COURSE OUTLINE

Department & Faculty: **Department of Mathematical Sciences, Faculty of Science**	Page : **1 of 5**
Code and Subject: **SSCU 4902 – Final Year Project 1** Total Lecture Hours:	Semester: **1** Academic Session:

	Lecturer Room No.	Tel. No.	e mail
Dr Zaiton Mat Isa	C22-440	34223	zaitonmi@utm.my
PnHalijah Osman	C15- 320	34379	halijahosman@utm.my
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Pre-requites	:	
Synopsis		Students are required to execute a project (research) under an identified supervisor in an agreeable field of mathematics and document their findings. Students will learn to gather information on chosen topics through literature survey/review activities, construct research methodology, anticipate expected results, write current findings, and references. Finally, students are required to submit a research proposal and a draft project/research report comprising of Title, Introduction, Statement of Problem, Research Objectives, Literature Survey/Review, Research Methodology, Expected Findings, Conclusion and References.

Programme Educational Objectives (PEO)

The objectives of the **BSc (Industrial Mathematics)** programme are to provide the knowledge, skills and attributes that should be achieved by the graduates for a successful career. It is therefore anticipated that, graduates of the programme will

PEO	Description
1	be mathematically competent professionals capable of dealing with qualitative and quantitative problems in related industries.
2	be able to assume productive roles and positions in planning, decision making, analysis and supervision of work in the industrial and public sectors.
3	exhibit team working and leadership skills with effective communication and desirable interpersonal skills.
4	pursue life-long learning, enabling them to identify, adapt and seize business opportunities.

Programme Educational Objectives (PEO)

The objectives of the **BSc (Mathematics)** programme are to provide the knowledge, skills and attributes that should be achieved by the graduates for a successful career. It is therefore anticipated that, graduates of the programme will

PEO	Description
1	be mathematically competent professionals able to apply their knowledge and skills in related industries notably in teaching, research and development of new knowledge.
2	have the proficiency in both writing and oral communication to disseminate mathematical knowledge effectively.
3	have the skills and motivation for continued life-long education in the acquisition of new mathematical knowledge and skills in depth and in breadth.

Prepared by: **Name: Dr Zaiton Mat Isa** **Signature:** **Date:**	**Certified by** **Name:** **Signature:** **Date:**

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Program Learning Outcomes (PO)

The POs for this course are the following:

SSCM

PO1	Ability to acquire knowledge on fundamental mathematical concepts, theories and techniques related to current issues.
PO2	Ability to apply the mathematics knowledge and techniques efficiently to solve mathematical and statistical problems and do convincing analysis on the results obtained.
PO4	Ability to understand, extract, analyse and identify problems from a variety of sources and develop approaches based on mathematical knowledge to solve problems.
PO5	Ability to convey ideas and mathematical knowledge clearly and effectively in both written and oral forms to a range of audiences.
PO7	Ability to seek independent study and demonstrate the awareness for continuous personal and professional development.
PO9	Ability to adapt ethical values and integrity in the context of their profession and obligations to society.

SSCE

PO1	Ability to acquire knowledge on fundamental mathematical concepts, theories and techniques related to current issues.
PO2	Ability to apply and practice skills in mathematical reasoning, construct proofs and display proficiency in using a variety of mathematical techniques in carrying out mathematical analysis.
PO4	Ability to understand, extract, analyse and identify problems from a variety of sources and develop approaches based on mathematical knowledge to solve problems.
PO5	Ability to convey ideas and mathematical knowledge clearly and effectively in both written and oral forms to a range of audiences.
PO7	Ability to seek independent study and demonstrate the awareness for continuous personal and professional development.
PO9	Ability to adapt ethical values and integrity in the context of their profession and obligations to society.

