University of Bedfordshire

Unit Information Form (UIF)

(The UIF provides the definitive record of the designated Unit)

SECTION A

General Unit Information

Unit Name	Architectural Engineering Project
Unit Code	STI025-3
Level	6 FHEQ
Credit Value	30
Location(s) of Delivery	Off Campus, STI Myanmar University (Yangon and Mandalay)
Period(s) of delivery	30 weeks (Semester 1 & 2)
Pre-requisites or Restrictions	
Aims and Relevance	This unit aims to provide students with the capstone to their undergraduate studies in architectural engineering. The unit provides the opportunity for individual independent research and critical analysis, undertaken under academic supervision, and the drawing of appropriate conclusions from these activities.

The project can be analytical, experimental or based on topics of computer modelling. All types of project will develop students' ability to think independently and allows students to build upon and further develop and apply their creativity, skills and knowledge gained from prior studies. Wider engineering solutions inevitably impact the environment, health and safety, as well as efficiency of production, quality and costs, within their work students need to be cognisant of this and demonstrate their awareness and implementation of these wider engineering responsibilities. Students will plan and implement a comprehensive study in their project through research, project definition, problem-solving, drawing reasoned conclusions and making recommendations, inclusive of wider engineering responsibilities. |
| Syllabus Content | 1. Project process - getting started

2. Research using academic sources

3. Referencing and plagiarism

4. Project management

5. Project management techniques

6. Report writing

7. Oral and poster presentation

   Student directed work includes |

	8. Confirming project title and scope
	9. Confirming nature of physical or conceptual artefact
	10. Confirming appropriate project methodology
	11. Devising and confirming project plan
	12. Carrying out a critical literature review
	13. Identifying ethical and social impact of the proposal
	14. Identifying wider engineering impact of proposal
	15. Identifying requirements for artefact as appropriate
	16. Defining artefact specification as appropriate
	17. Performing appropriate design activity on artefact
	18. Developing physical/conceptual artefact
	19. Developing wider engineering solutions
	20. Performing appropriate evaluation or testing
	21. Documenting the artefact and/or the project activity, leading to final project report
	22. Presenting the project in a viva and answering examiners' questions

Learning outcomes

On completion of this unit you should be able to:

1. Demonstrate the following knowledge and understanding

   - Identify an interesting engineering problem/research question, and undertake thorough investigation of this through the application of advanced problem-solving skills, research methods, technical knowledge and understanding of professional and ethical standards.

2. Demonstrate the following skills and abilities

   - Plan and manage a research project, and communicate the project findings and wider engineering impact to a select audience.

PSRB outcomes

Indicate any specific Professional, Statutory or Regulatory Body (PSRB) requirements met by this unit.

UK Standard for Professional Engineering Competence (UK-SPEC): AHEP3 IEng Learning Outcomes:

SM2i, EA3i, EA4i, D2i, D6, EL1, EL2, EL3i, EL5i, EL6i, P4i, P6i, P11i, G1, G2, G3i

Joint Board of Moderators (JBM) Core Threads - Primary Outcomes (assessed and evidenced):

Design, Sustainability, Health and Safety Risk Management, Professionalism and Ethics.

Summary learning hours

	Scheduled	Guided	Independent	Autonomous	Placement	Total
Hours	56	68	146	30	-	300
Percentage	18.67%	22.67%	48.66%	10%	-	100%

Approach to learning

This unit allows students to bring together the learning from all other areas of the program. They will be able to apply their knowledge and skills in examining an architectural engineering topic of particular interest. Lectures will introduce the various elements of the unit, and individual supervisions will guide the students through their project work. All practical and research work will be undertaken by students individually, based on an agreed research topic or project title. Students will be investigating a problem, and will recommend possible solutions or new approaches to this problem. The skills developed will help with preparation for the professional workplace, including project management, problem solving, investigation and communication skills.

The following specific elements are included:

- **Lectures** which introduce research methodologies, project management, design discussion, design development, preparing a literature review
- **Supervisions** which give students the opportunity to present updates on their work and to discuss any problems encountered
- **Students' self-directed study**

Learner development

This Unit particularly focuses on the development of your abilities in the following areas:

Enquiry	You will develop your enquiry skills by undertaking a structured piece of research, demonstrating problem-solving skills and drawing reasoned conclusions. This may involve investigating areas where there is uncertain of incomplete information.

