

# **GUIDELINES OF CURRICULUM: FOUNDATION**

(GCF)



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Malaysian Qualifications Agency 2019
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### PREFACE

The Malaysian Qualifications Agency (MQA), as the sole national higher education quality assurance organisation, facilitates quality through the development of quality assurance documents. These documents are Malaysian Qualifications Framework (MQF), Code of Practice, Guidelines to Good Practices, and Programme Standards, all of which must be used as a reference point in the conduct of an academic programme of study in Malaysia.

Guidelines of Curriculum: Foundation (GCF) is developed to provide specific guidelines to providers in a particular field or course of study so as to prepare students for bachelor studies. The GCF includes specific guidelines on programme aims and objectives, programme learning outcomes, course learning outcomes, curriculum design, course information (CI) and assessment of student learning.

The document is rich in underlying principles and experiences of best practices, visionary ideas, and practical suggestions. It is hoped that Higher Education Providers (HEPs) will benefit from the use of the GCF, which will in turn benefit generations of learners who are expected to be participative national and global citizens.

My deepest gratitude goes to the panel members and MQA officers who put forth tremendous efforts and generously gave their time in realising the GCF.

Congratulations.

Chief Executive Officer Malaysian Qualifications Agency

### ABBREVIATIONS

1.	CI	Course Information
2.	CLO	Course Learning Outcome
3.	COPIA	Code of Practice for Institutional Audit
4.	COPPA	Code of Practice for Programme Accreditation
5.	HEP	Higher Education Provider
6.	HLI	Higher Learning Institution
7.	MOHE	Ministry of Higher Education
8.	MQA	Malaysian Qualifications Agency
9.	MQF	Malaysian Qualifications Framework
10.	PLO	Programme Learning Outcome
11.	QA	Quality Assurance

### 1. INTRODUCTION

The Guidelines of Curriculum: Foundation (GCF) is a higher education pathway programme that prepares students for undergraduate studies. Upon completion of the programme and subject to meeting all entry requirements of the Higher Learning Institution (HLI), the student qualifies for admission into undergraduate studies.

The purpose of this document is to guide and facilitate quality conduct of this programme. This document should be read together with:

- i. The Malaysian Qualifications Framework (MQF);
- ii. The Code of Practice for Programme Accreditation Version 2.0 (COPPA Version 2.0);
- iii. The Code of Practice for Institutional Audit (COPIA); and
- iv. Programme Standards for Foundation 2014 [Standard Kursus Asas (Foundation) 2014].

The GCF is offered in three tracks:

- i. Foundation in Science
- ii. Foundation in Arts
- iii. Foundation in Science and Arts

The scope of this programme covers Physical Sciences, Life Sciences, Business and Humanities.

Each track comprises a set of common core, core and elective courses with specific course requirements. All tracks focus on knowledge (subject-matter content), skills, values, and attitudes relevant to producing holistic and balanced graduates.



## PATHWAY DIAGRAM



### 2. PROGRAMME AIMS

This programme provides students with the theoretical and practical foundations for knowledge and skills acquisition in various disciplines of study in sciences or arts and prepares them for undergraduate studies at Higher Learning Institutions (HLIs) throughout Malaysia.

At the end of this programme, students will be able to explain concepts, theories, and principles in their area of study, source and process data using appropriate digital/technology applications, analyse and apply information to solve problems, and develop their skills for lifelong learning and communication in responsible ways.

### 3. LEARNING OUTCOMES

Students' achievements and success in the Guidelines of Curriculum: Foundation (GCF) are measured through their attainment of the learning outcomes of this Programme and its courses. These learning outcomes are statements on what students should know, understand, and perform upon completing their programme and/or course of study.

The GCF's Programme Learning Outcomes (PLO) are that students, by the end of the Programme, will be able to:

- 1. Utilise facts to describe and discuss concepts, principles, and processes in a specific field of study;
- 2. Apply fundamental principles in the field of study to identify and solve problems;
- Conduct academic activities such as collect, analyse, organise, and process data/information to make conclusions individually or in groups;
- 4. Communicate effectively orally and in writing;
- Utilise basic digital technology applications to seek and process data related to a specific field of study; and
- 6. Search, interpret, and use relevant information to pursue lifelong learning independently.

Each course within the Foundation in Science, Foundation in Arts, and Foundation in Science & Arts has its own set of Course Learning Outcomes (CLO).

### 4. CURRICULUM DESIGN

The credit requirement for this programme is 50 credits. The programme can be conducted in either two (2) or three (3) semesters within a period of ONE (1) year.

The credit value indicates the amount of time spent on teaching and learning activities for each course. The allocation of credit value and student learning time (SLT) is linked to the level of complexity, difficulty, and mastery required in the courses concerned.

Throughout the programme, students will undertake the following courses:

### A. Foundation in Science

- i. Six (6) common core courses;
- ii. Five (5) core courses; AND
- iii. Three (3) specialisation courses for Life Sciences OR Physical Sciences.

### B. Foundation in Arts

- i. Six (6) common core courses;
- ii. Six (6) core courses; AND
- iii. Two (2) optional courses.

### C. Foundation in Science and Arts\*

- i. Six (6) common core courses;
- ii. Five (5) core courses; AND
- iii. Three (3) optional courses (according to the intended field of study and entry requirements by HEPs).

### Table 4.1 COMPONENTS OF THE PROGRAMME: FOUNDATION IN SCIENCE

Course Classification	Credit Value	Percentage (%)			
Common Core	18	36.0			
Core	20	40.0			
Specialisation	12	24.0			
TOTAL	50	100.0			

Module Courses	Credit Value	Percentage (%)
Common Core	18	36.0
Core	24	48.0
Optional	08	16.0
TOTAL	50	100.0

### Table 4.2 COMPONENTS OF THE PROGRAMME: FOUNDATION IN ARTS

### Table 4.3 COMPONENTS OF THE PROGRAMME: FOUNDATION IN SCIENCE AND ARTS

Module Courses	Credit Value	Percentage (%)
Common Core	18	36.0
Core	20	40.0
Optional	12	24.0
TOTAL	50	100.0

### Table 4.4 PROGRAMME STRUCTURE FOR FOUNDATION IN SCIENCE (PHYSICAL AND LIFE SCIENCES)

	CREDIT		
THINKING SKILLS	3		
BASIC INFORMATION AN	D COMMUNIC	ATION TECHNOLOGY	3
			3
ENGLISH II			3
MATHEMATICS I			4
CO-CURRICULUM			2
TOTAL	18		
	CO	RE	
CHEMISTRY I	4		
CHEMISTRY II	4		
BIOLOGY I			4
PHYSICS I			4
MATHEMATICS II			4
TOTAL			20
	SPECIAL	ISATION	
PHYSICAL SCIENCES	CREDIT	LIFE SCIENCES	CREDIT
PHYSICS II	4	BIOLOGY II	4
ENGINEERING MATHEMATICS	4	4	
INTRODUCTION TO PROGRAMMING	4	4	
TOTAL	12		12
GRAND TOTAL			

### Table 4.5 PROGRAMME STRUCTURE FOR FOUNDATION IN ARTS (BUSINESS AND HUMANITIES)

CC	CREDIT			
THINKING SKILLS		3		
BASIC ICT		3		
ENGLISH I		3		
ENGLISH II		3		
MATHEMATICS		4		
CO-CURRICULUM		2		
TOTAL		18		
	CORE			
BUSINESS (CORE)	HUMANITIES (CORE)	CREDIT		
ESSENTIALS OF ECONOMICS	ESSENTIALS OF ECONOMICS	4		
INTRODUCTION TO LAW	INTRODUCTION TO LAW	4		
INTRODUCTION TO MANAGEMENT	INTRODUCTION TO MANAGEMENT	4		
INTRODUCTION TO MARKETING	DDUCTION TO INTRODUCTION TO ETING PSYCHOLOGY			
FINANCIAL ACCOUNTING	INTRODUCTION TO SOCIOLOGY	4		
MANAGEMENT ACCOUNTING	WRITING & RESEARCH SKILLS	4		
TOTAL		24		
OPTIONAL (CHOOSE ANY T	WO)	CREDIT		
INTRODUCTION TO FINAN	CE	4		
INTRODUCTION TO PSYCH	IOLOGY	4		
WRITING & RESEARCH SK	4			
INTRODUCTION TO VISUAI	4			
INTRODUCTION TO MASS	MEDIA AND COMMUNICATION	4		
INTRODUCTION TO LEGAL	SKILLS	4		
TOTAL		8		
GRAND TOTAL		50		

### Table 4.6 PROGRAMME STRUCTURE FOR FOUNDATION IN SCIENCE AND ARTS\*

COURSES	CREDIT
COMMON CORE	
THINKING SKILLS	3
BASIC INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)	3
ENGLISH I	3
ENGLISH II	3
MATHEMATICS I	4
CO-CURRICULUM	2
TOTAL	18
CORE	
CHEMISTRY I	4
BIOLOGY I	4
PHYSICS I	4
ESSENTIALS OF ECONOMICS	4
INTRODUCTION TO MANAGEMENT	4
TOTAL	20
OPTIONAL (CHOOSE ANY T	HREE )
BIOCHEMISTRY	4
BIOLOGY II	4
CHEMISTRY II	4
PHYSICS II	4
ENGINEERING MATHEMATICS	4
MATHEMATICS II	4
INTRODUCTION TO PROGRAMMING	4
INTRODUCTION TO MARKETING	4
FINANCIAL ACCOUNTING	4

COURSES	CREDIT
MANAGEMENT ACCOUNTING	4
INTRODUCTION TO LAW	4
WRITING & RESEARCH SKILLS	4
INTRODUCTION TO FINANCE	4
INTRODUCTION TO LEGAL SKILLS	4
INTRODUCTION TO PSYCHOLOGY	4
INTRODUCTION TO SOCIOLOGY	4
INTRODUCTION TO VISUAL ARTS	4
INTRODUCTION TO MASS MEDIA AND	Λ
COMMUNICATION	Ŧ
TOTAL	12
GRAND TOTAL	50

\* Note:

- *i.* The Higher Education Provider can offer the above courses in 2 or 3 semester structures accordingly.
- *ii.* Entry requirements into the Foundation in Science and Arts programme follow that of the Foundation in Science.

### 5. COURSE INFORMATION

### **COMMON CORE**

- 1. Course Name and Code: THINKING SKILLS
- 2. Synopsis: Critical thinking is the process by which we develop and support our beliefs and evaluate the strength of arguments made by others in real-life situations. It involves actively and skilfully conceiving, applying, analysing, and evaluating information gathered from observation, experience, reflection, reasoning or communication as a guide to belief and action. This course encourages students to reflect on the processes of thinking, as well as developing and practising thinking skills
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 3
- 6. Pre-requisite/co-requisite (if any): Nil
- 7. Course learning outcomes (CLO):

Upon completion of this course, students should be able to:

CLO 1 - explain the concept of critical and creative thinking.

CLO 2 - outline the attributes of being critical, creative and innovative in learning and life.

CLO 3 - make better decisions through critical thinking and creative problem solving.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course	l	Programn	ne Learni	ng Outcoi	mes (PLO	)	Teaching	Assessment
Outcomes (CLO)	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	Methods	
CLO 1			V				Lectures/ Tutorials	Assignment/Mini Project, Quizzes/Test, Final Examination
CLO 2		~				¥	Lectures/ Tutorials	Assignment/Mini Project, Quizzes/Test, Final Examination
CLO 3		✓				√	Lectures/ Tutorials	Assignment/Mini Project, Quizzes/Test, Final Examination

			Teaching and Learning Activities						
	Course Content Outline	CLO*	Gu	ided Le (F2F	earnir <sup>-</sup> )	ng	Guided Learning	Independent	Total
			L	т	Р	ο	(NF2F) e.g., e- Learning	Learning (NF2F)	361
1.	<ul> <li>Introduction to Critical Thinking</li> <li>1.1 Definition</li> <li>1.2 Critical thinking theories</li> <li>1.3 Importance of critical thinking</li> <li>1.4 Types of thinking</li> <li>1.5 Characteristics and skills of a critical thinker</li> </ul>	1,2	4	4				8	16
2.	<ul> <li>Critical Thinking and Creative Thinking</li> <li>2.1 Introduction to creative thinking</li> <li>2.2 Three basic principles of creative thinking</li> <li>2.3 Characteristics of a creative thinker</li> <li>2.4 Creative thinking techniques <ol> <li>Brainstorming</li> <li>Mind mapping</li> </ol> </li> <li>2.5 Six thinking hats and its benefits</li> <li>2.6 Critical thinking vs Creative thinking</li> </ul>	1,2	4	4				8	16
3.	Argument, Conclusion and Reasoning3.1Introduction to argumenti.Premisesii.Conclusion3.2Argument validity3.3Argument mapping3.4Introduction of conclusion3.5Identify conclusion3.6Definition of reason3.7Identify reasons3.8Inductive reasoning3.9Deductive reasoning	1,2,3	3	3				6	12
4.	<ul> <li>Flaws, Assumptions and Analogies</li> <li>4.1 Definition of flaws</li> <li>4.2 Fallacies</li> <li>4.3 Differences between a fallacy and a logical fallacy</li> <li>4.4 Categories of fallacy</li> <li>4.5 Fallacies of relevance</li> <li>4.6 Assumptions</li> <li>4.7 Analogies</li> </ul>	1,2,3	3	3				6	12
5.	Evidence5.1Introduction of evidence5.2Types of evidencei.Primary sourceii.Secondary source5.3Evaluating evidence	1,2,3	3	3				6	12

Course Content Outline				vities					
		CLO*	Gu	ded Le (F2F	earnir F)	ng	Guided Learning	Independent Learning (NF2F)	Total
			L	т	Р	ο	(NF2F) e.g., e- Learning		SLI
6.	Constructing Arguments								
	<ul><li>6.1 Constructing arguments</li><li>6.2 Recognising arguments</li><li>6.3 Arguments are inferences</li><li>6.4 Evaluating arguments</li></ul>	1,2,3	4	4				8	16
7.	Thoughts								
	7.1 Elements of thought								
	7.2 Reflective thoughts								
	7.3 Thought awareness	100	2	2				c	10
	7.4 Evaluating thoughts	٦,٢,٥	3	3				0	12
	7.6 Addressing negative thoughts								
	7.7 Method to change negative thought								
	patterns								
	TOTAL		24	24				48	96
		•	•				-		•
	Assessment								Total

Assessment	Percentage (%)	F2F	NF2F	Total SLT					
Quizzes & Assignment	40	2	8	10					
Test	20	1	5	6					
Final Examination	40	2	6	8					
		GRA	ND TOTAL SLT	120					
L = Lecture, T = Tutorial, P = Practical, O = Others, F2F = Face to Face, NF2F = Non Face to Face *Indicates the CLO based on the CLO's numbering in Item 8									

- 11. Identify special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:

Note: HEPs to update and ensure the latest edition/publication.

- Cottrell, S. (2017). *Critical thinking skills: Developing effective analysis and argument* (3rd ed.). MacMillan Education, UK.
- Kallet, M. (2014). Think smarter: Critical thinking to improve problem-solving and decisionmaking skills. New Jersey: John Wiley & Sons, Inc.
- 13. Other additional information:

- 1. Course Name and Code: BASIC INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)
- 2. Synopsis: This course aims to prepare students with sufficient up-to-date information and communication technology knowledge and skills that are consistent with current ICT trends. It covers IT literacy, information system, social informatics and network computing.
- 3. Name(s) of academic staff:
- 4. Semester offered: Semester 1
- 5. Credit Value: 3
- 6. Prerequisite/co-requisite (if any):
- Course learning outcomes (CLO): Upon completion of the course, students should be able to: CLO 1- describe concepts and processes related to ICT effectively.
  - CLO 2- apply suitable ICT tools to solve ICT related problems.
  - CLO 3- solve problems using appropriate ICT tools.
- 8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course		Program	me Learn	ing Outco	omes (PLC	<b>D</b> )	Toaching		
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods	Assessment	
CLO 1	~						Lectures, Demonstration, Tutorials	Assignments Tests Final Examination	
CLO 2		~			~	~	Lectures, Demonstration, Tutorials	Assignments Tests Final Examination	
CLO 3		~			~	~	Lectures, Demonstration, Tutorials	Assignments Tests Final Examination	

				Teaching and Learning Activities						
				Gui	ded I	Learni	ng	Guided	Independ	Total
	Course Content Outline		CLO*		(F2	2F)		Learning	ent	SLT
					т	Р	0	(NF2F) e.g., e-	Learning	
				-			Ŭ	Learning	(NF2F)	
1	INFORMATION TECHNOLOGY									
	LITERACY									
	1.1 Basic terminologies and	related								
	equipment such as moder	n, file								
	device	siorage								
	1.2 Basic online terminologie	es &	1	4		2		2	6	14
	concepts, namely bandwidth, s	atellite,							-	
	downlink, virtual reality.									
	1.3 Common files such as JPEG	i, JPG,								
	GIF, PDF.	ma and								
	Al search engine voice recogn	ition								
2	INFORMATION SYSTEM									
	2.1 Technology, software, hardware	e								
	2.2 Data & databases		12	6		3		2	Q	10
	2.3 Networking		1,2	0		5		2	0	19
	2.4 Processes 2.5 People and roles									
2										
3	3.1 Impact of digital systems	and								
	innovation towards technolog	and and								
	application domain	,,,								36
	3.2 Principle and methodology for	digital				-			14	
	system	2,3	12		6		4	14	36	
	challenges	cs and								
	3.4 Awareness of current areas in	n social								
	informatics using re	elevant								
_	controversies									
4	NEIWORK COMPUTING									
	4.1 Trend 1. Internet of Thing (101). 4.2 Trend 2: Machine learning & co	anitive								
	computing	Jginavo								
	4.3 Trend 3: Microservice architectu	ures								
	4.4 Trend 4: Adaptive security	114 J	2,3	10		5		4	12	31
	4.5 Trend 5: Virtual/augmented real	iity								
	4.0 Trend 7. Smart personal assista	ants								
	4.8 Trend 8: Blockchain (bitcoin)									
				20		16		10	40	100
				32		10		12	40	100
	Accessment	roortea	o (9/ )			о <b>с</b>		NE2E	T-4	
	Assessment Pe	ercentag	ย (%)		FZ	<b>۲</b>		NF2F	I Ota	
Ass _	signments	30				1		3		4
Tes	StS	20				2		6		8
Fin	al Examination	50			2	2		6		8
							(	GRAND TOTAL	SLT 1	20
	L = Lecture, T = Tutorial, P = Pr *Indicates th	actical, C ne CLO b	) = Othe ased on	ers, F2F the CL	- = Fa _O's n	ace to l numbei	Face, ring ir	NF2F = Non F n Item 8	ace to Face	

- 11. Identify special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
  - i. Computer lab
  - ii. Adobe Dreamweaver & Photoshop
  - iii. PHP & MySQL
  - iv. Cloud Computing Software: AWS / Azure / Oracle
- 12. Recommended text/reading:

Note: HEPs to update and ensure the latest edition/publication.

