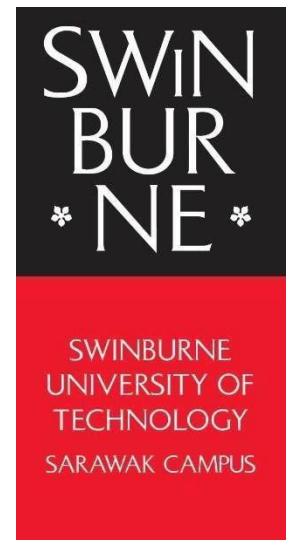


Swinburne University of Technology
Sarawak Campus
Malaysia



2022/2023 Swinburne Sarawak International Mobility Program

International Research Experiences
Faculty of Engineering, Computing and Science



Faculty of Engineering, Computing and Science

Unit Outline

IRE40001

International Research Experiences in Engineering

Semester 2, 2022/ Semester 1, 2023

Please read this Unit Outline carefully. It includes:

PART A Unit summary

PART B Your unit in more details

PART A: Unit Summary

Unit Code(s)	IRE40001		
Unit Title	International Research Experiences in Engineering		
Duration	18 weeks		
Total Contact Hours	70 hours		
Requisites:			
Pre-requisites	Minimum 300 Credit Points or completion of three year of full-time undergraduate engineering study or equivalent.		
Co-requisites	None		
Concurrent pre-requisites	None		
Anti-requisites	None		
Assumed knowledge	None		
Credit Points	25		
Campus/Location	Sarawak		
Mode of Delivery	Blended		
Assessment Summary	Assessment	Individual or Group	Weighting
	Research Plan	Individual	10%
	Poster Presentation	Individual	10%
	Oral Presentation	Individual	10%
	Research Paper	Individual	10%
	Final Report	Individual	50%
	Workbook	Individual	10%

Aims

This unit of study aims to introduce you to engineering research through planning and managing an innovative engineering research project, using research methods and reflecting on broader professional issues related to the project.

Unit Learning Outcomes

Students who successfully complete this Unit should be able to:

1. Plan and manage an innovative engineering research project, using project management processes and tools, and self-management skills, within technical, budgetary, risk and time constraints (K1, K2, K3, K4, S1, S2, S3, S4, A2, A3, A4, A5, A6)
2. Research a complex problem within given constraints, using knowledge and skills developed during the course by formulating research questions, appraising current literature and developments, and applying research principles and methods to generate, evaluate and justify innovative solutions (K1, K2, K3, K4, S1, S2, S3, A2, A3, A4)

3. Apply effective research methods, practices, principles and technological tools to implement a complex engineering project work; with data acquisition, data analysis, interpretation and synthesis (K3, K4, S1, S2, S3, A2, A3, A4)
4. Apply problem-solving methodologies to generate, evaluate and justify innovative solutions (K1, K2, K3, K4, S1, S2, S3, A3)
5. Demonstrate effective professional written and oral communication to a variety of audiences through proposals, reports, documentation and presentations (A2, A4)
6. Reflect on professional engineering practice and its impact on the project, including safety, ethical, legal, social, cultural and sustainability considerations, along with standards and codes of practice (A1, A2, A4, K5, K6, S4)
7. Demonstrate professionalism, integrity, ethical conduct and professional accountability in all aspects of project work, including teamwork (when appropriate and applicable), dealing with stakeholders and demonstrating a professional image (K5, K6, S4, A1, A2, A5, A6)

Graduate Attributes

This unit may contribute to the development of the following Swinburne Graduate Attributes:

- Communication skills
- Teamwork skills
- Digital literacies

Content

Research

- The principles of engineering research
- Defining the research problem
- Reviewing the literature
- Research methods and methodologies
- Ethics and plagiarism
- Planning a research project
- Communicating research outcomes
- The roles of students and supervisors

The Engineering Profession

- The Profession of Engineering
- Issues associated with professional engineering practice, including safety, ethical, legal, social, cultural and sustainability considerations
- Reflection and self-review practices

Key Program Outcomes (Swinburne Engineering Competencies) for this Unit of Study

This unit will contribute to your attaining the following Program Outcomes (Swinburne Engineering competencies):

- K1 Basic Science:** Proficiently applies concepts, theories and techniques of the relevant natural and physical sciences.
- K2 Maths and IT as Tools:** Proficiently uses relevant mathematics and computer and information science concepts as tools.
- K3 Discipline Specific:** Proficiently applies advanced technical knowledge of the specific discipline within that context.
- K4 Emerging Disciplinary Trends:** Interprets and applies current or emerging knowledge from inside and outside the specific discipline.