You will work on an interesting topic as an independent project from the beginning to the end. Students are required to present and analyse data, suggest novel solutions and present their ideas in a professional manner. |
Contextual understanding	You will independently examine data, as well as technical and non-technical literature, to arrive at solutions to a problem. Whatever the chosen subject for research, you will consider a range of ethical, commercial, and cultural contexts of the research subject.
Collaboration	You will work independently, guided by a supervisor. There will be opportunities to share and discuss your work with different audiences.
Enterprise	By researching a topic of interest to you, you should develop your ability to innovate, evaluate and propose solutions.

Assessment summary

No	Assessment Method Code[1]	Learning outcome(s)	Weight %	Submission week	Length (of exam)	Exemption from Simplified Marking Scheme approved[2]
1	WR-I	1 & 2	20	13		
2	PJ-DIS	1 & 2	50	25		
3	PR-OR	1 & 2	20	29	-	
4	PR-VIV	1 & 2	10	30		

---

[1] See the UIF Guide for permissible codes

[2] Exemptions can only be granted by TQSC. The types of assessment task that can request an exemption are detailed in Chapter 8 of the Quality Handbook

Assessment details

There are 4 assessment points

Assessment 1. Interim report (20%) The Interim report will consist of three sections:

1. Project proposal and project management plan
2. An initial literature review
3. Self-reflection exercise
4. Initial Project Log book

Assessment 1 should involve approximately 20 hours for preparation and 4 hours for completion (in total), with a maximum word count of 3000 words.

Assessment 2: Dissertation/Project Report and Project Log (50%)

Dissertation / Project Report. A research report with a maximum word count of 8000 words. The report should be well structured, and will include project methodology, data analysis, discussion, conclusions and reference list. Calculations will be included in an Appendix to the report.

Project Log. Students are also required to submit a Project Log recording all dates and outcomes of supervision meetings, records of research and other activity undertaken, sketch books, photographic records of site visits and any models created.

Assessment 2 should take approximately 40 hours for preparation and 12 hours for completion, a maximum word count of 8000 words. The word count should exclude references/figures/tables and should be adhered to strictly. Summarised data may be included in the results section of the dissertation/report, but all extended calculations should be inserted into appendices. The report should be well referenced according to Harvard referencing style.

There is no word count requirement for the Project Log

Assessment 3: Oral Presentation (20%). A fifteen (15) minute individual presentation giving an evaluation of the outcomes of the project, including conclusions drawn from the central hypothesis or research question/s. The presentation will be given to an audience of peers and invited members of the Industry Advisory Board and other industry organisations. All presentations will be critiqued and recorded for internal and external moderation.

Assessment 4. Viva (10%) A fifteen (15) minute viva to examine the process, findings and conclusions from the project. The viva will be conducted by a panel of two or more examiners, and will exclude the student's own supervisor. All vivas will be recorded for internal and external moderation.

Threshold expectations

In order to pass Assessment 1 you will need to

- Plan and carry out a personal programme of work. (contributing to G3i)
- Define the problem identifying any constraints including environmental and sustainability limitations; ethical, health, safety, security and risk issues; intellectual property; codes of practice and standards. (contributing to D2i)
- Identify management techniques which may be used to achieve engineering objectives. (contributing to EL3i)
- Select and apply information from technical and other literatures, including appropriate codes of practice and industry standards. (contributing to P4i, P6i)
- Plan self-learning and improve performance, as the foundation for lifelong learning/ CPD. (contributing to G2)

In order to pass Assessment 2 you will need to

- Apply knowledge and understanding of mathematics and an awareness of statistical methods necessary to support the application of key engineering principles. (contributing to SM2i)
- Use the results of engineering analysis to solve engineering problems and to recommend appropriate action. (contributing to EA3i)
- Apply an integrated or systems approach to engineering problems through know-how of the relevant technologies and their application. (contributing to EA4i)
- Demonstrate knowledge and understanding of the commercial, economic and social context of engineering processes. (contributing to EL2)
- Be aware of relevant legal requirements governing engineering activities, including personnel, health and safety, contracts, intellectual property rights, product safety and liability issues. (contributing to EL5i)
- Be aware of risk issues, including health and safety, environmental and commercial risk. (contributing to EL6i)
- Demonstrate an awareness of quality issues and their application to continuous improvement. (contribution to P11i)
-

In order to pass Assessment 3 you will need to:

- Communicate work to a select audience (contributing to D6)
- Understand the need for a high level of professional and ethical conduct in engineering (contributing to EL1)
- Apply skills in problem solving, communication, information retrieval, working with others and the effective use of general IT facilities. (contributing to G1)

In order to pass Assessment 4 you will need to:

- Explain the planning, process and conclusions from carrying out a personal programme of work. (contributing to G3i)
- Demonstrate knowledge and understanding of the commercial, economic and social context of engineering processes. (contributing to EL2)
- Explain the work to a technical audience (contributing to D6)

SECTION B

Recommended Reading

Core text – this unit is supported by the following core text:
Cottrell, S. (2014). *Dissertations and Project Reports: A Step by Step Guide (Macmillan Study Skills).* New York, NY: Palgrave Macmillan.

Emden, J. van, & Becker L. (2019). *Writing for Engineers (Macmillan Study Skills).* 4th ed. London: Red Globe Press.

American Institute of Architects. The Architecture Student's Handbook of Professional Practice, 15th Edition. Wiley, 2017

Guided reading – the following is expected reading for this unit. Details of what to read and when will be provide in the BREO site, on Google Classroom, or LMS. .

Billingsley, J.T. (2017). *So What? : Effective Writing for Engineers.* 1st ed. Create Space Independent Publishing Platform. ISBN: 13: 978-1541246805

Greetham B. (2009). *How to Write your Undergraduate Dissertation.* New York, NY: Palgrave Macmillan, ISBN-13: 978-0230218758

McMillan. K. and Weyers J. (2007). *How to Write Dissertations and Project Reports (Smarter Study Guides).* Place of publication: New York, NY: Prentice Hall, ISBN-13: 978-0273713586

Smith, N.J. (2007). *Engineering Project Management.* 3rd ed. Chichester, UK: Wiley-Blackwell.

Ryan Hansanuwat. Inside: Architecture and Design: A guide to the practice of architecture. Paperback. 2014. CreateSpace Independent Publishing Patform. 2014

Independent study – to receive high grades you will need to demonstrate your wider reading. The following resources provide useful background reading for the material in this unit. This is not an exhaustive list and students should read widely from the variety of journals available in the Learning Resources Centre

CIOB (2014). *Code of Practice for Project Management for Construction Development.* 5th ed. Chichester, UK: Wiley-Blackwell.

Moriarty, G. (2008) *The Engineering Project: Its Nature, Ethics and Promise.* Philadelphia, PE: University of Pennsylvania Press.

Project Management Institute (2017). *A Guide to the Project Management Institute Body of Knowledge. (PMBOK Guide).* 6th ed. Newtown Square, PA: Project Management Institute.

Once the unit has been approved this list can be replaced with a link to the online reading list.

Once initial approval of the unit has been given, the Unit Co-ordinator may propose changes to this section to the Academic Liaison Librarian

Equality Impact Assessment

Question	Y/N/NA	Additional anticipatory adjustments/actions if necessary
Learning materials will be made available in advance of sessions for students to adapt as appropriate?	Y	
The approach to teaching and learning is sufficiently flexible to enable all students to succeed?	Y	
The approach to group work takes account of the needs of students with disabilities and from diverse backgrounds?	Y	
The approach to practical work takes account of the needs of students with disabilities?	Y	
Students with a protected characteristic[3] have an equal opportunity to achieve the learning outcomes?	Y	
The assessment tasks provide all students with an equal opportunity to succeed?	Y	
Any other aspects of the unit that might pose potential challenges from an equality or diversity perspective have been considered?	NA	

---

[3] Age, Gender reassignment, Marriage and civil partnership, Pregnancy and maternity, Race, Religion and belief, Sex, Sexual orientation

SECTION C

Administrative Information – Faculty completion	
Faculty	**Engineering**
Portfolio	
School/Department	STI Myanmar University/Department of Civil Engineering
Unit Co-ordinator	U Myo Min Hlaing
Version Number	
Approved by	
Date of approval (dd/mm/yyyy)	

Shared Units – Indicate below all courses which include this Unit in their diet	
BEng (Hons) Civil Engineering (Top-Up)	

	Name	**Date**
Form completed by	U Myo Min Hlaing	
Signature of Chair of Faculty TQSC *to confirm the accuracy of information presented*		

Unit Updates – ensure that the revised UIF is given a new version number each time a change is made		
Date	**Nature of Update**	**FTQSC Minute Ref:**

Administrative Information – Academic Registry completion	
JACS / HECoS code (KIS)	