- Gannon, D. B. and Foster, I. (2017). Cloud computing for science and engineering. MIT Press.
- Kumar, N. and Thakre, A. (2017). *Ubiquitous communications and network computing*. Springer.
- Ciampaglia, G. L., Mashhadi, A. and Yasseri, T. (2017). Social informatics: Lecture notes on computer science. Springer.
- 13. Other additional information:

- 1. Course Name and Code: ENGLISH I
- 2. Synopsis: This course aims to equip learners with listening and speaking skills in English. During the course, they will develop knowledge and skills in vocabulary, pronunciation and grammar. The use of technology is encouraged throughout the course to reinforce learning and support independent study.
- 3. Name(s) of academic staff:
- 4. Semester offered: Semester 1
- 5. Credit Value: 3
- 6. Prerequisite/co-requisite (if any): Nil
- 7. Course learning outcomes (CLO):

Upon completion of this course, students should be able to:

- CLO 1- distinguish various information from a range of listening tasks.
- CLO 2- analyse information from extended discussion.
- CLO 3- deliver information and viewpoints effectively.
- CLO 4- use correct grammar and appropriate vocabulary in spoken communication.
- 8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course Learning	Pro	gramme	Learnir	ng Outco	omes (P	The state of Markhandra	<b>A</b>		
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	leaching Methods	Assessment	
CLO 1	$\checkmark$		$\checkmark$	$\checkmark$			Lectures, Tutorials	Quizzes, Oral Summaries, Final Examination	
CLO 2			$\checkmark$	$\checkmark$			Lectures, Tutorials, Seminars	Oral Assignments, Final Examination	
CLO 3				$\checkmark$			Lectures, Tutorials, Seminars	Presentation, Final Examination	
CLO 4	$\checkmark$			$\checkmark$			Lectures, Tutorials, Seminars	Oral Assignments, Presentation, Final Examination	

					Teac	hing a	and L	earning Activ	vities			
	Course Content Outlin	e	CLO*	Gu	ided L (F2	earnin F)	g	Guided Learning	Independ ent	Total SI T		
				L	т	Р	ο	(NF2F) e.g., e- Learning	Learning (NF2F)	JEI		
1.	Listening and speaking in exchanges and everyday contex requests and asking questions talks)	n simple kts, making (e.g., small	3,4	2	2				5	9		
2.	Habits and factors affecting listening	3,4	2	2				5	9			
3.	Listening for the gist	1,2,4	2	2				6	10			
4.	Listening for key words and spe	cific details	1,4	2	2				6	10		
5.	Listening to instructions (e process flow)	.g., SOP,	1,4	2	2				6	10		
6.	Elements of speaking, making of facts, and critiquing/providing	2,3,4	2	2				7	11			
7.	7. Communication contexts: agreeing, disagreeing, suggesting, proposing			5	2				8	15		
8.	3. Presentations skills			5	2				8	15		
9.	Introduction, wrapping up, revi course	sion of the		2	2				3	7		
10.	Practice: preparation and delivoral presentation	very of the	1,2,3, 4	2	1				3	6		
11.	Preparation for assessments								9	9		
	Total			26	19				66	111		
										Total		
	Assessment	Percenta	ge (%)		F2	F		NF	2F	SLT		
List	Listening test 25%				1				1	2		
Pre	Presentation / Group discussion 25%				1				1	2		
Fina liste	al examination (including ening tasks)	6		2			3	3	5			
Tota	al									9		
	- Locture T - Tutorial D - Drac	tical/Procest	tation O				no to	GRAND	Non Easo to	120		
		es the CLO b	based on	the Cl	_0's nu	umberir	ng in	Item 8				

11. Identify special requirement or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):

- 12. Recommended text/reading:
  - Betsis, A. & Haughton, S. (2015). Succeed in Trinity ISE I: Listening & Speaking Student's Book. London: Global ELT.
  - Betsis, A. & Mamas, L. (2016). Succeed in IELTS Life Skills: Speaking & Listening. London: Global ELT.
  - Ostrowska, S. (2016). Unlock: Listening & Speaking Skills 3. Cambridge: Cambridge University Press.

Note: HEPs are to update and ensure the latest edition/publication. Each HEP can select its own materials. Nevertheless, the materials aimed at developing proficiency skills should encompass at least CEFR B1 materials.

13. Other additional information:

Further details on methods of assessment for the final exam (50%):

As the focus of this course in on listening and speaking, the final examination can adopt the MUET method for both components. For example, in assessing 'listening', students can listen for information and provide written answers through MCQ, filling in the blanks, and etcetera.

To assess 'writing', students may be given topics for discussion and/or debates in groups and be assessed on how they apply their skills for communicating in contexts, i.e. agreeing, disagreeing, suggesting, proposing, and etcetera.

- 1. Course Name and Code: ENGLISH II
- 2. Synopsis: This course aims to equip learners with reading and writing skills in English. During the course, students will develop knowledge in vocabulary, grammar, and writing. The use of technology is encouraged throughout the course to reinforce the learning and to support independent study.
- 3. Name(s) of academic staff:
- 4. Semester offered: Semester 2 or Semester 3
- 5. Credit Value: 3
- 6. Prerequisite/co-requisite (if any): English I
- 7. Course learning outcomes (CLO):

Upon completion of this course, students should be able to:

CLO 1- analyse and evaluate information from a range of reading tasks.

CLO 2- write the thesis statement, topic sentence, supporting details, and main ideas in reading and writing tasks.

CLO 3- compose different types of essays using appropriate writing conventions.

CLO 4- use complex, accurate, fluent language and appropriate lexical items in written communication.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course	Programme Learning Outcomes (PLO)		_O)	Tooching				
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods	Assessment
CLO 1				$\checkmark$	$\checkmark$	$\checkmark$	Lectures, Tutorials	Quizzes, Oral & Written Assignments, Final Examination
CLO 2				$\checkmark$	$\checkmark$		Lectures, Tutorials, Seminars	Oral & Written Assignments, Final Examination
CLO 3				$\checkmark$		$\checkmark$	Lectures, Tutorials, Seminars	Oral & Written Assignments, Final Examination
CLO 4				$\checkmark$		$\checkmark$	Lectures, Tutorials, Seminars	Oral & Written Assignments, Final Examination

					Теа	nchin	g and Learning Act	tivities	
	Course Content Outline	CLO*	Lea	Guid arning	led g (F	2F)	Guided Learning (NF2F)	Independent Learning	Total SLT
			L	Т	Ρ	0	e.g., e-Learning	(NF2F)	
1.	Reading comprehension and strategies (e.g. skimming scanning, predicting)	1, 2	5	5				20	30
2.	Thesis statement, topic sentence supporting details, main ideas	, 1, 2, 4	7	7				25	39
3.	Paragraph writing: effective writing coherence and unity in conten paragraph	2, 4	3	3				4	10
4.	Essay types (e.g., opinion argumentative essays)	, 2, 3, 4	6	6				18	30
5.	Total		21	21				67	109
									-
	Assessment F	ercentage (	%)			F2F		NF2F	Total SLT
Rea	ding test	15%				1		1	2
Writ	ing test	15%				1		1	2
Assi	gnments	20%				1		1	2
Fina	I examination	50%				2		3	5
Tota	1								11
							GRA	ND TOTAL SLT	120
L = Lecture, T = Tutorial, P = Practical/Presentation, O = Others, F2F = Face to Face, NF2F = Non Face to F *Indicates the CLO based on the CLO's numbering in Item 8								Face	

- 11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:
  - Betsis, A. & Lethem, L. (2018). Practising for Trinity ISE I: Reading & Writing. London: Global ELT.
  - Blanchard, K. & Root, C. B. (2016). Ready to Write 2 (B1) Student Book with Essential Online Resources. London: Pearson ELT.
  - Westbrook, C. (2014). Unlock: Reading & Writing Skills 3. Cambridge: Cambridge University Press

**NOTE:** HEPs are to update and ensure the latest edition/publication. Each HEP can select its own materials. Nevertheless, the materials aimed at developing proficiency skills should encompass at least CEFR B1, moving towards B2 materials.

13. Other additional information

- 1. Course Name and Code: MATHEMATICS / MATHEMATICS I
- 2. Synopsis: This course is designed to develop students' confidence with mathematical concepts and relationships and use of mathematics and statistical skills and techniques in a range of contexts specifically problem solving and abstract thinking. Topics covered are numbers, functions and polynomials, sequence and series, matrices, derivatives, integrals, basic statistics and probability.
- 3. Name(s) of academic staff:
- 4. Semester offered:
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Nil
- Course learning outcomes (CLO):
   Upon completion of the course, students should be able to:
   CLO 1- describe the fundamental concepts and principles of various mathematical methods.
  - CLO 2- apply a range of mathematical skills as a logical and coherent subject.
  - CLO 3- solve problems through a quantitative approach.
- 8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course Learning		Program	)	Teaching	Assessment			
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5 PLO		Methods	
CLO 1	~						Lecture, Tutorial	Assignment, Quizzes, Final Examination
CLO 2	~	~	~				Lecture, Tutorial	Assignment, Quizzes, Final Examination
CLO 3		~	~				Lecture, Tutorial	Assignment, Quizzes, Final Examination

			Teaching and Learning Activities						
	Course Content Outline	CLO*	Guid	ed Le (F2F	arni ')	ing	Guided Learning (NF2F)	Independent Learning	Total SLT
			L	т	Р	0	e.g., e- Learning	(NF2F)	
1.	Numbers1.1Introduction to real and complex numbers1.2Indices (exponent)1.3Surd1.4Logarithm1.5Complex numbers	1,2	2	2				4	8
2.	<ul> <li>Functions</li> <li>2.1 Definition and types of functions</li> <li>2.2 Linear functions</li> <li>2.3 Quadratic functions</li> <li>2.4 Exponential and logarithmic functions</li> <li>2.5 Limits of functions</li> </ul>	1,2	4	3				7	14
3.	Sequence and Series3.1 Introduction to sequence and series3.2 Arithmetic progression and series3.3 Geometric progression and series3.4 Application of geometric and arithmetic series3.5 Binomial expansion	1,2,3	4	3				7	14
4.	<ul> <li>Matrices</li> <li>4.1 Definition and types of matrices</li> <li>4.2 Operations and properties of matrices</li> <li>4.3 Determinants and inverses</li> <li>4.4 Solving systems of linear equations</li> </ul>	1,2,3	4	3				7	14
5.	Derivatives								
	<ul><li>5.1 Concept of differentiation and derivatives</li><li>5.2 Rules of differentiation</li><li>5.3 Application of differentiation</li><li>5.4 Partial derivatives</li></ul>	1,2,3	5	5				10	20
6.	Integrals				1				
	<ul><li>6.1 Definition of integral and rules of integration</li><li>6.2 Substitution technique</li><li>6.3 Definite integral and areas</li><li>6.4 Applications of integration</li></ul>	1,2,3	5	5				10	20
7.	Introduction to statistics				1				
	<ul><li>7.1 Basic terms</li><li>7.2 Descriptive data</li></ul>	1,2,3	5	5				10	20

	<ul> <li>7.3 Central measurement: mean, mode</li> <li>7.4 Dispersion meas range, quartile, standard deviation</li> <li>7.5 Skewness</li> </ul>	tendency median, surement: variance,										
8.	Introduction to probability8.1Probability approach8.2Concepts of events, space, set, combination, union8.3Probability of simple, dependent and ind events8.4Conditional probabilitie	sample subset, complex, ependent s	1,2,3	4	3					7		14
	Total			33	29					62		124
	Assessment		Percenta (%)	age		F2	F		N	IF2F	Tot	al SLT
Qı	uizzes & Assignments		30			2				9		11
Test			20			1				6		7
Fir	nal Examination	50			2				16		18	
		·						•				
	GRAND TOTAL SLT 160											
	L = Lecture, T = Tutorial, P = Practical, O = Others, F2F = Face to Face, NF2F = Non Face to Face *Indicates the CLO based on the CLO's numbering in Item 8											

- 11. Identify special requirement or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:

Note: HEPs to update and ensure the latest edition/publication.

- Sullivan, M. (2016). Algebra and trigonometry (10th ed.). Pearson.
- Weiss, N. A. (2016). Introductory statistics (10th ed.). Pearson.
- Sullivan, M. (2016). *Precalculus* (10th ed.). Pearson.
- Devore, J. L. (2015). *Probability and statistics for engineering and the sciences* (9th ed.). Cengage Learning, Boston.
- 13. Other additional information:

- 1. Course Name and Code: CO-CURRICULUM
- 2. Synopsis: This course aims to generate students who are able to apply soft skills in terms of basic practical skills, communication, and life-long learning skills to promote a positive attitude and moral values. The course is implemented through students' involvement in faculty courses in activities, practices, or tasks comprising sports and games, clubs and societies, as well as uniformed units.
- 3. Names (s) of academic staff:
- 4. Semester Offered: Semester: Semester 1 or 2
- 5. Credit Value: 2
- 6. Prerequisite/co-requisite (if any): Nil
- Course learning outcomes (CLO): Upon completion of the course, students should be able to: CLO 1- perform basic practical skills learned through course work in a group.
  - CLO 2- search and share information on current issues related to the co-curriculum activities.
- 8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course	F	Programm	e Learnii	ng Outco	omes (PLC	<b>)</b> )	Teeching		
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods	Assessment	
CLO 1		$\checkmark$					Group work	Project (Activity/Event)	
CLO 2				$\checkmark$			Case study	Presentation	

			Teaching and Learning Activities						
	Course Content Outline	CLO*	Le	Gu earni	ided ng (F	2F)	Guided Learning (NF2F) e.g., e- Learning	Independent Learning (NF2F)	Total SLT
			L	Т	Р	0			
1.	<ul> <li>Introduction</li> <li>1.1 History/importance of sports or games/clubs or societies/ uniformed units</li> <li>1.2 Concept</li> <li>1.3 Definition</li> <li>1.4 Goal and objective</li> <li>1.5 Patriotism</li> </ul>	2				2	2	4	8
2.	Activeness 2.1 Based on health 2.2 Based on psychomotor or Safety Management 2.3 Concept 2.4 Sports safety 2.5 Types: Self/family/group 2.6 First aid skills	2			4	4	4	6	18
3.	<ul> <li>Management Skills (Clubs and Societies)</li> <li>3.1 Planning and managing organisation</li> <li>3.2 Etiquette</li> <li>3.3 Preparing a proposal paper</li> <li>3.4 Filing management</li> <li>3.5 Financial management</li> <li>3.6 Basic risk management</li> <li>or</li> <li>Management Skills (Sports and Games)</li> <li>3.7 Organising and planning competition activities</li> <li>3.8 Competition system</li> <li>3.9 Introduction to the main sports equipment</li> <li>3.10 Managing and handling sports equipment/tools</li> <li>or</li> <li>Marching Skills (Uniformed Units)</li> <li>3.11 Common instructions</li> <li>3.12 Steps and marching</li> </ul>	1			8	8	8	8	32

4.	Reflection		2				2		6		8
	4.1 Self/programme assessment										
	Total			0	0	12	16		8	30	66
Assessment			entage %)			F2F			NF2F		Total SLT
Group work			0		2				6		8
Case study		5	0		2				6		8
						GRAND TOTAL SLT					82
L = Lecture, T = Tutorial, P = Practical, O = Others, F2F = Face to Face, NF2F = Non Face to Face *Indicates the CLO based on the CLO's numbering in Item 8											

11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):

### 12. Recommended text/reading:

Note: HEPs to update and ensure the latest edition/publication.

- Ahmad Esa, Mohd. Khir Mohd Nor, Nawawi Jusoh, Norashidah Abd Rahman & Zalinah Salehon (2015). *Citra kokurikulum*. Penerbit UTHM.
- Wankel, L. A., & Wankel, C. (Eds.) (2016). *Integrating curricular and co-curricular endeavors to enhance student outcomes*. Emerald Group Publishing Limited.
- 13. Other additional information:

### (CORE)

- 1. Course Name and Code: CHEMISTRY I
- 2. Synopsis:

This course is designed to provide the essential foundations of chemistry to prepare students for higher studies where chemistry or chemistry-related subjects are taught. Students will be exposed to a thorough introduction to chemistry, scientific methods and development of skills relevant to the safe practice of science. Coverage of this course includes stoichiometry, atomic structure, the periodic table, chemical bonding, thermochemistry, hydrocarbon and halogenalkanes, chemical equilibrium and reaction kinetics.

- 3. Names (s) of academic staff:
- 4. Semester Offered: 2
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any):
- 7. Course learning outcomes (CLO):

Upon completion of the course, students should be able to:

CLO 1- describe the concepts of physical and inorganic chemistry theories related to definitions, laws/principles, chemical bonding and reactions.

CLO 2- solve problems with analytical and critical thinking by applying chemistry facts and principles.

