
* To provide an educational foundation for a range of studies directly relevant to architectural engineering, including commerce, enterprise, marketing, innovation and creativity
* To acquire technical proficiency in design skills, allowing students to look for safe, economic and creative solutions to practical problems
* To develop a range of transferable skills, techniques and personal attributes essential for successful performance in the professional workplace, and which require the exercise of some personal responsibility

**4. Course Learning Outcomes**

By the end of the course, students should be able to:

LO1: Identify the basic scientific principles that underpin relevant engineering technologies and systems

LO2: Understand the use of different materials, processes and techniques that apply to architectural design and building construction

LO3: Select and apply mathematical and statistical methods which support the modelling and analysis of architectural and engineering problems

LO4: Be aware of architectural culture, theory and design and how these affect architectural judgements

LO5: Apply engineering analysis to solve practical architectural and engineering problems, and recommend solutions

LO6: Be aware of constraints including environmental and sustainability limitations; legal, ethical, health, safety, hazard and risk issues; intellectual property; codes of practice, protocols and standards

LO7: Generate design proposals applying design techniques, and show creativity and originality in work produced

LO8: Communicate design proposals effectively using different methods and media, including orally, verbally and visually

LO9: Understand the role of the architectural engineer in the construction industry

LO10: Work effectively as a member of a multi-disciplinary team, recognizing factors that affect individual and team performance

1. **Teaching and Learning Methods**

Acquisition of core knowledge is through a mixture of lectures, presentations, demonstrations, group work and self-directed study

Analytical thinking skills are developed through discussion, quizzes and test questions.

Practical skills are developed through the use of case studies, the use of simulation software and fieldwork experience

Transferable skills are developed through assignments and presentations, particularly in the group activities.

**6. Assessment Methods**

Assessment activities provide major opportunities for learning. Assessment criteria, expressed as Threshold expectations, are linked to unit learning outcomes and AHEP3 IEng Learning Outcomes, and stated for students in unit information forms (UIFs).

Assessment methods vary for different units, but the course will include:

* Unseen mathematical tests
* Case studies or relevant workplace scenarios
* Practical assessments
* Assignment reports
* Laboratory reports
* Oral presentations
* Group project work
* Closed book invigilated examinations
* In-class assessments

Each unit will include a variety of methods from the list above. The number of assessments varies from unit to unit.

1. **Course Structure**

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| The Units which make up the Course are: | | | | |
| **Unit Code** | **Level** | **Credits** | **Unit Name** | **Core or option** |
| BE 1101 | 3 | 15 | Mathematics I | Core |
| BE 1102 | 3 | 15 | Physics | Core |
| BE 1103 | 3 | 15 | Chemistry | Core |
| CE 1105 | 3 | 7.5 | Information Technology Fundamentals | Core |
| BE 1105 | 3 | 15 | AutoCAD Basics | Core |
| BE 1108 | 3 | 15 | Practical Skills for Engineers | Core |
| BE 1107 | 3 | 7.5 | Geology | Core |
| BE 1104 | 3 | 7.5 | Fundamental of Drawing and Sketching | Core |
| BE 1106 | 3 | 15 | English | Core |

**8. Support for Students and their Learning**

Student progression on the course is supported both by teaching faculty, support services and learning resources at STI MU and includes:

* Induction sessions introducing students to the subject, higher level skills, learning resources
* Course and unit handbooks available in print and electronic format
* Google Classroom and Learning Management System portal (LMS) for online learning and support
* Mandatory weekly English language study program (zero credit rated)
* Mathematics: additional support provided throughout year
* Personal Academic Tutor (PAT) scheme
* Field trips, site visits, STI visiting speaker program, visits to Myanmar Engineering Society events, employer links
* Study visit abroad programme annually
* Written/verbal assessment feedback
* Access to support services including help for dyslexia, mobility, counselling
* Library and librarian support
* Opportunities for taking part in University Student Council, Staff-Student Liaison Committee, club activities and volunteer works at the school events
* Semester-wise Parent Conference to report and give feedback on the progress of student performance

* Supplementary sessions for critical thinking, presentations, academic writing, referencing and plagiarism

**9. Programme Resources**

* IT resources including Rhino, V-Ray
* Design Studio including AutoCAD, SketchUp
* Materials, Hydraulics, Soil and Light Structures Laboratories
* Employer links providing specialist lectures, site visits and internships
* Workshops
* Google Classroom and Learning Management System (LMS)
* Subscription to Emerald Journals
* International links for study visits

**10. Criteria for Admission to Level 3**

* Successful completion of High School Matriculation (or) GCE ‘O’ Level
* Certificate holders from other relevant disciplines will be considered for entry to Level 3 based on individual qualifications.
* Applicants with relevant work experience may be considered on a case-by-case basis for Recognition of Prior Learning (RPL). This might include applicants with complete or partially complete other professional qualifications.
* IELTS (4.5 overall, 4 individual) or equivalent qualifications

**11. Completion of the Award**

All units studied must be completed with a minimum grade of a Pass (40%) in order to complete the Diploma award.

**12. Progression to Levels 4, 5 and 6**

Progression onto the Diploma in Engineering (Level 4) normally requires the completion and passing of all Foundation (Level 3) units.

Progression onto the BEng (Hons) Civil/Architectural and Electronic / Computing Database Engineering (Top-up – Level 6), awarded by the University of Bedfordshire, will also normally include the completion and passing of all Foundation units at Level 3.

**13. Administrative Information**

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| **Faculty** | Engineering |
| **Course Coordinator:**  **Name** |  |
| **Course Coordinator: Signature** |  |
| **Date** | 03 May 2021 |