- K5 Practice Context:** Discerns and appreciates the contextual factors affecting professional engineering practice.
- K6 Professional Practice:** Appreciates the principles of professional engineering practice in a sustainable context.
- S1 Engineering Methods:** Applies engineering methods in practical applications.
- S2 Problem Solving:** Systematically uses current or emerging knowledge and research methods to undertake independent research in solving complex engineering problems and as preparation for research higher degrees.
- S3 Design:** Systematically uses engineering methods in design.
- S4 Project Management:** Systematically uses engineering methods in conducting and managing project work including finance.
- A1 Ethics:** Values the need for, and demonstrates, ethical conduct and professional accountability.
- A2 Communication:** Demonstrates effective communication to professional and wider audiences.
- A3 Entrepreneurial:** Appreciates entrepreneurial approaches to engineering practice.
- A4 Information Management:** Demonstrates seeking, using, assessing and managing information.
- A5 Professional Self:** Demonstrates professionalism.
- A6 Management of Self:** Demonstrates self-management processes.

PARTB: Your unit in more details

Learning and Teaching Structure

Activity	Total Hours	Hours per Week	Teaching Period Weeks
Lectures	18 hours	2 hours	Weeks 1 - 9
Workshops/Seminars	18 hours	1 hour	Weeks 1 - 18
Supervisor Meetings	18 hours	1 hour	Weeks 1 - 18
Online Modules	16 hours	2 hours	Weeks 1 - 16

Other non-scheduled learning activities including independent study, research and development activities & assessments (approximately 229 hours)

Week by Week Schedule

Week	Week Beginning	Teaching and Learning Activity	Student Task or Assessment
1		<ul style="list-style-type: none"> Lecture – Unit Introduction (Unit outline & assessment requirements) Research Seminar Supervisor meeting 	Research module 1 Workbook Research Plan
2		<ul style="list-style-type: none"> Lecture - Technical Resources & Lab safety Research Seminar Supervisor meeting 	Research module 1 Workbook Research Plan
3		<ul style="list-style-type: none"> Lecture - Developing Effective Strategies for Undergraduate Research, Using EndNote for Harvard Referencing Research Seminar Supervisor meeting 	Research module 2 Workbook Research Plan
4		<ul style="list-style-type: none"> Lecture - Literature Review Research Seminar Supervisor meeting 	Research module 2 Workbook Research Plan
5		<ul style="list-style-type: none"> Lecture - Writing Research Proposal/Plan Research Seminar Supervisor meeting 	Research module 3 Workbook Research Plan
6		<ul style="list-style-type: none"> Lecture - Statistics & Its Applications in Research (1) Research Seminar Supervisor meeting 	Research module 3 Workbook Research Plan
7		<ul style="list-style-type: none"> Lecture - Statistics & Its Applications in Research (2) Research Seminar Supervisor meeting 	Research module 4 Research Plan Submission Workbook
8		<ul style="list-style-type: none"> Lecture - Professional Writing Research Seminar Supervisor meeting 	Research module 4 Research activities Project development Workbook
9		<ul style="list-style-type: none"> Lecture - Writing Good Research paper Research Seminar Supervisor meeting 	Research module 5 Research activities Project development Workbook

10		<ul style="list-style-type: none"> • Research Seminar • Supervisor meeting 	Research module 5 Research activities Project development Workbook
11		<ul style="list-style-type: none"> • Research Seminar • Supervisor meeting 	Research module 6 Research activities Project development Workbook
12		<ul style="list-style-type: none"> • Research Seminar • Supervisor meeting 	Research module 6 Poster Presentation Research activities Project development Workbook
13		<ul style="list-style-type: none"> • Research Seminar • Supervisor meeting 	Research module 7 Research activities Project development Workbook
14		<ul style="list-style-type: none"> • Research Seminar • Supervisor meeting 	Research module 7 Research activities Project development Workbook
15		<ul style="list-style-type: none"> • Research Seminar • Supervisor meeting 	Research module 8 Research activities Project development Workbook
16		<ul style="list-style-type: none"> • Research Seminar • Supervisor meeting 	Research module 8 Research activities Project development Workbook
17		<ul style="list-style-type: none"> • Research Seminar • Supervisor meeting 	Research Paper Submission Workbook Submission
18		<ul style="list-style-type: none"> • Research Seminar • Supervisor meeting 	Oral presentation Final Report Submission

Assessment

a) Assessment Overview

Tasks and Details	Individual or Group	Weighting	Unit Learning Outcomes that this assessment task relates to	Assessment Due Date
Research Plan	Individual	10%	1, 2, 3, 4	Week 7
Poster Presentation	Individual	10%	1, 2, 3	Week 12
Oral Presentation	Individual	10%	1, 2, 3	Week 18
Research Paper	Individual	10%	1, 2, 3, 4	Week 17
Final Report	Individual	50%	1, 2, 3, 4	Week 18
Workbook	Individual	10%	1, 2, 3, 4, 5, 6, 7	Week 17

b) Minimum requirements to pass this Unit

As the minimum requirements of assessment to pass the unit and meet all Unit Learning Outcomes to a minimum standard, a student must achieve:

- An aggregate mark for the unit of 50% or more

c) Examinations

There is no examination in this unit.

d) Submission Requirements

Assignments and other assessments are generally submitted online through the Canvas assessment submission system which integrates with the Turnitin plagiarism checking service.