CLO 3- apply some techniques used in chemistry experiments.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course	Prog	ramme	Learnii	ng Outo	comes (	PLO)	Teaching states	Assessment	
Outcomes (CLO)	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	l eaching strategies		
CLO 1	$\checkmark$						Lectures, Tutorials	Test, Quizzes, Final Examination	
CLO 2	>	~					Lectures, Tutorials,	Test, Quizzes, Final Examination, Assignment (Essay )	
CLO 3		~	~	~			Laboratory Practicals	Lab reports, Presentations	

Course Content Outline				Total SLT					
		CLO*	Le	Gui arnir	ded Ig (F:	2F)	Guided Learning	Independent	
			L	т	Р	ο	(NF2F) e.g., e- Learning	Learning (NF2F)	
1. Stoichiomet	try						g		
1.1 Structu 1.2 Proton numbe 1.3 Relativ	ure of atoms number, nucleon er, isotopes, Avogadro er ve atomic masses	1,2,3	6	2	2			10	20
1.4 Compo compo and m 1.5 Conce 1.6 Limitin applica calcula	ation (%) of bunds with the empirical olecular formula ntration of solution g reagent and ation to stoichiometric ations								
2. Atomic stru	cture								
2.1 Nucleu 2.2 Bohr a 2.3 Bohr equatio	us of atom tomic model atom and Rydberg on calculations	1,2,3	4	1	2			7	14
2.4 Atomic numbe	ers								
2.5 Electro elemen 2.6 Rules configu	onic configurations of nts of the electronic uration								
2 Deviedie Tel	blo								
3.1 Introdu 3.2 Classit 3.3 Period	iction fication icity properties	1,2	3	1				4	8
4. Chemical B	onding								
<ul> <li>4.1 Lewis</li> <li>4.2 Three bondin metalli</li> <li>4.3 Interm</li> <li>4.4 Lewis</li> <li>4.5 Molect</li> <li>4.6 Orbital hybridi</li> </ul>	dot symbol types of chemical g: ionic, covalent and c bonding olecular bonding dot structures ular shape and polarity overlap and sation	1,2,3	5	2	2			9	18
5. Chemical Equilibrium									
5.1 Equilib equilib consta 5.2 Writing equilib 5.3 Direction	rium and the rium nt g expressions of the rium constant on of reaction	1, 2,3	3	2	2			8	15
5.4 Le Cha applica	atelier's principle and its ation								

5.5 Factors affecting ch equilibrium	emical								
6. Thermochemistry									
<ul> <li>6.1 Introduction to thermochemistry</li> <li>6.2 Enthalpy of reaction</li> <li>6.3 Specific heat capacity and heat capacity</li> <li>6.4 Hess Law</li> <li>6.5 Born-Haber cycle</li> </ul>		,2,3	4	2	2			8	16
7. Introduction to Organic		1 0	•	0					47
<ul> <li>Chemistry</li> <li>7.1 Functional groups and nomenclature</li> <li>7.2 Nucleophiles, electrophiles, free radicals, homolytic and heterolytic cleavage of bonds</li> <li>7.3 Isomerism: structural (chain, positional, functional group) and stereoisomerism (geometrical, cis-trans)</li> </ul>		1,2	6	2				g	17
8.Hydrocarbons & Halogenalk	anes								
<ul> <li>8.1 Alkanes</li> <li>8.2 Alkenes</li> <li>8.3 Arenes: resonance structure</li> <li>8.4 Classification of alkyl hat</li> <li>8.5 Hydrolysis, formation nitriles primary aminestelimination reaction (Gragents)</li> </ul>	ucture, lature, 1 action, lides n of s and ignard	,2,3	5	2	2			10	19
Total			36	14	12			65	127
Laboratory Practical (12 hours):       1.       Introduction to Lab Techniques and Apparatus         2.       Determination of Formula Unit of a Compound         3.       Properties of Ionic and Covalent Bonds         4.       Chemical Equilibria and Le Chatelier's Principle         5.       Determination of Heat & Reaction         6.       Chemical properties of Alkanes and Alkenes									
Assessment	Percent	entage (%)			F2	2F	NF2F		Total SLT
Lab reports		15			3	3	6		9
Test		20		2		6		8	
Assignments		15		2			4		6
Final Examination	50	%	2.5			.5		7.5	10
	- Dec -41		045		<u></u>		GRAN	ID TOTAL SLT	160
*Indicates the CLO based on the CLO's numbering in Item 8.									
- 11. Identify special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:

- Prof. Madya Dr. Norbani Abdullah et al. (2018). *Comprehensive college chemistry*. SAP Education.
- Nivaldo J. Tro (2013). *Principles of chemistry: A molecular approach* (2nd ed.). Pearson.
- 13. Other additional information:

- 1. Course Name and Code: CHEMISTRY II
- Synopsis: This course is designed to develop a broader and deeper understanding of concepts, process and principles in chemistry related to other disciplines. This organic chemistry course covers nomenclature, acids & bases, hydrocarbon, alkanes & alkenes, alcohol, esters & esterification process, carbohydrates, synthetic polymers, carbonyl compounds, and carboxylic acid.
- 3. Names (s) of academic staff:
- 4. Semester Offered: Semester 2 or 3
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Chemistry 1
- 7. Course learning outcomes (CLO):

Upon completion of the course, students should be able to:

CLO 1- describe the concept of scientific phenomena, definitions, laws, and conventions in organic chemistry.

CLO 2- solve problems with analytical and critical thinking by applying knowledge, principle and skills in organic chemistry.

CLO 3- use experimental skills to carry out investigations.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course	Pro	gramme	e Learnii	ng Outco	omes (P	LO)			
Learning Outcomes (CLO)	omes )) PLO1 PLO2 PLO3 PLO4 PLO5 PLO6		PLO6	Teaching Methods	Assessment				
CLO 1	~						Lectures, tutorials	Test, Quizzes, Final examination	
CLO 2	✓	√					Lectures, tutorials	Test, Quizzes, Final examination, Assignment	
CLO 3		~	~	~			Laboratory practical	Lab reports, Presentation	

				т	eachir	ng and	Learning Activ	vities	
	Course Content Outline	CLO*	Guide	d Lear	ning (l	F2F)	Guided	Independent	Total
			L	Т	Р	0	Learning (NF2F) e.g., e- Learning	Independent Learning (NF2F)	SLT
<b>1. Aci</b> 1.1 1.2 1.3 1.4 1.5	Is and Bases Theory of acids and bases (Arrhenius, Lewis, Bronsted- Lowry) Conjugate acid-base pair Strengths of acids and bases The terminology of pH, pOH, Kw, $K_{a}$ , and $K_{b}$ and application in calculations Buffer solution	1,2,3	6	2	2			10	20
<b>2. Elec</b> 2.1 2.2 2.3 2.4 2.5	trochemistry Half-cell and redox reaction Standard electrode potential Galvanic cell Nernst equation Electrolytic cell	1,2	4	2				6	12
3. Rea	ction Kinetics								
3.1 3.2 3.3 3.4 3.5	Rate of reaction and stoichiometry Determination of rate law Relationship between reactant, concentration, and time half-life of a reaction Activation of energy and enzymes as catalysts Factors affecting the rate of chemical reaction	1,2,3	4	2	2			8	16
4. Alco	phols								
4.1 4.2 4.3	Classification of alcohols (naming, physical properties) Reaction to form halogen alkanes, reaction with sodium, oxidation, dehydration, esterification lodoform test, Lucas' test	1,2,3	2	1	2			5	10
5. Phe	nols								
5.1 5.2	Naming and physical properties Acidity, reaction with sodium hydroxide, nitration and halogenation	1, 2	2	1				3	6
6. Carl	oonyl Compounds			1					
6.1 6.2 6.3 6.4	Naming and physical properties Oxidation, reduction, the addition of HCN, nucleophilic addition Reaction with 2,4-dinitrophenyl hydrazine Aldehydes	1, 2, 3	5	2	2			10	19

<ul> <li>6.5 Ketones</li> <li>6.6 Tri-iodomethane reaction/test, Tollens' reagent, Fehling's solution</li> </ul>								
<ul> <li>7. Carboxylic acid</li> <li>7.1 Naming, physical properties and acidity</li> <li>7.2 Formation from the oxidation of alkene, alkylbenzenes and primary alcohols and hydrolysis of nitriles</li> <li>7.3 Reduction</li> </ul>	1, 2, 3	4	1	2			8	15
8. Acyl Chloride Reaction with alcohols, phenols and primary amines	1,2	1					2	3
<b>9. Esters</b> Esterification process, hydrolysis and reduction with LiAIH <sub>4</sub>	1,2,3	1		2			3	6
<ul> <li>10. Nitrogen Compounds</li> <li>10.1 Primary amines</li> <li>10.2 Amides</li> <li>10.3 Classification, naming, formation of compounds, reaction</li> <li>10.4 Diazonium compounds</li> <li>10.5 Amino acids: formation of zwitterions</li> <li>10.6 Proteins: identify linkage, structure</li> </ul>	1, 2	5	2				7	14
11. Synthetic Polymers								
<ul><li>11.1 Chain growth polymers (addition polymerisation), photopolymers, copolymers)</li><li>11.2 Condensation polymerisation</li></ul>	1, 2	2	1				3	6
Total		36	14	12			65	127
Lab Practical: 1. Acids & Bases 2. Factors Affecting the Rate of Chen 3. Classification of Alcohols 4. Aldehydes and Ketones 5. Carboxylic Acids & Its Derivatives 6. Physical Properties of Esters & So	nical Reac ap Produc	tion						Tetel
Assessment	Percent	age (%)		F2	2F		NF2F	l otal SLT
Lab reports	15	%		3	3		6	9
Tests	20	1%		2	2		6	8
Assignments	15	%		2	2		4	6
Final Examination	50	1%		2.	5		7.5	10
						GR	AND TOTAL SLT	160
L = Lecture, T = Tutorial, P = P *Indicates t	ractical, C he CLO ba	) = Other ased on t	s, F2F he CL	<sup>-</sup> = Faα .O's nι	ce to F Imber	Face, NF2F = N ing in Item 8	on Face to Face	I

- 11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:

- G. Wade, Jr. (2013). Organic chemistry (8th ed.). Pearson.
- Siti Asiah Ahmad Junan (2009). *Organic chemistry for matriculation* (2nd ed.). Oriental Academic Publication.
- 13. Other additional information:

- 1. Course Name and Code: BIOLOGY I
- 2. Synopsis: This course is designed to expose students to basic knowledge and understanding of biology. Training in basic manipulative scientific skills will also be provided in carrying out experiments in biology. The major disciplines in biology covered in this course are the basic concepts and features of cells, genetics reproduction, development and growth.
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Nil
- 7. Course learning outcomes (CLO):

Upon completion of the course, students should be able to:

CLO 1- analyse information to solve problems related to biological principles.

CLO 2- conduct biological experiments in designated topics using standard laboratory equipment to answer hypotheses in lab reports.

CLO 3- apply cognitive skills in the formulation of problems, data gathering and analysis, and interpretation of results to solve biological problems.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course Learning		Programi	me Learr	ning Outco	omes (PLC	)	Teaching	Assessment	
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods		
CLO 1	~	~					Lectures, Tutorials	Test, Final Examination	
CLO 2		~	~				Laboratory Practicals	Laboratory Reports	
CLO 3			~		~		Lectures, Discussion & Presentations	Assignment (Essay)	

				tivities					
			Gu	ided	Learn	ing	Guided	Indonandant	Tatal OLT
	Course Content Outline	CLO*		(F.			(NF2F)	Learning	Total SLT
			L	I	Р	0	e.g., e- Learning	(NF2F)	
1.	Basic Elements in Life1.1Water1.2Protein1.3Lipid1.4Carbohydrate1.5Nucleic AcidLab 1. Basics in using a microscopeLab 2. Food tests	1,2	4	2	4		3	12	25
2.	Cell Structures and Functions 2.1 Cell theory 2.2 Prokaryotic cells 2.3 Eukaryotic cells 2.4 Plant & animal cells 2.5 Cell wall, cell membranes and cytoplasm: structure, function & distribution 2.6 The cell as a basic unit in organisms	2	3	1	2			7	13
3.	Cell Transport         3.1       Active transport         3.2       Passive transport         3.3       Pinocytosis         3.4       Phagocytosis         Lab 4.       Transport across membranes	2,3	2	1	2			7	12
4.	Cell Division4.1The concept of cell division4.2Cell cycle4.3Mitosis4.4Meiosis	1	3	2				3	8
5.	Cell Respiration5.1 Respiration5.2 Aerobic respiration5.3 Anaerobic respirationLab 5. Cell respiration	1,2, 3	2	1	2		1	6	12
6.	Genetic Inheritance6.1Mendelian genetics6.2Deviations from Mendelian Inheritance6.3Genetic mapping	1,2,3	3	2		4		3	12

7.	Population Genetic7.1Concept of a gene pool7.2Hardy-Weinberg Law	1,3	1	1				1	3			
8.	<ul> <li>Expressions of Biological Information</li> <li>8.1 DNA and genetic information</li> <li>8.2 DNA replication</li> <li>8.3 Protein synthesis: transcription and translation</li> <li>8.4 Gene regulation an expression: Lac Operon</li> <li>8.5 Gene technology: recombinand DNA &amp; cloning</li> </ul>	n 1,2,3 d	4	3		2		3	12			
9.	Mutation9.1Concept of mutation9.2Genetic mutation9.3Chromosomal mutation	1,3	1	1				1	3			
10.	<b>Reproduction and Development</b> 10.1 Asexual reproduction 10.2 Sexual reproduction 10.3 Human reproductive system 10.4 Fertilisation and embryology 10.5 Roles of hormones	1,2,3	4	4		3		3	14			
11.	Growth         11.1 Growth phases and measurement         11.2 Growth patterns and rates         11.3 Growth under extreme conditions		3	2		3	1	2	11			
	Total	<b>I</b>	30	20	10	12	5	48	125			
	Laboratory Practical (10 hours): Lab 1. Basics in using a microscope Lab 2. Food tests Lab 3. Cell structure and organelles Lab 4. Transport across membranes Lab 5. Cell respiration											
	Assessment Pe	rcentage	(%)		F	2F		NF2F	Total SLT			
Lab	reports	20				2		5				
I est	s	10				1		3	20			
Fina	I Examination	 50				2		16	15			
		00				-			10			
							GRA	ND TOTAL SLT	160			
	L = Lecture, T = Tutorial, P = Practical, O = Others, F2F = Face to Face, NF2F = Non Face to Face *Indicates the CLO based on the CLO's numbering in Item 8.											

11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):

Biology/science laboratory

#### 12. Recommended text/reading:

- •
- Glen and Susan Toole (2015). *Biology in context*. (2nd ed.). Nelson Thornes. Leong, L.S. Sudin, S. Rashid, K.A. Ching, L.S. Aziz N.A.A. and Zakaria, F. (2016). *Biology for matriculation* semester 1 (5th ed.). Oxford Fajar Sdn. Bhd., Selangor. •
- 13. Other additional information:

- 1. Course Name and Code: PHYSICS I
- 2. Synopsis: This course is designed to enable students to learn the basic concepts and principles of elementary physics. The topics include mechanics, gravitation, statics, states of matter, fluids, simple harmonic motion, waves, wave optics and sound.
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Nil
- 7. Course learning outcomes (CLO):

Upon completion of the course, students should be able to:

CLO 1- state and explain the basic concepts in physics in mechanics, gravitation, statics, states of matter, fluids, simple harmonic motion, waves, wave optics and sound.

CLO 2- use basic principles of physics to solve physics problems in mechanics, gravitation, statics, states of matter, fluids, simple harmonic motion, waves, wave optics and sound.