Learning Outcomes

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

No.	Course Learning Outcomes	Programme Learning Outcome(s) Addressed	Assessment Methods
CO1	Acquire skills in solving mathematical problems critically, logically, creatively and analytically based on scientific facts and findings and adapt the said skills to decide on a research problem.	PO1(C2,P2,A1), PO2(C4,P2,A3) PO4(CT1-CT3)	Proposal, Draft Project Report

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CO2	Employ intellectual skills, competency and sufficient scientific research approaches and professional ethics to influence the decision on the choice of the research problem successfully.	PO1(C2,P2,A1), PO2(C4,P4,A3)	Proposal, Draft Project Report
CO3	Adopt responsive and adaptive behavior to changing situations with high desire to continuous learning in the acquisition of new knowledge and skills	PO7(LL1,LL2) PO9(EM1,EM2)	Log book entries, Proposal, Draft Project Report
CO4	Demonstrate high intellectual capabilities, able to work independently and effectively in solving problems at hand.	PO1(C2,P2,A1), PO2(C4,P4,A2) PO7(LL1,LL2),	Proposal, Draft Project Report
CO5	Write a proposal defending the chosen research problem by clearly discussing and demonstrating the feasibility of the research project and produce an excellent project or research report.	PO2(C4,P5,A3) PO5(CS1-CS3),	Draft Project Report

Student Learning Time

Teaching and Learning Activities			**Student Learning Time**
1.	**Face-to face Learning**		
	a.	Lecture-Centered Learning	
		i. Lecture – General briefing	6
	b.	Student-Centered Learning	
		i. Discussion with supervisor	14
2.	**Self-Directed Learning**		
	a.	Individual research activities	40
	b.	Proposal Preparation – proposal writing	10
	c.	Preparations for Assessments – report writing	10
3.	**Formal Assessment**		
	a.	Research Proposal Submission	-
	b.	Research Report Submission	-
	Total SLT		80

Teaching Methods

i) Discussion
ii) Self-directed learning
iii) Individual Research Activities

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Weekly Schedule

Week	Activity	Note
Week 1	General Briefing: FYP Schedule (Activity), Regulation and Assessment, Format of Proposal, FYP 1 Report and Format of Project Writing.	**Meeting:** The frequency of meeting depends on the supervisor-student agreement. **Closing Date and Time for Course Withdrawal: Refer Acdemic Calendar** **Log book:** The meeting should be recorded in the log book. Template can be obtained from science.utm.my/mathematics/psm Print accordingly and gather in binding form for submission. All submission needs to be done to 'Bilik Staf Makmal' (C22-Level 3)
Week 2	Meeting and discussion with supervisor for a detail research topic.	
Week 3	Discussion with supervisor on content of **FYP Research Proposal** and individual research activities	
Week 4	Discussion with supervisor on progress of proposal and individual research activities	
Week 5	Discussion with supervisor on 1st draft of proposal and amendments of proposal	
Week 6	Discussion with supervisor on amendments of proposal and individual research activities	
Week 7	**SUBMISSION OF FYP RESEARCH PROPOSAL - 1 Copy** - Consists of: Research Background, Problem Statement, Objective, Scope of Research, Literature Review, Methodology, Gantt Chart and References. - 10-15 pages	
Week 8	Discussion with supervisor and individual research activities	
Week 9	Discussion with supervisor on content of **Research Report** and individual research activities	
Week 10	Discussion with supervisor on progress of research report and individual research activities	
Week 11	Discussion with supervisor on progress of research report and individual research activities	
Week 12	Discussion with supervisor on 1st draft of research report and amendments	
Week 13	Discussion with supervisor on research report and amendments	
Week 14	**SUBMISSION OF FYP1 RESEARCH REPORT (2 copies) & RESEARCH LOG BOOK** - Research report consists of: Research Background, Problem Statement, Objective, Scope of Research, Literature Review, Methodology, Expected/Preliminary results and References - 20-30 pages - Hard copy and soft copy	

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References:

Course Module	-
Text	-
Other references	Related books, journals, articles and reviews

Assesment:

No	Type of Assesment	Number	% each	% Total	Date
1	Proposal	1	30	30	Week 7
2	Research report	1	70	70	Week 14
			Total	100	

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