Please ensure you keep a copy of all assessments that are submitted.

ALL submissions must be submitted to the Canvas assignment in pdf format.

e) Extensions and Late Submission

Late Submissions - Unless an extension has been approved, late submissions will result in a penalty. You will be penalised 10% of your mark for each working day the task is late, up to a maximum of 5 days. After 5 working days, a zero result will be recorded.

You need to obtain approval for late submission from the convenor, stating the reason along with any factual evidence, at least one day before the due date of submission, in order to avoid this penalty.

f) Referencing

To avoid plagiarism, you are required to provide a reference whenever you include information from other sources in your work. Further details regarding plagiarism are available in Section C of this document.

Referencing conventions required for this unit are: IEEE style

Helpful information on referencing can be found at

<https://www.swinburne.edu.my/library/referencing>

g) Groupwork Guidelines

There is no groupwork in this unit.

Required Textbook(s)

Research publications and other materials suggested by the project supervisor.

Recommended Reading Materials

The Library has a large collection of resource materials, both texts and current journals. Listed below are some references that will provide valuable supplementary information to this unit. It is also recommended that you explore other sources to broaden your understanding.

Online Databases

<https://www.swinburne.edu.my/library/databases/databases-a.php>

eBooks

<https://www.swinburne.edu.my/library/databases/ebooks.php>

Online Magazines

<https://www.swinburne.edu.my/library/search/magazines.php>

Research publications and other materials suggested by the project supervisor.

Other information

a) Project Details

- Individual project
- The project title will be proposed by the supervisors
- Project timeline
 - Engineering:
 - Week 4 - Project proposal/ Research plan
 - Week 7 - Progress report/ Poster presentation
 - End of semester – Oral presentation, final report, research paper and workbook



b) Fees

- Unit fee: RM10,000- Does not include, flight, transport, Visa, living costs

c) Hubridy's Off-Campus Accommodation

Hubridy Company is a start-up founded by a Swinburne alumnus and is supported by the Swinburne Innovation Malaysia Sdn. Bhd. This accommodation options are tailored for Swinburne's students and staff members. Booking for accommodation can be done through its website at www.hubridycompany.com.

Accommodation options:



Room type	Maximum occupancy	Monthly rental per pax	Description
72 Residences			
Sharing with attached bathroom	4	RM950.00	<ul style="list-style-type: none"> Fully furnished 100 mbps Unifi (Wifi) Room comes with AC Room comes with bed and mattress Room comes with wardrobe and a desk 
Sharing without attached bathroom	2	RM850.00	<ul style="list-style-type: none"> Fully furnished 100 mbps Unifi (Wifi) Room comes with AC Room comes with bed and mattress Room comes with wardrobe and a desk 



Other amenities included:

- New building
- Gymnasium
- Swimming pool
- 24 hours security with CCTV surveillance
- Located in Jalan Song
- Distance: 3KM/6 mins to Swinburne Sarawak

Remark:

- Utilities charges included
- Free shuttle service available as per schedule
- Rental price shown is applicable for 1-year tenure and above excluding final year student
- 2-month tenancy deposit and 1st month tenancy rental upon entering the tenancy

Kenny Hill			
Single with attached bathroom	1	RM1,350.00	<ul style="list-style-type: none"> • Fully furnished • 100 mbps Unifi (Wifi) • Room comes with AC • Room comes with bed and mattress • Room comes with wardrobe and a desk 
Single without attached bathroom	1	RM1,050.00	<ul style="list-style-type: none"> • Fully furnished • 100 mbps Unifi (Wifi) • Room comes with AC • Room comes with bed and mattress • Room comes with wardrobe and a desk 



Sharing with attached bathroom	2	RM950.00	<ul style="list-style-type: none"> • Fully furnished • 100 mbps Unifi (Wifi) • Room comes with AC • Room comes with bed and mattress • Room comes with wardrobe and a desk 
Sharing without attached bathroom	2	RM850.00	<ul style="list-style-type: none"> • Fully furnished • 100 mbps Unifi (Wifi) • Room comes with AC • Room comes with bed and mattress • Room comes with wardrobe and a desk 


Other amenities included:

- Walking distance to Swinburne Sarawak
- High-speed Unifi Internet
- Free Laundry Facilities
- Rental inclusive of utility bills
- Newly-completed building
- 24 hours security with CCTV surveillance
- Private carpark (additional charges)
- Located in Kenny Hill
- Distance: 1KM/ 3 mins to Swinburne

Remark:


- Utilities charges included
- Free shuttle service available as per schedule
- Rental price shown is applicable for 1-year tenure and above excluding final year/Exchange student
- 2-month tenancy deposit and 1st month tenancy rental upon entering the tenancy

Pine Hotel			
Triple Room	3	RM1,400.00	<ul style="list-style-type: none"> Fully furnished 100 mbps Unifi (Wifi) Room comes with AC Room comes with bed and mattress Room comes with wardrobe and a desk 
Deluxe Room	2	RM1,650.00	<ul style="list-style-type: none"> Fully furnished 100 mbps Unifi (Wifi) Room comes with AC Room comes with bed and mattress Room comes with wardrobe and a desk 
<p>Other amenities included:</p> <ul style="list-style-type: none"> 24 hours security with CCTV surveillance Private carpark Laundry Service (additional charges) Located in Jalan Tun Jugah Distance: 2KM/ 5 mins to Swinburne <p>Remark:</p> <ul style="list-style-type: none"> Utilities charges included Free shuttle service available as per schedule Rental price shown is applicable for 1-year tenure and above excluding final year/Exchange student 2-month tenancy deposit and 1st month tenancy rental upon entering the tenancy 			

Titanium			
Titanium	-	RM650.00	<ul style="list-style-type: none"> • Tastefully furnished • Room comes with AC • Room comes with bed and mattress • Room comes with wardrobe and a desk • Security Safety Box • Laundry services • Sharing Kitchen and Common Area 
<p>Other amenities included:</p> <ul style="list-style-type: none"> • 24 hours security with CCTV surveillance • Public carpark • Cleaning service in common area • Located in Jalan Song • Distance: 1KM/ 10 mins to Swinburne <p>Remark:</p> <ul style="list-style-type: none"> • Transportation not included • Utilities charges included (Limit to RM30) • Rental price shown is applicable for 1-year tenure and above excluding final year student • 2-month tenancy deposit and 1st month tenancy rental upon entering the tenancy 			

Sapphire			
Single room	1	RM1,200.00	<ul style="list-style-type: none"> • Fully furnished • 100 mbps Unifi (Wifi) • Room comes with AC • Room comes with bed and mattress • Room comes with wardrobe and a desk • Laundry machine 
Sharing room	2	RM1,200.00	<ul style="list-style-type: none"> • Fully furnished • 100 mbps Unifi (Wifi) • Room comes with AC • Room comes with bed and mattress • Room comes with wardrobe and a desk • Laundry machine 

<p>Other amenities included:</p> <ul style="list-style-type: none"> • Gymnasium • Swimming Pool • 24 hours security with CCTV surveillance • Private carpark • Token Laundry Machine • New building • Located in Batu Lintang • Distance: 4KM/ 10 mins to Swinburne <p>Remark:</p> <ul style="list-style-type: none"> • Transportation included (1 return trip) • Utilities charges included • Rental price shown is applicable for 1-year tenure and above excluding final year student • 2-month tenancy deposit and 1st month tenancy rental upon entering the tenancy
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Citadine			
Citadine		RM1,600.00	<ul style="list-style-type: none"> • Fully furnished • Room comes with AC • Room comes with bed and mattress • Room comes with wardrobe and a desk • Laundry machine (depending on the room type) • High speed internet • Housekeeping services once a week 

<p>Other amenities included:</p> <ul style="list-style-type: none"> • Gymnasium • Swimming Pool • Jacuzzi • 24 hours security with CCTV surveillance • Token Laundry Machine (additional charges) • Located in SimpangTiga • Distance: 700M/ 5 mins walking to Swinburne <p>Remark:</p> <ul style="list-style-type: none"> • Utilities charges included • Rental price shown is applicable for 1-year tenure and above excluding final year student • 2-month tenancy deposit and 1st month tenancy rental upon entering the tenancy

- Notes:
- The price shown is based on per pax, inclusive of transportation & utilities
 - Rooms will be provided based on availability during the booking.

d) Security Deposit and Other Fees

International student is required by the Malaysian Immigration Department to make a security deposit. The rate of the security deposit is based on the country of origin of the student. The security deposit will be refunded upon graduation or if the student withdraws from the course.

Refundable security deposit	
• India	RM2,000
Other fees (non-refundable)	
• medicalinsurance	RM500
• processing fee* including those for visa, medical examination and studentpass	RM1,250

e) Living Expenses

- Groceries and eating out : RM200 – RM350 per month
- Phone and internet : RM50 – RM150 per month
- Transportation : RM25 – RM50 per week
- Entertainment : RM60 – RM150 per month
- Study expenses (book, stationery, etc.) : RM800 per year

The costs above are estimates only and should be taken as a guide in planning your budget while studying in Kuching.

Further Information:

If you have any questions or would like to discuss the proposal or request a specific program, please do not hesitate to contact:

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