CLO 3- apply basic principles of physics in laboratory works in mechanics, gravitation, statics, states of matter, fluids, simple harmonic motion, waves, wave optics and sound.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course	Pro	gramme	e Learnii	ng Outco	omes (P	LO)	Toaching		
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods	Assessment	
CLO 1	~	~					Lectures and Tutorials	Quizzes, Tests, and Final Examination	
CLO 2	~	~					Lectures and Tutorials	Quizzes, Tests, Assignments, and Final Examination	
CLO 3		~	~				Laboratory Practical	Laboratory Report	

10.	Distribution	of Student	Learning	Time	(SLT):
10.	Distribution	or orugent	Louining	THILE I	

				Teaching and Learning Activities									
	Course Content Outline	CLO*	Le	Gui arnin	ded ig (F2	2F)	Guided Learning (NE2E)	Independent	Total SLT				
			L	т	Р	0	e.g., e- Learning	(NF2F)					
1.	Mechanics (Circular Motion)												
	<ul> <li>1.1 Displacement, velocity and angular acceleration (relation between circular motion and linear motion)</li> <li>1.2 Circular motion under constant angular acceleration</li> <li>1.3 Centripetal acceleration and centripetal force</li> <li>1.4 Motion on a curve – level and banked curves</li> <li>1.5 Circular motion in a horizontal circle</li> <li>1.6 Circular motion in a vertical circle.</li> <li>1.7 Conical pendulum</li> <li>1.8 Centre of mass &amp; torque</li> <li>1.9 Moment of inertia and parallel axes theorem</li> <li>1.10 Rotational kinetic energy</li> <li>1.11 Angular momentum &amp; conservation of angular momentum</li> </ul>	1,2,3	12	4	3			17	36				
2.	Gravitation 2.1 Newton's law of gravitation 2.2 Gravitational acceleration 2.3 Gravitational potential energy 2.4 Motion of satellites 2.5 Escape velocity	1,2	3	1				5	9				
3.	States of Matter3.1 Deformation of solids and elasticity3.2 Stress, strain and Young's modulus3.3 Hooke's law, shear modulus and bulk modulus	1,2,3	3	1	3			5	12				
4.	<ul> <li>Fluid</li> <li>4.1 Hydrostatics – Buoyancy and Archimedes' principle</li> <li>4.2 Hydrodynamics – flow rate, continuity principle &amp; Bernoulli's principle</li> <li>4.3 Poiseuille's law, viscosity &amp; Stoke's law</li> </ul>	1,2	3	1				3	7				
5.	<ul> <li>Simple Harmonic Motion</li> <li>5.1 Kinematics of simple harmonic motion in spring and simple pendulum</li> <li>5.2 Energy in simple harmonic motion.</li> <li>5.3 Damped and forced oscillations &amp; resonance</li> </ul>	1, 2,3	3	1	3			5	12				

6.	Waves									
	<ul> <li>6.1 Properties and types of waves</li> <li>6.2 Propagation of wave on a stretched string &amp; progressive wave</li> <li>6.3 Huygens' principle &amp; superposition principle</li> </ul>	1, 2	3	1				5	9	
7.	Waves Optics									
	<ul> <li>7.1 Constructive and destructive interference</li> <li>7.2 Stationary waves</li> <li>7.3 Single slit diffraction and diffraction grating</li> <li>7.4 Light interference – Young's double slit experiment</li> <li>7.5 Newton's ring &amp; interference in thin films</li> <li>7.6 Polarisation – Malus' law and Brewster's law</li> </ul>	1, 2, & 3	6	2	3			9	20	
8.	Sound									
	<ul> <li>8.1 Sound wave properties and speed of sound</li> <li>8.2 Intensity and sound level (decibel scale)</li> <li>8.3 Resonance – sound waves in pipe column (closed pipe)</li> <li>8.4 Resonance – sound waves in pipe column (open pipe)</li> <li>8.5 Doppler effect</li> </ul>	1,2,3	6	2	3			9	20	
	Total		39	13	15			58	125	
La Ur	boratory Practicals (15 hours) der the topics of: 1. Mechanics (Circular Motion) 2. States of Matter 3. Simple Harmonic Motion 4. Wave Optics 5. Sound		1						Total	
	Assessment	Percen	tage	(%)			F2F	NF2F	SLT	
Qı	uizzes/ Assignments	1	5				1	4	5	
Те	sts	1	5				1	4	5	
La	boratory Report	20					2	5	7	
Fir	nal Examination	5	50				2	16	18	
							GRAN	D TOTAL SLT	160	
	L = Lecture, T = Tutorial, P = Practical, O = Others, F2F = Face to Face, NF2F = Non Face to Face *Indicates the CLO based on the CLO's numbering in Item 8									

11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):

#### 12. Recommended text/reading:

- Serway, S. A. & Vuille, S. (2015). College physics (10th ed.). Cengage Learning.
- Halliday, D. A., Resnick, R. & Walker, J. (2014). *Fundamentals of physics* (10th ed.). Wiley.
- Young, H. D. & Freedman, R. A. (2015). *University physics with modern physics* (14th ed.). Addison Wesley.
- 13. Other additional information:

- 1. Course Name and Code: MATHEMATICS II
- 2. Synopsis: This course is designed to develop students' confidence with mathematical concepts and relationships and use of mathematics and statistical skills and techniques in a range of contexts specifically problem solving and abstract thinking. The topics covered are series, polynomials, algebra, logarithm and exponents, trigonometry, and discrete and continuous distributions.
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Mathematics I
- 7. Course learning outcomes (CLO):

Upon completion of the course, students should be able to:

CLO1- describe the fundamental concepts and principles of various mathematical methods.

CLO 2- apply arrange of mathematical skills as a logical and coherent subject.

CLO 3- solve problems through a quantitative approach.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course Learning	F	Programm	ie Learnii	<b>D</b> )	Teaching	Assessment			
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods		
CLO 1	~						Lectures, Tutorials	Assignments, Quizzes, Final Examination	
CLO 2	~	~	~			~	Lectures, Tutorials	Assignments, Quizzes, Final Examination	
CLO 3		~	~			~	Lectures, Tutorials	Assignments, Quizzes, Final Examination	

			Teaching and Learning					vities	
	Course Outlines	CLO*	Guio	ded L (F2	earni F)	ing	Guided Learning (NF2F)	Indepen dent Learnin	Total SLT
			L	т	Ρ	ο	e.g., e- Learning	g (NF2F)	
1.	<ul> <li>Sequence and Series</li> <li>1.1 Definition of sequence and notation</li> <li>1.2 Arithmetic and geometric progressions</li> <li>1.3 Binomial expansions</li> <li>1.4 Use of series for approximation</li> </ul>	1,2	3	3				6	12
2.	<ul> <li>Polynomial Functions</li> <li>2.1 Addition, subtraction and multiplication of polynomials</li> <li>2.2 The meaning of the degrees and coefficients of polynomials</li> <li>2.3 The condition for the equality of two polynomials</li> <li>2.4 The factors and roots of polynomials</li> <li>2.5 The remainder and factor theorems</li> <li>2.6 Application of the factor theorem and remainder theorem in relation to factors, polynomial equations or unknown coefficients</li> </ul>	1,2	3	3				6	12
3.	Algebra 3.1 The definition of $ x $ 3.2 Solutions of algebraic equations and inequalities 3.3 $ a  =  b  \Leftrightarrow a^2 = b^2$ and $ x - a $ $$	1,2	2	2				4	8
4.	<ul> <li>Logarithms and Exponents</li> <li>4.1 Integral and rational exponents</li> <li>4.2 Relationship between logarithms and exponents</li> <li>4.3 The laws of exponents and laws of logarithms and different bases</li> <li>4.4 Equations and inequalities of exponents and logarithms</li> </ul>	1,2	3	3				6	12
5.	<ul> <li>Trigonometry</li> <li>5.1 The law of sines</li> <li>5.2 The law of cosines</li> <li>5.3 The area of a triangle</li> <li>5.4 Equations in a harmonic form</li> <li>5.5 Knowledge of the secant, cosecant and cotangent; their relationship to cosine, sine and tangent</li> <li>5.6 Simplification and exact evaluation of expressions</li> </ul>	1,2,3	3	3				6	12

			1	1	1	1	
6.	<ul> <li>Vectors</li> <li>6.1 The significance of symbols in the equation of a straight line of the form r = a + tb</li> <li>6.2 Types of lines: parallel, intersect or skew</li> <li>6.3 The angle between two lines and the point of intersection of two lines, if any</li> <li>6.4 The significance of symbols in the equation of a plane of the form ax + by + cz = d or (r - a) • n = 0</li> <li>6.5 The line of intersection of two non-parallel planes and the angle between two planes</li> </ul>	1,2,3	3	3		6	12
7.	Complex Numbers7.1The idea of a complex number (real part, imaginary part, modulus, argument, and conjugate)7.2Equality of two complex numbers7.3Operations of two complex numbers7.4Representation of complex numbers in an Argand diagram7.5Multiplication and division of two complex numbers in polar form $r(cos\theta + i sin \theta) \equiv re^{i\theta}$ 7.6The two square roots of a complex number7.7Geometrical and of addition, subtraction, multiplication, and division of two complex number	1,2,3	3	3		6	12
8.	<ul> <li>Discrete Random Variable</li> <li>8.1 Concept of a discrete random variable</li> <li>8.2 Probability distribution table</li> <li>8.3 The concept of mathematical expectation</li> <li>8.4 Mean and variance of a discrete random variable</li> </ul>	1,2,3	2	2		4	8
9.	<ul> <li>Binomial &amp; Poisson Distributions</li> <li>9.1 Formulae for probabilities for the Binomial distribution and Poisson distribution</li> <li>9.2 Poisson distribution as an approximation to the binomial distribution, where appropriate</li> <li>9.3 If X and Y have independent Poisson distributions, then X + Y has a Poisson distribution</li> </ul>	1,2	2	2		4	8

10.	<ul> <li>Continuous Random Variable</li> <li>10.1 Probability density function</li> <li>10.2 Relationship between the probability density function and the cumulative distribution function</li> <li>10.3 Mean and variance of a continuous random variable</li> </ul>	1,2,3	2	2			4	8
11.	<ul> <li>Normal Distribution</li> <li>11.1 Standardising a normal variable</li> <li>11.2 Normal distribution tables</li> <li>11.3 Normal distribution as an approximation to the binomial distribution, where appropriate</li> </ul>	1,2,3	2	2			4	8
	Total		28	28			56	112
	Assessment	Perc	entage	e (%)		F2F	NF2F	Total SLT
Quizz	es & Assignments		30			2	12	14
Tests			20			1	9	10
Final	Examination		50			2	22	24
						GRAN	D TOTAL SLT	160
	L = Lecture, T = Tutorial, P = Practical, ( *Indicates the CLO b	D = Others ased on th	s, F2F = ne CLC	= Fac 's nu	e to Fa mberin	ce, NF2F = g in Item 8	Non Face to Fac	ce

- 11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:

- John, W. C. (2015). Algebra & trigonometry (3rd ed.). McGraw-Hill, New York.
- Weiss, N. A. (2016). Introductory statistics (10th ed.). Pearson.
- Devore, J. L. (2015). *Probability and statistics for engineering and the sciences* (9th ed.). Cengage Learning, Boston.
- 13. Other additional information:

#### PHYSICAL SCIENCES (SPECIALISATION)

- 1. Course Name and Code: PHYSICS II
- Synopsis: This course is designed to enable students to study the extension of basic concepts and principles of physics. This course covers topics such as modern physics, electrostatics, electricity, magnetism, electromagnetism, heat and thermodynamics.
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Physics I
- 7. Course learning outcomes (CLO):

Upon completion of the course, students should be able to:

CLO 1- state and explain the basic concepts in physics in the topics of modern physics, electrostatics, electricity, magnetism, electromagnetism, heat and thermodynamics.
CLO 2- use the basic principles of physics to solve physics problems in modern physics, electrostatics, electricity, magnetism, electromagnetism, heat and thermodynamics.
CLO 3- apply the basic principles of physics in laboratory works in modern physics, electrostatics, electricity, magnetism, electromagnetism, heat and thermodynamics.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course	P	rogramm	e Learnir	ng Outcoi	mes (PLC	<b>)</b> )	Teaching	_	
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods	Assessment	
CLO 1	~	~			~		Lectures and Tutorials	Quizzes, Test, and Final Examination	
CLO 2	~	1			~		Lectures and Tutorials	Quizzes, Test, Assignments, and Final Examination	
CLO 3		~	~				Laboratory Practical	Laboratory Report	

				Теа	achin	g an	d Learning A	Activities	
	Course Content Outline	CLO*	Gui	ded I (F2	₋earn 2F)	ing	Guided Learning (NF2F)	Independent Learning	Total SLT
			L	т	Ρ	0	e.g., e- Learning	(NF2F)	
1.	<ul> <li>Electrostatics</li> <li>1.1 Electric charges and Coulomb's law</li> <li>1.2 Electric field &amp; electric flux</li> <li>1.3 Gauss' law</li> <li>1.4 Electric potential energy &amp; distribution of charges and electric potential</li> <li>1.5 Capacitor – dielectric and energy storage</li> <li>1.6 Combination of capacitor – series and parallel</li> </ul>	1,2	6	2				8	16
2.	<ul> <li>Electricity (Direct Current)</li> <li>2.1 Electrical conduction, drift velocity of charges in a conductor</li> <li>2.2 Current density, resistance and resistivity</li> <li>2.3 Electromotive force</li> <li>2.4 Energy and power in an electrical circuit.</li> <li>2.5 Kirchoff's rules – concept</li> <li>2.6 Kirchoff's rules – examples of circuit</li> <li>2.7 Electrical measurement – Wheatstone bridge - potential divider</li> </ul>	1,2,3	6	2	3			9	20
3.	<ul> <li>Electricity (Alternating Current)</li> <li>3.1 Average and root mean square (rms) values for current and voltage.</li> <li>3.2 Phasor diagram and potential difference</li> <li>3.3 R-L-C circuit</li> <li>3.4 Resistance, reactance, and impedance</li> <li>3.5 R-L circuit (power &amp; energy)</li> <li>3.6 R-C circuit (power &amp; energy)</li> <li>3.7 R-L-C circuit (power &amp; energy)</li> </ul>	1,2,3	6	2	3			9	20
4.	<ul> <li>Magnetism</li> <li>4.1 Magnetic field of charges</li> <li>4.2 Magnetic force on moving charges</li> <li>4.3 Magnetic force on current carrying conductor</li> <li>4.4 Ampere law</li> <li>4.5 The force between two current carrying conductors (concept and calculations)</li> <li>4.6 Charges in electric and magnetic fields</li> </ul>	1,2,3	6	2	3			9	20

									r	1
5.	<ul> <li>Electromagnetism</li> <li>5.1 Introduction to magnetic flux</li> <li>5.2 Induced electromotive force</li> <li>5.3 Faraday law &amp; Lenz law</li> <li>5.4 Electromagnetic induction in conductor</li> <li>5.5 Mutual and self induction</li> <li>5.6 Energy stored in an inductor</li> <li>5.7 Transformer</li> </ul>	a	1, 2,3	6	2	3			9	20
6.	<ul> <li>Heat</li> <li>6.1 Heat transfer process: conductor convection and radiation</li> <li>6.2 Thermal expansion: linear, s and volume</li> </ul>	1,2	3	1				5	9	
7.	Thermodynamics7.1Ideal gas equation7.2Kinetic theory of gases7.3Velocity distribution of gases7.4Energy in gas7.5The first law of thermodynamic7.6Isobaric and isovolumetric p7.7Adiabatic and isothermal pro7.8Isobaric, isovolumetric, adiaisothermal graphs	ics rocess ocess batic and	1,2,3	6	2	3			9	20
	Total			39	13	15			58	125
								-		
	Assessment	Percenta	age (%)		F:	2F			NF2F	Total SLT
Qui	zzes/ Assignments	15	5			1			4	5
Tes	st	15	5			1			4	5
Lab	oratory Report	20	)		1	2			5	7
Fin	al Examination	50	)			2			16	18
								GRAN	ID TOTAL SLT	160
	L = Lecture, T = Tutorial, F *Indica	• = Practicates the CL	al, O = O O based	thers, on the	F2F e CLC	= Fac )'s nu	e to F mber	Face, NF2F ing in Item 8	= Non Face to Fa	ace

11. Identify special requirement or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):

#### 12. Recommended text/reading:

- •
- •
- Serway, S. A. & Vuille, S. (2015). *College physics* (10th ed.). Cengage Learning. Halliday, D. A., Resnick, R. & Walker, J. (2014). *Fundamentals of physics* (10th ed.). Wiley. Young, H. D. & Freedman, R. A. (2015). *University physics with modern physics* (14th ed.). • Addison Wesley.
- 13. Other additional information:

- 1. Course Name and Code: ENGINEERING MATHEMATICS
- 2. Synopsis: This course will enable students to study the basic concepts of calculus. Topics include functions, limits, derivatives and integrals of polynomial, rational, radical, exponential and logarithmic functions with a strong emphasis on engineering application.
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Mathematics I
- 7. Course learning outcomes (CLO):

Upon completion of the course, students should be able to:

- CLO 1- find the limit of a function and identify the existence of a limit.
- CLO 2- find integrals using the various integral methods.
- CLO 3- apply appropriate techniques to solve differentiation problems.
- 8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course		Program	ne Learni	ing Outco	omes (PLC	<b>)</b> )	Teeching			
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods	Assessment		
CLO 1		~					Lectures, tutorials	Assignments, Quizzes, Test, Final Examination		
CLO 2		~	~				Lectures, tutorials	Assignments, Quizzes, Test, Final Examination		
CLO 3		~	~		~		Lectures, tutorials	Assignments, Quizzes, Test, Final Examination		

				Activities					
	Course Content Outline	CLO*	Guid	ed Le (F2F	earni <sup>-</sup> )	ng	Guided Learning	Independent	Total SLT
			L	т	Р	0	(NF2F) e.g., e- Learning	Learning (NF2F)	
1	Limits 1.1 The existence and the value of the left-hand limit, right- hand limit, or limit of a function 1.2 The continuity of a function	1,2	4	4				8	16
2	Differentiation								
	<ul> <li>2.1 Notations f'(x), f''(x), dy/dx and d<sup>2</sup>y/dx<sup>2</sup></li> <li>2.2 Derivatives of exponential, logarithmic and trigonometric functions</li> <li>2.3 Differentiate products and quotients</li> <li>2.4 Use the first derivative of parametric or implicit functions</li> <li>2.5 Higher-order differentiation</li> </ul>	1,2,3	6	4				10	20
3	Application of Differentiation								
	<ul> <li>3.1 Gradients, tangents and normals</li> <li>3.2 Stationary points and sketching graphs</li> <li>3.3 Approximate value for a root using the Newton-Raphson method</li> <li>3.4 Rate of change, minimum values, and maximum values</li> </ul>	2,3	6	4				10	20
4	<ul> <li>Integration</li> <li>4.1 Integration of kf(x) and f(x) ± g(x)</li> <li>4.2 Integrate a rational function by means of decomposition into partial fractions</li> <li>4.3 Use substitutions to obtain integrals</li> <li>4.4 Use integration by parts</li> <li>4.5 Definite integrals</li> <li>4.6 Approximate values by using the trapezium rule</li> </ul>	2,3	7	5				12	24
5	<ul> <li>Differential Equations</li> <li>5.1 Order and degree of a differential equation</li> <li>5.2 The first order differential equation with separable variables</li> <li>5.3 The first order homogeneous differential equation</li> <li>5.4 Family of solution curves</li> <li>5.5 Problems that can be</li> </ul>	1,2,3	10	6				16	32

	modelled by a differential equation								
	Total		33	23				56	112
	Assessment	Percenta (%)	age		F	2F		NF2F	Total SLT
Qu	izzes & Assignments	30				2		12	14
Те	st	20				1		9	10
Fir	nal Examination	50				2		22	24
							GRA	ND TOTAL SLT	160
	L = Lecture, T = Tutorial, P = Pr *Indicates th	actical, O = 0 e CLO basec	Others, d on the	, F2F = e CLO	: Fac 's nu	e to Imbe	Face, NF2F ring in Item 8	= Non Face to Face	се

- 11. Identify special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:

- Larson, R. and Edwards, B. (2017). *Calculus of a single variable* (11th ed.). Cengage Learning, USA.
- Strang, G. (2017). Calculus (3rd ed.). Wellesley-Cambridge Press, US.
- Bird, J. (2017). Basic engineering mathematics (7th ed.). Routledge, USA.
- Stewart, J. (2016). Calculus: Concepts and contexts (8th ed.). Cengage Learning, USA.
- 13. Other additional information.

#### 1. Course Name and Code: INTRODUCTION TO PROGRAMMING

2. Synopsis:

This course is designed to develop students' skill in problem solving through designing and developing computer programs. Topics covered are problem-solving techniques, introduction to structured programming, basic algorithms for searching and sorting, and the modular programming approach.

- 3. Names (s) of academic staff:
- 4. Semester Offered: 3
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Nil
- Course learning outcomes (CLO): Upon completion of the course, students should be able to: CLO 1- apply the computational thinking approach in solving problems.
  - CLO 2- design solutions using pseudo codes and flowcharts.
  - CLO 3- develop computer programs using a structured and modular approach.
- 8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course Learning	Pro	ogramme	e Learnii	ng Outco	omes (P	LO)	Teaching	Assassment	
Outcomes (CLO)     PLO1     PLO2     PLO3     PLO4     PLO5     PLO6	Methods	Assessment							
CLO 1	~	~					Lectures, Tutorials, Hands on (lab)	Quizzes, Test, Lab Exercise, Assignments, Final Examination	
CLO 2	~	~	~		~		Lectures, Tutorials, Hands on (lab)	Quizzes, Test, Lab Exercise, Assignments, Final Examination	
CLO 3	1	1			~		Lectures, Tutorials, Hands on (lab)	Lab exercise, Assignment, Project, Final Examination	

				Те	each	ing a	nd Learning A	Activities	Total SLT
	Course Content Outline		Lea	Guio arnin	ded g (F	2F)	Guided Learning (NF2F) e.g., e- Learning	Independent Learning (NF2F)	
			L	Т	Ρ	0			
1	<ul> <li>Problem-Solving Techniques</li> <li>1.1 Computational thinking</li> <li>1.2 Software development life cycle</li> <li>1.3 Computer program development</li> <li>1.4 Computer programming tool revisited: Pseudo code &amp; flowchart</li> </ul>	1	2	1		2	1	3	9
2	<ul> <li>Structured Programming</li> <li>2.1 What is an IDE</li> <li>2.2 Programming language structure: Logic and arithmetic operators, statement, identifiers</li> <li>2.3 Data types &amp; symbols, class of storage, variables &amp; constants (i.e. global, automatic, register, static)</li> </ul>	1	2	1		2	1	3	9
3	<ul> <li>Formatted Input &amp; Output</li> <li>3.1 Library file stdio.h, math.h, stdlib.h, string.h</li> <li>3.2 Output formatting (print, format specifier &amp; escape sequences)</li> <li>3.3 Input formatting (read, address, operator &amp; style)</li> </ul>	1	2	1		2	1	3	9
4	<ul> <li>Sequential Control Structure</li> <li>4.1 Arithmetic calculations &amp; expressions</li> <li>4.2 Arithmetic errors &amp; inaccuracies in C programming (logic errors vs syntax errors)</li> </ul>	1	2	1		2	1	3	9

5	Simple Selection Control Structure 5.1 Theory, application, & program sample 5.2 if, ifelse structure 5.3 Nested selection structure 5.4 Logical operators 5.5 Input validation (ensuring data entered by the user is correct and match the expectation of the program)	2	2	1	2	2	3	10
6	Complex Selection Control Structure 6.1 Theory, application & program sample 6.2 ifelseifelse structure 6.3 switch case.break structure 6.4 Menu program	2	2	1	2	2	3	10
7	Simple Repetition Control Structure 7.1 Loops: pre-test (for, while) & post-test (do. While) 7.2 Counter controlled (for, while, do. While) 7.3 Sentinel controlled (while, do. While)	2	2	1	2	2	3	10
8	Complex Repetition Control Structure 8.1 Nested Loop 8.2 Infinite Loop Jump statement (i.e. <i>break</i> , <i>continue, return, go to</i> )	2	2	1	2	2	3	10
9	<ul> <li>One-Dimensional and Two- Dimensional Array</li> <li>9.1 Array concept, declaration, &amp; initialisation</li> <li>9.2 String</li> <li>9.3 Searching within an array (linear search, finding the largest/smallest value)</li> <li>9.4 Sorting (bubble sort)</li> </ul>	3	2	1	2	2	3	10
10	Modular Programming(Subprogram) I10.1 User-defined functions, standard library functions, and the advantage of using functions10.2 Function definition and function call10.3 Global and local variables' scope	3	2	1	2	2	3	10
11	Modular Programming (Subprogram) II 11.1 Call-by-value 11.2 Call-by-reference (variable, array)	3	2	1	2	2	3	10

12	<ul> <li>File Oriented Input and Output</li> <li>12.1 Concepts of I/O text files (files vs. streams)</li> <li>12.2 Retrieving text files</li> <li>12.3 Creating &amp; copying text files</li> <li>12.4 Additional I/O functions</li> </ul>	2	2	1		2	2	3	10	
13	One-Dimensional and Two- Dimensional Array	3	2	1		2	2	3	10	
14	Combination of Control Structures, Arrays and 32Subprograms	3	2	1		2	2	3	10	
	Total		28	14		28	24	42	136	
	Assessment		Р	ercer	ntag	e (%)	)	Total S	LT	
Quiz	zes				10			2		
Test					15			6		
Assig Lab e	gnments: exercises				10			Counted for unde	r column 'O'	
Assig	gnments				10			Counted for unc 'Guided N	ler column F2F'	
Proje	ect				15			10		
Final	Examination				40			6		
				G	RAN	ND TO	DTAL SLT	160		
	L = Lecture, T = Tutorial, P = Prace *Indicates the	ctical, O CLO bas	= Oth sed o	ers, F n the	E2F CLC	= Fac )'s nu	e to Face, NF mbering in Ite	2F = Non Face to m 8	Face	

- 11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
  - Computer lab, programming development tool (IDE)
- 12. Recommended text/reading:

- Deitel, P. J., & Deitel, H. M. (2016). C: How to program (8th ed.). New York, NY: Pearson.
- Mittal, M., & Porwal, S. (2016). *C programming* (ISBN 978-1-84265-644-0). Oxford: Alpha Science Intl.
- 13. Other additional information

### LIFE SCIENCES (SPECIALISATION)

- 1. Course Name and Code: BIOLOGY II
- 2. Synopsis: This course is designed to enable students to be able to analyse data, evaluate biological problems, and propose possible solutions to problems based on biological principles. Based on the basic knowledge and understanding in Biology I, this course will introduce students to the next level of biology covering biodiversity, ecology, population ecology, variations, biocatalysis, photosynthesis, gaseous exchange, homeostasis, human skeletal system, coordination and immunity.
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Biology I
- 7. Course learning outcomes (CLO):

Upon the completion of this course, students should be able to:

CLO 1- apply the concepts in biology to solve problems related to biological principles.

CLO 2- conduct experiments in designated topics using appropriate scientific methods to answer the hypothesis in a scientific report.

CLO 3- relate biological facts and principles to offer solutions to biological problems.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course	F	Programi	me Learr	ning Outco	omes (PLC	D)	Teaching		
Outcomes (CLO) PLO1 PLO2	PLO3	PLO4	PLO5	PLO6	Methods	Assessment			
CLO 1	~	~					Lectures, Tutorials	Test, Final Examination	
CLO 2		~	~				Laboratory Practicals	Laboratory Reports	
CLO 3		~	~		~		Lectures, Discussion,	Assignment (Essay & Presentation)	

			Teaching and Learning Activities							
	Course Content Outline	CL	Gu	ided (	Learr	ning	Guided	Independe	Total	
	Course Content Outline	0*	L	Т	P	0	(NF2F) e.g., e- Learning	nt Learning (NF2F)	SLT	
1.	<ul> <li>Biodiversity</li> <li>1.1 Concept of biodiversity and taxonomy</li> <li>1.2 Kingdom Monera, Protista, Fungi, Plantae, and Animalia</li> <li>Lab 1 Identifying bacteria using Gram Stain</li> <li>Lab 2 Plant diversity Pteridophyta</li> </ul>	1,2,	4	3	6			10	23	
	Lab 2 Plant diversity Pteridophyta, Bryophyta Gymnosperms & Angiosperms Lab 3 Animal diversity - invertebrates & vertebrates									
2.	<ul> <li>Ecology</li> <li>2.1 Concept of ecosystem</li> <li>2.2 Energy flow</li> <li>2.3 Biogeochemical cycles</li> <li>2.4 Conservation &amp; management of biodiversity</li> <li>2.5 Population growth</li> </ul>	1,3	4	1				5	10	
3.	Variation3.1 Types of variation3.2 Sources of variation3.3 Selection3.4 Speciation	1,3	4	1				5	10	
4.	<ul> <li>Biocatalysis</li> <li>4.1 Enzymes – properties &amp; mechanisms of actions</li> <li>4.2 Classification of enzymes</li> <li>4.3 Cofactors</li> <li>4.4 Inhibition</li> </ul>	1,3	4	1				5	10	
5.	<ul> <li>Photosynthesis</li> <li>5.1 Concept of photosynthesis</li> <li>5.2 Light reaction &amp; dark reaction</li> <li>5.3 An alternative mechanism of carbon fixation</li> <li>5.4 Factors limiting the rate of photosynthesis</li> <li>Lab 4 Photosynthesis</li> </ul>	1,2, 3	4	1	2			9	16	
	Factors limiting the rate of reactions									
6.	<ul> <li>Gaseous Exchange &amp; Its Control</li> <li>6.1 Gaseous exchange &amp; its control in mammals</li> <li>6.2 Chemoreceptors' role in controlling breathing</li> <li>6.3 Gaseous exchange &amp; its control in plants</li> </ul>	1,3	4	1				4	9	
7.	Transport system 7.1 The transport system in mammals – heart & its regulation	1,3	4	1				4	9	

	7.2 Lymphatic system 7.3 Transport in plants									
8.	Homeostasis 8.1 Concept of homeostasis 8.2 Negative feedback mechanism 8.3 Liver 8.4 Kidney Lab 5 Kidney & urine Urinalysis	1,2, 3	4	1	2			10	17	
9.	<ul> <li>9. Coordination</li> <li>9.1 Nervous system</li> <li>9.2 Human skeletal system</li> <li>9.3 Human muscle contractions</li> <li>9.4 Hormones in mammals &amp; plants</li> </ul>			4	3				5	12
10.	<ul> <li>D. Immunity</li> <li>10.1 Concept of immunity</li> <li>10.2 Development of immunity</li> <li>10.3 Immune disorder</li> </ul>			3	2				4	9
		Total		39	15	10			61	125
				T						
	Assessment	Percen (%)	tage )		Fź	2F		NF	2F	Total SLT
Lab	reports	20			2	2		5	5	
Tes	t	10				1		3	3	20
Ass	ignments	20				1		6	5	
Fina	Final Examination				2	2		1	6	15
								GRAND	TOTAL SLT	160
	L = Lecture, T = Tutorial, P= Practical, O = Others, F2F = Face to Face, NF2F = Non Face to Face *Indicates the CLO based on the CLO's numbering in Item 8.									

- 11. Identify special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
  - Biology/science laboratory
- 12. Recommended text/reading: Main references:

- MHE India (2016). Comprehensive chemistry. JEE Advanced.
- Derek B. Lowe (2016). The chemistry book. Sterling Company Incorporated.
- Tracy Poulsen (2015). *Introduction to chemistry*. Create Space Independent Publishing Platform.
- 13. Other additional information:

- 1. Course Name and Code: BIOCHEMISTRY
- 2. Synopsis: This course provides students with the understanding of functional groups, chemical bonds in biochemistry, water, acids and bases, and buffers. Students will also learn about structures and functions of the major classes of biomolecules: amino acids and peptides, proteins, enzymes, coenzymes, vitamins, lipids, nucleic acids and carbohydrates. In addition, students will be exposed to metabolism and electron transportation.
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Biology I
- 7. Course learning outcomes (CLO):

At the end of this course, students should be able to:

CLO 1- explain the basic concepts and principles of biochemistry such as amino acids and peptides, proteins, enzymes and lipid.

CLO 2- conduct biochemistry lab work on nucleic acids, carbohydrates and metabolism to identify and solve problems.

CLO 3- solve problems related to biotechnology, metabolism and electron transportation in response to environmental changes.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course Learning	Pr	ogramme	Learning	Outcom	nes (PLO	))	Teaching	Assassment	
Outcomes (CLO) PLO		PLO2	PLO3	PLO4	PLO5	PLO6	Methods	Assessment	
CLO 1	~						Lectures/ Tutorials	Final Examination	
CLO 2			~				Laboratory	Practical Test	
CLO 3		~					Lectures/ Tutorials	Assignments	

			Teaching and Learning Activities								
	Course Content Outline	CLO*	Lea	Guio arnin	ded g (F2	2F)	Guided Learning	Independent	Total SLT		
			L	т	Р	ο	e.g., e- Learning	(NF2F)			
1.	Introduction to Biochemistry1.1Functional groups1.2Chemical bonds in biochemistry1.3Water – hydrogen bonds, polarity, effect on dissolved biomolecules1.4Acids and bases1.5Buffers	1	4	4				8	16		
2.	<ul> <li>Amino Acids and Peptides</li> <li>2.1 Structures and properties of amino acids</li> <li>2.2 Amino acids can act as acids and bases</li> <li>2.3 Peptic bond</li> <li>2.4 Peptides of physiological interest</li> <li>2.5 Biological activities of polypeptides</li> </ul>	1	4	4			4	4	16		
3.	Proteins3.1Size, composition and properties3.2Functions of proteins3.3Primary structure of proteins3.4Secondary, tertiary and quaternary structures3.5Synthesis of proteins	1	3	3			3	3	12		
4.	Enzymes4.1General properties4.2Mechanisms of enzymes4.3Coenzymes and vitamins	1	2	2			2	2	8		
5.	Lipids5.1Chemistry of lipids5.2Lipids with biological activities5.3Resolution and analysis of lipids5.4Fat-soluble vitamins5.5Constituents of membranes5.6Solute transport across the membrane	1	4	4			4	4	16		
6.	Nucleic Acids6.1Structure of nucleic acids6.2Chemistry of nucleosides and nucleotides6.3Other functions of nucleotidesLab Report 1 (Individual)	2	2	2	2		3	3	12		
7.	Nucleic acids in Biotechnology7.1Recombinant DNA7.2The product of recombinant DNA technology7.3DNA replication and repair7.4Genetic engineering7.5Lab Report 2 (Individual)	2	2	2	2		3	3	12		

8.	Carbohydrates 8.1 Monosaccharide 8.2 Disaccharide 8.3 Polysaccharide 8.4 Glycoprotein and glycolipio Lab Report 3 (Individual)	d	2	2	2	2		3	3	12
9.	<ul> <li>Introduction to Metabolism</li> <li>9.1 Overview of catabolism ar anabolism</li> <li>9.2 The citric acid cycle</li> <li>9.3 Oxidation of fatty acids</li> <li>9.4 Production of urea</li> <li>Lab Report 4 (Individual)</li> </ul>	2	2	2	2		3	3	12	
10.	<ul> <li>Carbohydrate Metabolism</li> <li>10.1 Glycolytic pathways</li> <li>10.2 Regulation to carbohydrat catabolism</li> <li>10.3 Fermentation of carbohydr</li> <li>10.4 Group work assignment: T Choice 1</li> </ul>	3	2	4			3	3	12	
11.	<ul> <li>11. Electron Transport Chain <ul> <li>11.1 Types of electron carriers</li> <li>11.2 Reactions</li> <li>11.3 Mechanism of ATP formation</li> <li>11.4 ATP synthesis coupled with electron flow</li> <li>11.5 Energy considerations</li> <li>11.6 Group work assignment: Topic Choice 2</li> </ul> </li> </ul>			2	4			3	3	12
12.	Responding to Environmental12.1Human diseases and bioc12.2Group work assignment: M Theme	<b>Changes</b> hemistry <i>I</i> lain	3	1	2			1	2	6
		Total		30	35	8		32	41	146
	Assessment	Percenta	age (%)			F2F			NF2F	Total
Final	Examination	53	3			2			6	8
Prac	Practical Test/ Laboratory Report 27					1			3	4
Assi	gnments	20	)			0			3	3
								GRA		161
	L = Locture T = Tutorial D = [	Practical O	- Othoro	EDE	- 500	o to	Faaa			101
	*Indicates	the CLO ba	sed on th	e CLC	– Fac D's nu	imbe	ring i	in Item 8	ION FACE LO FACE	

11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):

12. Recommended text/reading:

- Tortora, G. J. & Derrickson, B. (2018). *Principles of anatomy & physiology* (2nd revised ed.). Australia: John Wiley & Sons, Inc.
- Nelson, D. L. & Cox. M. M. (2017). Lehninger: Principles of biochemistry (7th ed.). New York: W. H. Freeman & Co. Ltd.
- Campbell, N. A., Reece, J. B., Urry, L. A., Cain, M. L., Wassermen, S. A., Minorsky, P. V. & Jackson, R. B. (2016). *Biology* (11th ed.). USA: Pearson.
- Hartwell, L., Hood, L., Goldberg, M., Reynolds, A. & Silver, L. (2015). *Genetics: From genes to genomes* (5th ed.). New York: McGraw-Hill.
- 13. Other additional information:

- 1. Course Name and Code: INTRODUCTION TO PSYCHOLOGY
- 2. Synopsis: This course develops students with an understanding of the concepts, principles, history, and approaches in psychology.
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Nil
- 7. Course learning outcomes (CLO):

Upon completion of this course, students should be able to:

CLO 1- describe the concepts and principles used in psychology, their applications, and their connections.

CLO 2- explain how concepts and methods of psychology can be applied to everyday life situations and in the study of human behaviours.

CLO 3- discuss how the history and study of psychology has developed in terms of approaches and treatments for psychological disorders.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course Learning	Р	rogramme	e Learning	g Outcom	Teaching Matheda	Accomment			
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	reaching methods	Assessment	
CLO 1	~			~		~	Lectures, Tutorials	Presentation/ Quizzes, Written Assignments, Final Examination	
CLO 2	~			~		~	Lectures, Tutorials, Seminars	Quizzes, Written Assignments, Final Examination	
CLO 3	$\checkmark$	~				~	Lectures, Tutorials, Seminars	Quizzes, Written Assignments, Final Examination	

		- ·			Te	achi	ng and Learni	na Activities			
			(14 weeks, 4 hours/week)								
	Course Content Outline		)* Guided Learr (F2F)			ing	Guided Lear	ning (NF2F)	Independe nt	Total SLT	
			L	Т	Ρ	0	e.g., e-∟	earning Learning (NF2F)			
1.	Introduction to psychology – history and approaches	1	4	4			Online resou and exer	rces – notes cises - 4	7	19	
2.	Biology, brain, and behaviour – concepts of consciousness, sensation, perception, etc.	1,2	8	4			Online resou and exer	rces – notes cises - 8	12	32	
3.	Learning and cognition – theories by Pavlov, Piaget, and Skinner	1,2	8	4			Online resou and exer	rces – notes cises - 8	12	32	
4.	Human development – explaining personality, intelligence, motivation and individual differences	1,2	8	4			Online res personality MBT	sources – tests (e.g. I) - 4	12	28	
5.	Social psychology – understanding and managing mental states, stress, and wellness	1,2,3	8	4			Online resou and exer	rces – notes cises - 8	12	32	
	Total		36	20			3	2	55	143	
	Assessment	Perce	entage	(%)			F2F	NF	-2F	Total SLT	
Pre	esentations/Quizzes		20				1		3	4	
Written assignments			30				1		4	5	
Final Examination			50			2			6	8	
								GRAND	TOTAL SLT	160	
	L = Lecture, T = Tutorial, P = *Indicate	= Practica	al, O = O base	Other d on	rs, F2 the C	F = F LO's	ace to Face, N numbering in It	F2 F= Non Fa em 8	ce to Face		

- 11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:

- Johnson, J.G. (2011). *Introduction to psychology* (2nd ed.). Harper Collins Publisher. ISBN-13: 978-0060881528.
- Myers, D.G. and DeWall, C.N. (2015). *Psychology* (11th ed.). Worth Publishers. ISBN-13: 978-1464140815.
- Myers, D.G. (2013). *Psychology* (10th ed.). Worth Publishers. ISBN-13: 978-1429261784.
- 13. Other additional information:
#### ARTS

#### **BUSINESS (CORE)**

- 1. Course Name and Code: INTRODUCTION TO MANAGEMENT
- Synopsis: This course will prepare students with a basic understanding of the nature of management processes in business organisations. It relates to the principles and theories of management, practices of Planning, Organising, Leading, and Controlling (POLC), organisational design and communication within business entities.
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 3
- 6. Prerequisite/co-requisite (if any): Nil
- 7. Course learning outcomes (CLO):

Upon completion of the course, students should be able to:

CLO 1- explain and apply the concepts, practice and role of management processes and tools within business organisations.

CLO 2- describe the management processes, leadership and communication of managers or administrators.

CLO 3- apply management principles in business entities.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course Learning		Program	Programme Learning Outcomes (PLO)				Teaching	Assessment
(CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods	
CLO 1	$\checkmark$	$\checkmark$					Lectures, Tutorials	Presentation, Quizzes/ Test, Assignments, Final Examination
CLO 2	$\checkmark$						Lectures, Tutorials	Presentation, Quizzes/Test, Assignments, Final Examination
CLO 3		$\checkmark$	$\checkmark$			V	Lectures, Tutorials	Presentation, Quizzes/Test, Assignments, Final Examination

# 9. Transferable Skills (if applicable):

			Teaching and Learning Activities							
	Course Content Outline	CLO*	Le	Gui arnin	ded Ig (F2	2F)	Guided Learning (NF2F) e.g., e- Learning	Independent Learning (NF2F)	Total SLT	
			L	т	Ρ	ο				
1.	Nature of Management1.1 Overview of management1.2 Management roles and functions1.3 Types of managers	1	3	2				8	13	
2.	Basic Management Theories2.1 Classical theory2.2 Behavioural theory2.3 Contingency theory	2	3	2			3	5	13	
3.	Planning3.1 The planning process3.2 Goals and objectives of planning3.3 Advantages of planning3.4 Types of plans	2,3	3	2			3	5	13	
4.	Organising 4.1 Organising authority 4.2 Chain of command 4.3 Span of control 4.4 Centralisation and decentralisation	2,3	3	2			3	5	13	
5.	<b>Leading</b> 5.1 Management and leading process 5.2 Power and influence	2,3	3	2			3	5	13	
6.	<ul> <li>Controlling</li> <li>6.1 Control systems</li> <li>6.2 Control models</li> <li>6.3 Production, operations and quality control</li> <li>6.4 Human resource control</li> <li>6.5 Financial control</li> <li>6.6 Strategic control</li> </ul>	1,2,3	3	2			4	6	15	
7.	Leadership 7.1 Leadership theories 7.2 Types of leadership 7.3 Effective leadership	1,2	6	4			2	7	19	
8.	Organisational Structure and Design 8.1 Organisational structure 8.2 Organisational design 8.3 Authority 8.4 Span of control 8.5 Delegation	1,2	3	2			1	8	14	

9.	Communication								
	<ul><li>9.1 Types of communication</li><li>9.2 Effective communication</li><li>9.3 Verbal and non-verbal comm</li></ul>	nunication	2,3	3	4		4	4	15
10.	Motivation10.1Motivational theories10.2Reward systems10.3Empowerment	2,3	3	2		2	6	13	
	Total			33	24		25	59	141
	Assessment	Percenta	age (%)		I	F2F		NF2F	Total SLT
Pres	Assessment entation	Percenta 20	age (%)		1	F <b>2F</b>		<b>NF2F</b>	Total SLT 2
Pres	Assessment entation zes/Tests	Percenta 20 10	age (%) ) )		I	F <b>2F</b> 1 2		<b>NF2F</b> 1 2	Total SLT 2 4
Pres Quiz Assi	Assessment entation zes/Tests gnments	Percenta 20 10 20	age (%)			F2F 1 2 2		<b>NF2F</b> 1 2 2	Total SLT 2 4 4
Pres Quiz Assi Fina	Assessment entation zes/Tests gnments I Examination	Percenta 20 10 20 50	age (%)		 	F2F 1 2 2 2 2		NF2F 1 2 2 7	Total SLT 2 4 4 9
Pres Quiz Assi Fina	Assessment entation rzes/Tests gnments I Examination	Percenta 20 10 20 50	age (%) ) ) )			F2F 1 2 2 2		NF2F 1 2 2 7	TotalSLT2449
Pres Quiz Assi Fina	Assessment eentation zes/Tests gnments I Examination	Percenta 20 10 20 50	age (%) ) ) ) )			F2F 1 2 2 2	GRAN	NF2F 1 2 2 7 ND TOTAL SLT	Total           SLT           2           4           9           160

11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):

12. Recommended text/reading:

- Certo, S.C., & Certo, S.T., (2016). *Modern management: Concepts and skills* (14th ed.). Pearson.
- Robbins, S. P., & Coulter, M.A. (2018). Management (14th ed.). Pearson.
- Robbins, S. P., Coulter, M.A., & De-Cenzo, D.A. (2017). *Fundamentals of management* (10th ed.). Pearson.
- 13. Other additional information:

- 1. Course Name and Code: INTRODUCTION TO MARKETING
- 2. Synopsis: This course provides students with an understanding of marketing concepts, functions and roles in business organisations. It exposes students to product, pricing, distribution, promotion, marketing communication, and basic internet marketing.
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Nil
- Course learning outcomes (CLO):
   Upon completion of the course, students should be able to:
  - CLO 1- explain marketing concepts, theories and strategies in making effective and efficient marketing activities.
  - CLO 2- describe appropriate marketing tools in business activities.
  - CLO 3- apply basic marketing principles in daily marketing decisions.
- 8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course	Prog	gramme	Learnir	ng Outco	omes (P	Teaching		
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods	Assessment
CLO 1	$\checkmark$	$\checkmark$					Lectures, Tutorials	Presentation, Quizzes/Test, Assignments, Final Examination
CLO 2		$\checkmark$					Lectures, Tutorials	Presentation, Quizzes/ Test, Assignments, Final Examination
CLO 3		$\checkmark$	$\checkmark$			$\checkmark$	Lectures, Tutorials	Presentation, Quizzes/Test, Assignments, Final Examination

			Teaching and Learning Activities						Total SLT
	Course Content Outline	CLO*	Lea	Guid	led g (F2	2F)	Guided Learning (NF2F) e.g., e- Learning	Independent Learning (NF2F)	
			L	Т	Ρ	0			
1.	Introduction to Marketing Concepts								
	<ol> <li>1.1 Definition of Marketing and Sales</li> <li>1.2 The core concepts of marketing</li> </ol>	1	3	2				6	11
2.	Marketing Environment								
	<ul><li>2.1 Local environment</li><li>2.2 International environment</li></ul>	1	3	2				8	13
3.	Market Segmentation								
	<ul><li>3.1 Types of segmentation</li><li>3.2 Segmentation strategy</li></ul>	1,2	3	2			3	5	13
4.	Market Targeting and Positioning								
	<ul><li>4.1 Target market</li><li>4.2 Market positioning strategy</li></ul>	2	3	2			2	6	13
5.	Product								
	<ul><li>5.1 Product and service decisions</li><li>5.2 New product development strategy</li><li>5.3 Product lifecycle</li></ul>	2,3	3	2			2	3	10
6.	Price								
	<ul><li>6.1 Pricing approaches</li><li>6.2 New product pricing strategies</li><li>6.3 Product mix pricing strategies</li><li>6.4 Price adjustment strategies</li></ul>	1,2,3	3	2			2	3	10
7.	Place – Distribution / Channelling								
	<ul><li>7.1 Supply chains and network</li><li>7.2 Channel behaviour</li><li>7.3 Channel management</li></ul>	2	3	2			1	4	10
8.	Promotion								
	8.1 Branding strategy	2	3	2			2	5	12
9.	Consumer Behaviour								
	<ul><li>9.1 Consumer buying behaviour</li><li>9.2 Business buying behaviour</li></ul>	2	3	2			2	5	12
10.	Customer Service								
	<ul><li>10.1 Direct marketing</li><li>10.2 Sales promotion</li><li>10.3 After sales services</li></ul>	1,2,3	3	2			2	5	12
11.	Marketing Communication								
	<ul><li>11.1 Advertising</li><li>11.2 Sales promotion</li><li>11.3 Public relation</li></ul>	1,2,3	3	2			3	5	13

	<ul><li>11.4 Personal selling</li><li>11.5 Managing the sales force</li><li>11.6 Direct marketing</li></ul>									
12.	Internet Marketing           12.1         Cyber marketing		0	2	2			4	2	10
	<ul><li>12.2 E-commerce</li><li>12.3 Online marketing &amp; security</li></ul>	2	3	2			4	3	12	
	Total			36	24			23	58	141
	Assessment	Perce	ntage (%)		F	2F		Ν	IF2F	Total SLT
Pres	sentation		10	1					1	2
Quizz	zzes / Tests		20	2					4	
Assig	gnments		20	2				2		4
Final	I Examination		50			2			7	9
	GRAND TOTAL SLT 160									
	L = Lecture, T = Tutorial, P = Practical, O = Others, F2F = Face to Face, NF2F = Non Face to Face *Indicates the CLO based on the CLO's numbering in Item 8									

11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):

#### 12. Recommended text/reading:

- Armstrong, G., and Kotler, P. (2017). Marketing: An introduction (13th ed.). Pearson.
- Solomon, M.R., Marshall, G. W., and Stuart E. W. (2018). *Marketing: Real people, real choices* (9th ed.). Pearson.
- 13. Other additional information:

- 1. Course Name and Code: INTRODUCTION TO LAW
- 2. Synopsis: The course provides students with an understanding of legal concepts, meaning, functions, classification and some basic principles of legal liability. It outlines the brief history, sources and organisation of courts in the English and Malaysian legal system. It also exposes students to legal professions in Malaysia.
- 3. Names (s) of academic staff:
- 4. Semester Offered: Semester
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Nil
- Course learning outcomes (CLO): Upon completion of the course, students should be able to: CLO 1- explain and describe the meaning, functions and classification of law.
  - CLO 2- identify the various sources of law.
  - CLO 3- explain the operations of law and institutions related to it.
- 8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course	Pr	ogramm	e Learnir	0)				
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Teaching Methods	Assessment
CLO 1					$\checkmark$		Lectures, Tutorials (Collaborative Learning)	Project Paper/ Assignment, Quizzes,
CLO 2	$\checkmark$		$\checkmark$		$\checkmark$		Lectures, Tutorials (Collaborative Learning)	Project Paper/ Assignment, Quizzes, Presentation
CLO 3			$\checkmark$	$\checkmark$	$\checkmark$		Lectures, Tutorials (Collaborative Learning)	Presentation, Final Examination

			Teaching and Learning Activities							
	Course Content Outline	CLO	<b>)</b> *	Gui	ded Le (F2F	earnir <sup>-</sup> )	ng	Guided Learning	Indepe ndent	Total
				L	т	Ρ	ο	(NF2F) e.g., e- Learning	Learni ng (NF2F)	SLT
1.	The meaning and functions of law	<b>v</b> 1		4	2				8	14
2.	Major classifications of law									
	<ul><li>2.1 Private and public law</li><li>2.2 Civil and criminal law</li><li>2.3 Municipal and international law</li><li>2.4 Substantive and procedural law</li></ul>	/		4	2				8	14
3.	Law and morality									
	<ul><li>3.1 Law and justice</li><li>3.2 Law and human rights</li></ul>	1		6	2			2	8	18
4.	Some basic principles of legal lia (civil, criminal, contract, and torts)	bility 1		6	2				9	17
5.	Introduction to English legal syst 5.1 Brief history 5.2 Sources of law • Case law • Legislation • Delegated legislation 5.3 Organisation of courts	2,3	3	8	2			4	8	22
6.	Introduction to Malaysian legal s	ystem								
	<ul> <li>6.1 Brief history</li> <li>6.2 The federal constitution</li> <li>6.3 Reception of English law in Mal (Section 3 &amp; 5 of the Civil Law 1956)</li> </ul>	laysia 2,3 Act	3	8	2			4	8	22
7.	Organisation of courts in Malaysi	ia								
	<ul><li>7.1 Jurisdiction of civil courts</li><li>7.2 Jurisdiction of Syariah courts</li></ul>	3		4	2			2	6	14
8.	The legal profession									
	<ul><li>8.1 Public sector</li><li>8.2 Private sector</li></ul>	3		2	2				6	10
	Total			42	16			12	61	131
	Assessment	Percentage	ə (%)			F2F		NF2	2F	Total SLT
Qui	zzes/Tests	20				2		4		6
Pro	ject Paper/Assignments	20				2		4		6
Pre	sentation	10				1		2		3
Fina	al Examination	50				2		12		14
								GRAND TO	TAL SLT	160
	L = Lecture, T = Tutorial, P = Pr *Indicates th	ractical, O = C ne CLO based	Others I on th	, F2F le CL	' = Fac O's nu	e to F mber	ace, ing in	NF2F = Non Fa Item 8	ce to Face	9

- 11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:

- Williams, G. (2016). Learning the law (16th ed.). London: Sweet & Maxwell.
- Partington, M. (2018). *Introduction to the English legal system* (13th ed.). Oxford University Press.
- 13. Other additional information:

- 1. Course Name and Code: FINANCIAL ACCOUNTING
- Synopsis: This course provides students with basic knowledge and skills in accounting concepts, bookkeeping concepts and financial reporting procedures, which are applicable to business entities. Students will learn about the accounting equation, double entry system, journal and ledger, and preparing financial statements for financial reporting purposes.
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any):
- 7. Course learning outcomes (CLO):

Upon completion of the course, students should be able to:

CLO 1- describe and apply concepts and principles of basic financial accounting and its applications in business entities.

CLO 2- explain and apply the concepts and appropriate methods of financial accounting in daily business transactions.

CLO 3- apply basic accounting tools to prepare financial statements.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course Learning	Progra	amme Le	earning	Teaching				
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods	Assessment
CLO 1	$\checkmark$	$\checkmark$						
CLO 2	$\checkmark$			$\checkmark$			Lectures, Tutorials	Quizzes, Test, Project Paper/Assignments, Final Examination
CLO 3				$\checkmark$		V	Lectures, Tutorials	Quizzes, Test, Project Paper/Assignments, Final Examination

				Теа					
Соі	urse Content Outline	CLO*		Guio Leari (F2	ded ning F)		Guided Learning (NF2F) e.g., e- Learning	Total SLT	
			L	Т	Ρ	0			
1.	Introduction – The Context and Purposes of Financial Reporting 1.1 Activities of the accounting process 1.2 Users of accounting information	1	2	0				2	4
2.	Fundamental Accounting Concepts2.1Generally accepted accounting principles2.2Assumptions in financial reporting2.3Principles in financial reporting2.4Qualities of useful information	1	2	2			2	2	8
3.	Accounting Equation 3.1 Assets 3.2 Liabilities 3.3 Owner's equity	1	2	4				6	12
4.	<ul> <li>The use of double-entry and accounting systems</li> <li>4.1 The accounts</li> <li>4.2 Debit and credit</li> <li>4.3 Summary of debit and credit rules</li> </ul>	3	2	4			1	5	12
5.	<ul> <li>Accounting Cycle</li> <li>5.1 Steps in the accounting cycle</li> <li>5.2 Source documents and business transactions</li> <li>5.3 Recording process</li> <li>5.4 Trial balance and financial statements</li> <li>5.5 Closing entries</li> </ul>	3	2	4			2	4	12
6.	Analysis of Business Transactions 6.1 Service 6.2 Merchandising	3	1	4			2	3	10
7.	Journals and Ledgers 7.1 Special journals and general	3	4	8				12	24

7.2 Subsidiary and general ledgers         7.3 Cash book         7.4 Petty cash         7.5 Bank reconciliation         8. Trial Balance         9. Inventory         9. Inventory         9.2 Journal entries         9.3 Valuation of the trial balance         9.4 Inventory         9.2 Journal entries         9.3 Valuation methods – FIFO, LIFO and weighted average         10.1 Accrual         10.2 Pre-payment         10.3 Depreciation         10.4 Bad debts         11.1 Financial Statements         12.2 Accounting Information System         12.1 Basic concepts of Accounting software – examples         12.2 Computerised accounting systems         12.3 Accounting software – examples         12.4 Accounting software – examples         12.5 Tests         20       2         22       48         10.5         22       2         23       2         24       48         25       1         26       8         10.4 Bad debts       1         11.1 Profit and Loss Statements       1         12.2 Computerised accounting system       2         12.3	O = Others, F2F = Face to Face, NF2F = Non Face to Face based on the CLO's numbering in Item 8	ical, O = Other CO based on <sup>+</sup>	orial, P = Pract Indicates the C	L = Lecture, T = Tutoria *Ind			
7.2 Subsidiary and general ledgers         7.3 Cash book         7.4 Petty cash         7.5 Bark reconciliation         8. Trial Balance         8.1 Preparation of the trial balance         8.2 Limitation of the trial balance         9.1 Inventory       2         9.2 Journal entries         9.3 Valuation methods – FIFO, LIFO and weighted average         10.4 Adjustment Entries       2,3         9.3 Valuation methods – FIFO, LIFO and weighted average         10.4 Adjustment Entries         9.3 Valuation methods – FIFO, LIFO and weighted average         10.4 Adjustment Entries         9.3 Valuation methods – FIFO, LIFO and weighted average         10.4 Adjustment Entries         9.3 Valuation methods – FIFO, LIFO and weighted average         11.4 Frinancial Statements         10.3 Depreciation         10.4 Bad debts         11.1 Profit and Loss Statements         11.2 Balance Sheet         12.1 Basic concepts of Accounting Information System         12.2 Computerised accounting systems         12.3 Accounting software – examples         12.4 Basic sontepts of Accounting software – examples         12.3 Accounting software – examples         12.4 Basic sontepts of Accounting software – examples         12.3 Accounting software	GRAND TOTAL SLT 160						
7.2 Subsidiary and general ledgers         7.3 Cash book         7.4 Petty cash         7.5 Bank reconciliation         8. Trial Balance       2       1       4         8.1 Preparation of the trial balance       2       1       4         9. Inventory       2       2       4       6         9. Junet of the trial balance       2       1       4       5         9. Junet of the trial balance       2       2       4       6         9. Junetory       2       2       4       6         9.1 Periodic system and perpetual system       2       2       4       6         9.2 Journal entries       9.3 Valuation methods – FIFO, LIFO and weighted average       6       8       10         10.1 Accrual       10.3 Depreciation       1       6       2       5         11.1 Profit and Loss Statements       3       1       6       2       5         11.2 Balance Sheet       3       1       2       1       2       1       2         12.1 Basic concepts of Accounting Information System       3       1       2       1       2       1       2         12.2 Computerised accounting systems       12.3 Accounting Informati							
7.2 Subsidiary and general ledgers         7.3 Cash book         7.4 Petty cash         7.5 Bank reconciliation         8. Trial Balance         8.1 Preparation of the trial balance         8.2 Limitation of the trial balance         9.1 Inventory       2         9.2 Journal entries         9.3 Valuation methods – FIFO, LIFO and weighted average         10.1 Accrual entries         10.2 Pre-payment         10.3 Depreciation         10.4 Bad debts         11.1 Frinancial Statements         11.2 Balance Sheet         12. Accounting Information System         12.2 Computerised accounting systems         12.3 Accounting software – examples         12.4 Computerised accounting systems         12.3 Accounting software – examples         12.4 Computerised accounting systems         12.3 Accounting software – examples         12.4 Deprecised accounting systems         12.3 Accounting software – examples         12.4 Balance Sheet         12.3 Accounting software – examples         12.4 Balance Sheet         12.5 Accounting software – examples         12.6 Accounting software – examples         12.7 Computerised accounting system         12.8 Accounting software – examples	2 8 10	50	Final Examination				
7.2 Subsidiary and general ledgers         7.3 Cash book         7.4 Petty cash         7.5 Bank reconciliation         8. Trial Balance       2       1       4       5         8. Trial Balance       2       1       4       5         8. I Preparation of the trial balance       2       1       4       5         8. Ilmitation of the trial balance       2       2       4       6         9. Inventory       2       2       4       6         9. Inventory       2       2       4       6         9. Inventory       2       2       4       6         9. Journal entries       9.3 Valuation methods – FIFO, ULFO and weighted average       1       1         10. Adjustment Entries       2,3       2       6       8         10.1 Accrual       10.2 Pre-payment       10.3 Depreciation       1       1         10.4 Bad debts       3       1       6       2       5         11.1 Profit and Loss Statements       1       2       1       2       1       2         12. Accounting Information System       3       1       2       1       2       1       2         12.3 Accoun		30	nts	Project Paper / Assignments			
7.2 Subsidiary and general ledgers         7.3 Cash book         7.4 Petty cash         7.5 Bank reconciliation         8. Trial Balance         8.1 Preparation of the trial balance         8.2 Limitation of the trial balance         9. Inventory         9.2 Journal entries         9.3 Valuation methods – FIFO, LIFO and weighted average         10. Adjustment Entries         9.3 Valuation methods – FIFO, LIFO and weighted average         10. Adjustment Entries         10.2 Pre-payment         10.3 Depreciation         10.4 Bad debts         11.1 Financial Statements         11.2 Balance Sheet         12. Accounting Information System         12.1 Basic concepts of Accounting Information System         12.2 Computerised accounting systems         12.3 Accounting software – examples	tage   F2F   NF2F   Total SLT     2   2   4	<b>centage</b> (%) 20	Pei	Assessment Quizzes / Tests			
7.2 Subsidiary and general ledgers         7.3 Cash book         7.4 Petty cash         7.5 Bank reconciliation         8.       Trial Balance         8.1 Preparation of the trial balance         8.2 Limitation of the trial balance         9.       Inventory         9.2 Journal entries         9.3 Valuation methods – FIFO, LIFO and weighted average         10. Adjustment Entries         9.3 Valuation methods – FIFO, LIFO and weighted average         10.1 Accrual         10.2 Pre-payment         10.3 Depreciation         10.4 Bad debts         11.         Financial Statements         11.2 Balance Sheet         12. Accounting Information System         12.1 Basic concepts of Accounting Information System         12.2 Computerised accounting systems         12.3 Accounting software – examples         2.4 Balance Sheet							
7.2 Subsidiary and general ledgers       7.3 Cash book         7.3 Cash book       7.4 Petty cash         7.5 Bank reconciliation       2         8. Trial Balance       2         8.1 Preparation of the trial balance       2         9.1 Inventory       2         9.1 Periodic system and perpetual system       2         9.2 Journal entries       2.3         9.3 Valuation methods – FIFO, LIFO and weighted average       2         10. Adjustment Entries       2.3         9.3 Valuation methods – FIFO, LIFO and weighted average       2         10. Adjustment Entries       2.3         10.1 Accrual       3         10.2 Pre-payment       3         10.3 Depreciation       3         10.4 Bad debts       3         11. Financial Statements       3         11.2 Balance Sheet       3         12. Accounting Information System       3         12.1 Basic concepts of Accounting Information Systems       3       1         12.2 Computerised accounting systems       1       2         12.3 Accounting software – examples       1       2       1	22 48 10 60 140	22					
7.2 Subsidiary and general ledgers       7.3 Cash book         7.3 Cash book       7.4 Petty cash         7.5 Bank reconciliation       2         8. Trial Balance       2         8.1 Preparation of the trial balance       5         8.2 Limitation of the trial balance       6         9.1 Periodic system and perpetual system       2       2         9.2 Journal entries       9.3 Valuation methods – FIFO, LIFO and weighted average       6         10. Adjustment Entries       2,3       2       6         10.1 Accrual 10.2 Pre-payment       3       1       6       2       5         11.       Financial Statements 11.2 Balance Sheet       3       1       6       2       5	3 1 2 1 2 6	3 1	of ormation accounting ware –	<ul> <li>12. Accounting Information</li> <li>12.1 Basic concepts of Accounting Inform System</li> <li>12.2 Computerised accounting systems</li> <li>12.3 Accounting software examples</li> </ul>			
7.2 Subsidiary and general ledgers	3     1     6     2     5     14	3 1	t <b>s</b> Statements	11. <b>Financial Statements</b> 11.1 Profit and Loss St 11.2 Balance Sheet			
7.2 Subsidiary and general ledgers       7.3 Cash book         7.3 Cash book       7.4 Petty cash         7.5 Bank reconciliation       2         8. Trial Balance       2         8.1 Preparation of the trial balance       5         8.2 Limitation of the trial balance       6         9. Inventory       2       2       4         9.1 Periodic system and perpetual system       2       2       4         9.2 Journal entries       9.3 Valuation methods – FIFO, LIFO and weighted average       20       0       0		2,3 2		10.1 Accrual 10.2 Pre-payment 10.3 Depreciation 10.4 Bad debts			
7.2 Subsidiary and general ledgers         7.3 Cash book         7.4 Petty cash         7.5 Bank reconciliation         8. Trial Balance         8.1 Preparation of the trial balance         8.2 Limitation of the trial balance		2 2	and n ods – FIFO, ted average	<ul> <li>9. Inventory</li> <li>9.1 Periodic system ar perpetual system</li> <li>9.2 Journal entries</li> <li>9.3 Valuation methods LIFO and weighted</li> </ul>			
7.2 Subsidiary and general ledgers       7.3 Cash book       7.4 Petty cash       7.5 Bank reconciliation	2 1 4 5 10	2 1	ne trial trial balance	8. <b>Trial Balance</b> 8.1 Preparation of the balance 8.2 Limitation of the tria			
iournals			eneral on	journals 7.2 Subsidiary and gene ledgers 7.3 Cash book 7.4 Petty cash 7.5 Bank reconciliation			

11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):

#### 12. Recommended text/reading:

- Sangster, A., & Wood, F. (2019). *Business accounting volume 2* (14th ed.). Pearson.
- Sangster, A., & Wood, F. (2018). Business accounting volume 1 (14th ed.). Pearson.
- Weagant, J.J., Kimmel, P.D., & Keiso, D.E. (2018). Accounting principles (12th ed.). Wiley.
- 13. Other additional information:

- 1. Course Name and Code: MANAGEMENT ACCOUNTING
- Synopsis: This course provides students with basic knowledge and skills in managerial accounting concepts, budgeting and costing procedures applicable to business entities. Students will learn about the cost, overhead, cost behaviour, budgets and variance analysis in performing a cost analysis of business organisations.
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value:4
- 6. Prerequisite/co-requisite (if any):
- 7. Course learning outcomes (CLO):

Upon completion of the course, students should be able to:

CLO 1- explain and apply basic management accounting concepts and principles in business.

CLO 2- explain and apply the concepts and appropriate methods of basic management accounting in daily business operations.

CLO 3- apply appropriate basic management accounting methods to analyse, manage, record and report all business transactions.

 Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course Learning	Pr	ogramm	e Learnii	ng Outco	Teaching	Assessment		
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods	
CLO 1	V		$\checkmark$					
CLO 2	$\checkmark$	$\checkmark$					Lectures, Tutorials	Quizzes, Project Paper/Assignments, Final Examination
CLO 3				$\checkmark$		$\checkmark$	Lectures, Tutorials	Quizzes, Project Paper/Assignments, Final Examination

				Teaching and Learning Activities						
	Course Content Outline	CLO*	Guid	led Lea (F2F)	rnir	ıg	Guided Learning (NF2F) e.g., e- Learning	Independen t Learning (NF2F)	Total SLT	
			L	т	Ρ	0				
1.	Introduction to ManagementAccounting1.1Management function1.2Financial Accounting versus Management Accounting1.3Manufacturing cost and non-manufacturing cost1.4Cost of goods manufactured	1	2	4				6	12	
2	Cost for Materials2.1Direct materials and indirect materials2.2Purchase of materials2.3Cost of direct materials used2.4Inventory control	1	1	6			2	5	14	
3	Cost for Labour3.1Direct labour and indirect labour3.2Direct labour cost	1	1	2				3	6	
4	Manufacturing Overhead4.1Indirect cost4.2Actual overhead and applied overhead4.3Normal costing4.4Predetermined overhead rate4.5Under/over-applied overhead	2	1	6			2	5	14	
5	Cost Behaviour5.1Fixed cost5.2Variable cost5.3Mixed cost5.4High-low method	2	2	4			2	4	12	
6	Absorption and Marginal Costing6.1Cost of product6.2Contribution margin6.3Financial statements6.4Reconciliation of net profits	3	2	6				8	16	
7	<b>Break-even analysis</b> 7.1 Importance of break- even analysis	3	2	6			3	5	16	

	7.2 Assumptions for the				T					
	break-even point									
	7.3 Margin of safety									
	7.4 Sensitivity analysis									
8	Budgets	3	2	8			2		8	20
	8.1 Benefits of budgets									
	8.2 Master budget and its									
	components									
	8.3 Sales budget									
	8.4 Production budget									
	8.5 Direct materials budget									
	8.6 Direct labour budget									
	8.7 Manufacturing									
	overnead budget									
0	6.6 Cash budget	3	2	6			1		7	16
9	standard costing	5	2	0			1		'	10
	9.1 Static budget versus									
	9.2 Standard costing									
	9.2 Standard material									
	9.4 Standard Jabour									
	9.5 Standard overhead									
10	Variance analysis	3	1	6			1		6	14
	10.1 Direct material									
	variances									
	10.2 Direct labour variances									
	10.3 Overhead variances									
	Total		16	54			1'	2	57	140
	Total		10	5			1	J	57	140
	Assessment	Percen	tage (%	ລ		F2F			NF2F	Total
	Assessment	I CICCII	uge (/	"					NI 21	SLT
Quizz	es/ Tests	2	20			2			2	4
Proje	ct Paper / Assignments	3	30			1			5	6
Final	Examination	50				2			8	10
-			-						-	-
								GRAN	D TOTAL SLT	160
	I = Lecture T = Tutorial P = Pra	actical. O =	Others	. F2F	= Fa	ce t	o Face.	NF2F	= Non Face to F	ace
	$\mathbf{L} = \mathbf{L}\mathbf{C}\mathbf{C}\mathbf{U}\mathbf{U}\mathbf{C}, \mathbf{T} = \mathbf{T}\mathbf{U}\mathbf{C}\mathbf{U}\mathbf{U}\mathbf{U}, \mathbf{T} = \mathbf{T}\mathbf{U}\mathbf{C}$	*Indicates the CLO based on the CLO's numbering in Item 8								

- 11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:

- Bhimani, A., Datar, S.M., Horngren, C.T., & Rajan, M.V. (2019). *Management and cost accounting* (7th ed.). Pearson.
- Braun, K.W., & Tietz, W.M. (2018). *Managerial accounting* (5th ed.). Pearson.
- Horngren, C.T., Sundem, G.L., Stratton, W.O., Burgstahler, D., & Schatzberg, J.O. (2016). *Introduction to management accounting* (16th ed.). Pearson.

13. Other additional information:

- 1. Course Name and Code: ESSENTIALS OF ECONOMICS
- 2. Synopsis: This course aims to provide students with an overview of economics. The course facilitates students with an understanding of basic economic concepts and disciplines. Students will be exposed to the core areas of microeconomics and macroeconomics. The course introduces students to market fluctuations which involve the behaviours of consumers and producers. It also introduces the basic macro study such as national growth and its issues, as well as analysing policies in influencing economic conditions.
- 3. Names (s) of academic staff:
- 4. Semester Offered: Semester: 1 or 2
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any):
- Course learning outcomes (CLO): Upon completion of the course, students should be able to:

CLO 1- explain the basic concepts and theories in economics.

CLO 2- analyse concepts related to basic economic problems, market equilibrium, and production cost.

CLO 3- identify issues related to market structure in a group.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course	Pro	gramme	e Learnii	ng Outco	omes (P	LO)	Teaching	
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods	Assessment
CLO 1	$\checkmark$						Lectures	Final Examination
CLO 2			$\checkmark$				Tutorials	Quizzes
CLO 3		$\checkmark$					Case Study	Group Assignment
CLO 4						$\checkmark$		

					Activities					
	с	ourse Content Outline	CLO*	Lea	Guic	led g (F:	2F)	Guided Learning (NF2F) e.g., e- Learning	Independent Learning (NF2F)	Total SLT
				L	Т	Ρ	0			
1.	Introd	luction	2	2	2			2	2	8
	1.1 1.2 1.3 1.4 1.5 1.6 1.7	Introduction Definition of economics Economic resources Basic economic concepts Basic economic problems Production possibility curve Economic systems								
2.	Dema	nd, Supply and Elasticity	1	6	6			6	6	24
	2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 2.10 2.11 2.12 2.13	Definition of demand Classification of goods and services Law of demand Determinants of demand Change in quantity demanded vs change in demand Exceptional and inter-related demand Price, income and cross elasticity of demand Definition of supply Law of supply Determinants of supply Change in quantity supplied vs change in supply Exceptional and inter-related supply Price, income and cross elasticity of supply								
3.	Marke	et Equilibrium	2	2	2			2	2	8
	3.2 3.3	Equilibrium price and output Changes in equilibrium price and output								
4.	<ul> <li>Theory of Consumer Behaviour</li> <li>4.1 Definition of consumer behaviour</li> <li>4.2 Utility approach</li> <li>4.3 Cardinal approach</li> <li>4.4 Law of diminishing marginal utility</li> <li>4.5 Ordinal approach</li> <li>4.6 Indifference curve</li> <li>4.7 Budget line</li> <li>4.8 Income effect: price effect and substitution effect</li> <li>4.9 Consumer surplus</li> </ul>			6	6			6	6	24

5.	Theory of Production	1	6	6		6		6	24	
	5.1 Definition of production 5.2 Classification of factors of									
	production									
	5.3 Production function									
	one variable and one fixed inp	out								
	5.5 Isoquant analysis									
	5.6 Isoquant map 5.7 Marginal rate of technical									
	substitution									
	5.8 Long-run production function			<b>.</b>						
6.	Cost of Production	2	2	4		3		3	12	
	6.1 Cost concept 6.2 Cost curves in the short run									
	6.3 The isocost analysis									
	6.4 Isocost map									
	6.6 Cost curves in the long run	;								
	6.7 Economies of scale									
	6.8 Diseconomies of scale									
	of scope									
	6.10 Concept of revenue									
7.	Market Structure I: Perfect	3	3	4		4		3	14	
	7.1 Theory of a firm									
	7.2 Market structure									
	7.3 Perfect competition									
	7.4 Monopoly 7.5 Comparison of monopoly and									
	perfect competition									
8.	Market Structure II: Monopolistic	3	3	4		4		3	14	
	8.1 Monopolistic competition									
	8.2 Oligopoly									
9.	Factor Market and Theory of Distribution	3	3	4		4		3	14	
	9.1 Payment of factors of									
	production									
	9.3 Wages	у								
	9.4 Interest									
	9.5 Rent 9.6 Profit									
	Total		33	38		37		34	142	
	Assessment	Percentag (%)	je		F2F			NF2F	Total SLT	
Fina	l examination	50			3			9	12	
Quiz	zes	20			1			2	3	
Grou	up Assignment	30			2			4	6	
							GRA	ND TOTAL SLT	163	
	L = Lecture, T = Tutorial, P = Practic	al, O = Othe	rs, F2	2F = Fa	ace to Fa	ace, NF2	F = N	lon Face to Face		
	"Indicates the CLO based on the CLO's numbering in Item 8									

- 11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:

- Hubbard, R.G., & O'Brien, A.P. (2019). *Essentials of economics* (6th ed.). United Kingdom: Pearson.
- Mankiw, N. G. (2018). Essentials of economics (8th ed.). Connecticut: Cengage.
- Sloman, J., & Garratt, D. (2018). *Essentials of economics*. United Kingdom: Pearson Education.
- 13. Other additional information:

#### **OPTIONAL FOR BUSINESS COURSES (CHOOSE TWO)**

- 1. Course Name and Code: INTRODUCTION TO FINANCE
- 2. Synopsis: This course prepares students with the concepts, roles, and principles of financial management in business organisations. Students will review the roles of financial markets, institutions and environment as well as performing basic analysis in regards to the time value of money, financial statements and capital budgeting for business decision.
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Nil
- 7. Course learning outcomes (CLO):

Upon completion of this course, students should be able to:

CLO 1- explain and apply basic financial tools and concepts in a business environment.

CLO 2- describe and apply basic terminologies and concepts used in financial management and financial markets.

CLO 3- apply related financial management tools and techniques to solve financial related problems.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course Learning	Pro	ogramme	e Learnii	ng Outco	omes (Pl	LO)	Teaching		
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods	Assessment	
CLO 1	V	V					Lectures, Tutorials	Presentation, Quizzes/Test, Project Paper/Assignments, Final Examination	
CLO 2	V	V			~		Lectures, Tutorials	Presentation, Quizzes/Test, Project Paper/Assignments, Final Examination	
CLO 3	✓		~				Lectures, Tutorials	Presentation, Quizzes/Test, Project Paper/Assignments, Final Examination	

		Теа	Teaching and Learning Activities						
			Gui	ded L	earn	ing	Guided	Indonondont	Total
	Course Content Outline	CLO*		(F2	F)		(NF2F)	Learning	SLT
			L	т	Ρ	ο	e.g., e- Learning	(NF2F)	
1.	Introduction to Financial Management								
	1.1 Overview of finance								
	manager	1	3	2				4	9
	1.3 Financial objectives								
2.	Financial Environments, Markets, and								
	Institutions								
	2.1 Financial markets (capital, money and derivatives market)								40
	2.2 Financial institutions	2	3	2			2	6	13
	2.3 Central bank								
	2.4 Primary and secondary markets								
3.	Interest Rate								
	3.1 Nominal interest 3.2 Effective interest rate	3	3	2			2	8	15
	3.3 Base lending rate		•	_			_	C C	
4	Time Value of Manayu Present Value								
4.	1 Time value of Money. Present value								
	4.1 Plue line 4.2 PV of a single amount	_	_	2				10	45
	4.3 PV of annuities	3	3	2				10	15
	4.4 Perpetuities								
5.	Time Value of Money: Future Value								
	5.1 FV of a single amount	3	3	2				10	15
	5.2 FV of annulties	3	3	2				10	15
6.	Financial Statements Analysis								
	6.2 Ratio analysis & interpretation	3	3	4			4	6	17
	6.3 Trend analysis								
7.	Working Capital Management								
1	7.1 Cash budget	3	3	2			2	8	15
	7.2 Trade credit	0	Ŭ	2			2	Ŭ	10
8.	Basic Capital Budgeting								
	8.1 Cost of capital	2.2	_	_				10	45
	8.2 WACC	2,3	3	2				10	15
9.	Capital Budgeting Analysis								
	10.2 Discounted payback period	2,3	6	8			2	10	22
1	10.3 Net present value								
	10.4 Internal rate of return								
	Total		30	26	1		12	72	140

Assessment	Percentage (%)	F2F	NF2F	Total SLT					
Presentation	20	1	3	4					
Quizzes/ Tests	10	1	1	2					
Project Paper/Assignments	20	1	3	4					
Final Examination	50	2	8	10					
GRAND TOTAL SLT 160									
L = Lecture, T = Tutorial, P = Practical, O = Others, F2F = Face to Face, NF2F = Non Face to Face *Indicates the CLO based on the CLO's numbering in Item 8									

- 11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:

- Brigham, E.F., & Houston, J.F. (2020). *Fundamentals of financial management* (10th ed.). Cengage.
- Brooks, R. (2019). Financial management: Core concepts (4th ed.). Pearson.
  - Gitman, L.J., & Zutter, C. J. (2015). Principles of managerial finance (7th ed.). Pearson.
- Titman, S. & Keown, A.J. (2018). *Financial management: Principles and applications* (13th ed.). Pearson.
- 13. Other additional information:

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- 1. Course Name and Code: WRITING AND RESEARCH SKILLS
- Synopsis: This course prepares students for social sciences research, skills of scientific and academic writing, and different research methods. Students will develop skills to understand and analyse texts. In addition, students will practise and develop paraphrasing and summarising skills.
- 3. Names (s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Nil
- Course learning outcomes (CLO): Upon completion of this course, students should be able to:
  - CLO 1- explain and apply research concepts, process and methods.
  - CLO 2- demonstrate skills in writing academic papers.
  - CLO 3- recognise different types of research and writing techniques.
- 8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course	P	rogramm	ne Learni	ng Outco	omes (PLC	<b>D</b> )	Teeshinn	Assessment	
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Nethods		
CLO 1	~		~				Lectures, Tutorials	Assignments, Quizzes/ Test, Final Examination	
CLO 2	~		~	~			Lectures, Tutorials	Assignments, Quizzes/Test, Final Examination	
CLO 3	~		~	~		~	Lectures, Tutorials	Assignments, Quizzes/Test, Final Examination	

	Course Content Outline	CLO*	Guid	led Le (F2F	earni =)	ing	Guided Learning	Independ	Total
			L	т	Р	ο	(NF2F) e.g., e- Learning	Learning (NF2F)	5L1
1.	<ul><li>Introduction to Writing</li><li>1.1 Ethics of academic writing</li><li>1.2 Plagiarism and avoiding plagiarism</li><li>1.3 Do's and Don'ts in academic writing</li></ul>	1	4				2	6	12
2.	<b>Writing Skills</b> 2.1 Understanding texts 2.2 Paragraph development 2.3 Writing an academic essay	2	4	2			1	5	12
3.	Introduction to References Style3.1APA style3.2Canada style3.3Others	2	6	2				8	16
4.	Introduction to Research 3.1 Criteria of research 3.2 Important concepts in research	3	4	2				5	11
5.	<ul> <li>Review of Literature</li> <li>5.1 Finding and selecting ideas</li> <li>5.2 Locating past literature</li> <li>5.3 Reading past literature</li> <li>5.4 Organising and writing a literature review</li> </ul>	3	8	2			4	6	20
6.	Sampling6.1Sample and population6.2Representativeness and generalisability6.3Random and non-random sampling6.4Sample size and sampling error	3	8	2			2	8	20
7.	<ul> <li>Research Methods</li> <li>7.1 Quantitative and qualitative research</li> <li>7.2 Validity and reliability</li> <li>7.3 Experiment and non-experiment</li> <li>7.4 Ethical and practical considerations in research</li> </ul>	3	8	2			2	8	20
8.	Research Report Writing	4	4				2	4	10
9.	Research Report Presentation	4	2						2
	Total		48	12			13	50	123

Assessment	Percentage (%)	F2F	NF2F	Total SLT					
Quizzes/ Tests	10	2	2	4					
Midterm	30	2	9	11					
Research Report Writing	30	3	8	11					
Research Report Presentation	30	1	10	11					
GRAND TOTAL SLT									
L = Lecture, T = Tutorial, P = Practical, O = Others, F2F = Face to Face, NF2F = Non Face to Face *Indicates the CLO based on the CLO's numbering in Item 8									

- 11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:

- Ahmad Munawar Ismail & Mohd Nor Shahizan Ali. 2018. *Kaedah penyelidikan sosial dari perspektif Islam.* Bangi: UKM Press.
- Othman Lebar.2014. *Penyelidikan kualitatif: Pengenalan kepada teori dan metode*. Perak: UPSI.
- Leedy, P. D., & Omrod, J. E. (2013). *Practical research: Planning and design*. Upper Saddle River, NJ: Pearson.
- American Psychological Association (2010). *Publication manual of the American Psychological Association*. Washington, DC: American Psychological Association.
- 13. Other additional information:

Note: For the Introduction to Psychology course, you may refer to pages 66–67 for its course information.

#### **HUMANITIES (CORE)**

- 1. Course Name and Code: INTRODUCTION TO SOCIOLOGY
- 2. Synopsis: This course prepares students with an understanding of the principles of sociology. The coverage of the topics relates to the origins and historical development of sociology. Students will learn about culture, society, socialisation and social institution within a contemporary social structure.
- 3. Name(s) of academic staff:
- 4. Semester Offered: Semester 1, 2 or 3
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Nil
- 7. Course learning outcomes (CLO):

Upon completion of the course, students should be able to:

- CLO 1- explain and apply basic sociological concepts.
- CLO 2- explain and apply three major perspectives in sociology.
- CLO 3- describe and discuss sociological issues within the contemporary environment.
- 8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course Learning	I	Programm	)	Teaching Methods			
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	
CLO 1		$\checkmark$					Lectures, Tutorials
CLO 2	$\checkmark$	$\checkmark$		$\checkmark$		$\checkmark$	Lectures, Tutorials
CLO 3	$\checkmark$	$\checkmark$	$\checkmark$				Lectures, Tutorials

	Course Content Outline	CLO*	Le	Gui arnir	ded ng (F:	2F)	Guided Learning (NF2F) e.g., e- Learning	Independ ent Learning (NF2F)	Total SLT	
1.	The Foundation of Sociology	1	4	2		Ŭ	2	8	16	
	<ul><li>1.1 Meaning and scope</li><li>1.2 Origin and historical development</li></ul>									
2.	Introduction to the Major Perspectives of Sociology	2	6	2			2	8	18	
	<ul><li>2.1 The structural-functionalism</li><li>2.2 The social-conflict</li><li>2.3 The symbolic-interaction</li></ul>									
3.	Culture	1,3	6	2			2	8	18	
	<ul><li>3.1 Definition</li><li>3.2 Components</li><li>3.3 Multiculturalism</li></ul>									
4.	Society and Community	1,3	6	2			4	8	20	
	<ul><li>4.1 Types of society</li><li>4.2 Characteristics of society</li><li>4.3 Contemporary Issues</li></ul>									
5.	Socialisation	1,3	6	2			4	10	22	
	<ul><li>5.1 Agents of Socialisation</li><li>5.2 Theories of human development</li><li>5.3 Socialisation through the life course</li></ul>									
6.	Social Institutions – Family, Economics, Politics, Education and Religion	2,3	6	2			4	10	22	
	<ul><li>6.1 Basic concepts</li><li>6.2 Theoretical analysis</li><li>6.3 Contemporary Issues</li></ul>									
7.	Social Class and Inequality	2, 3	6	2			3	10	21	
	7.1 Definition 7.2 Sex									
	7.3 Gender		40	11			21	62	137	
					I		<u> </u>	02	157	
	Assessment	Per	centa	age (	%)		F2F	NF2F	Total SLT	
Oral Tests			15	5			1	2	3	
Oral Presentation			20	)			2	3	5	
Mid-Term Exam			20	)			2	3	5	
Grou	up Project		30	)			2	5	7	
Grou	up Presentation		15	5			1	2	3	
GRAND TOTAL SLT										

- 11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:

- Macionis, J. J. (2018). Sociology (17th ed.). New Jersey: Prentice Hall Inc.
- Schaefer, R.T. (2016) Sociology: A brief Introduction (12th ed.). New York: McGraw-Hill.
- 13. Other additional information:

Note: For other courses, you may refer to the pages stated below for the course information:

- Introduction to Psychology (pages 66–67)
- Introduction to Management (pages 68–70)
- Introduction to Law (pages 74–76)
- Essentials of Economics (pages 84–87)
- Writing & Research Skills (pages 91–93)

#### **OPTIONAL FOR HUMANITIES COURSES (CHOOSE TWO)**

- 1. Course Name and Code: INTRODUCTION TO VISUAL ARTS
- 2. Synopsis: This course aims to provide a basic understanding of the role of visual arts. Students will explore creative art solutions through the application of basic art materials and image/ mark-making techniques. The latest technology in visual arts will be learnt and applied in the form of 3-dimensional designs, motion picture and digital techniques in improving visual arts quality.
- 3. Name(s) of academic staff:
- 4. Semester offered: Semester 3 (14 weeks)
- 5. Credit Value: Four (4)
- 6. Prerequisite/co-requisite (if any): NIL
- 7. Course learning outcomes (CLO):

Upon completion of this course, students should be able to:

CLO 1- recognise the roles of visual arts, formal aspects, and art criticisms.

CLO 2- deploy a process of exploration, trial and error to aid in the development of creative art solutions.

CLO 3- apply a range of materials, images and mark-making techniques as appropriate to the creation of visual artworks.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course Learning	Р	rogramn	ne Learn	ing Outc					
Outcomes (CLO)	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	Teaching Methods	Assessment	
CLO 1	$\checkmark$	$\checkmark$		$\checkmark$			Lectures, Tutorials	Presentation	
CLO 2	$\checkmark$	$\checkmark$					Lectures, Tutorials, Practical	Coursework	
CLO 3		V	$\checkmark$				Lectures, Tutorials, Practical	Coursework	

			Teaching and Learning Activities								
			Gu	ided L	earnin	g	Guided	Independe			
	Course Content Outline	CLO		(F2	F)	-	Learning	nt	Total		
				т	P	0		Learning	SLI		
			-	•	•	Ŭ	e-Learning	(NF2F)			
1	Introductory Lecture	1,2	4	0	0		3	2	9		
	1.1 Overview of the course										
	1.2 Introduction to visual arts										
	1.3 A brief history of arts and										
2	Visual Art Elements:	1,2,3	1	1	2		3	2	9		
	Dots & Lines										
3	Visual Art Elements:	1	1	1	2		3	2	9		
•	Shapes				_		C C	_	, C		
1	Visual Art Flomonts	23	1	1	2		3	2	0		
4	Texture	2,5	1	1	2		5	2	9		
-			4								
5	Visual Art Elements: Colour	3	1	1	2		3	2	9		
6	Visual Art Elements: Colour	2,3	1	1	2		3	2	9		
	Theory 2										
7	Visual Art Principles:	1,2	1	1	2		3	2	9		
	Composition and Layout										
8	Visual Art Principles:	1,3	1	1	2		3	2	9		
	Composition and Layout										
9	3-Dimensional Design:	1,3	1	1	2		3	2	9		
	Elements and principles										
10	3-Dimensional Design:	12	1	1	2		3	2	9		
	Elements and principles	•,=			-		Ũ	-	Ũ		
11	Introduction to Visual Arts	1	1	1	2		3	2	0		
	in the Motion Picture		1	1	2		5	2	9		
40		4									
12	in the Digital Age	1	1	1	2		3	2	9		
13	Project Consultations	1,2,3	0	2	2		3	2	9		
14	Performance Evaluation and	123	0	3	3	-	2	2	10		
17	Feedback	1,2,0	U	5	5		2	2	10		
	Tatal		45	10	07		4.4		407		
	Iotai		15	16	27		41	28	127		
		[				1		[	Total		
	Assessment	Pe	ercent	age (%	<b>b</b> )		F2F	NF2F	SLT		
	Art Projects		5	0			2	12			
	Report Writing		20	0			2	4	20		
	Presentation		1(	0			1	2	3		
	Major Project		20				3	7	10		
		I		-		L	-		L		
GRAND TOTAL SLT 160											
- I	= Lecture T = Tutorial P = Proc	tical O	= Othe	are F2	$F = F_{24}$	na ta	Eace NE2E -	Non Face to F			
	*Indicates the	CLO bas	sed on	the Cl	_O's nu	umbe	ering in Item 8				

- 11. Identify the special requirements or resources to deliver the course:
  - Design/ Drawing Studio, Lecture hall
- 12. Recommended text/reading:

- Stewart, M., 2014. Launching the imagination. McGraw-Hill Education.
- Evans, P., 2012. *Exploring the elements of design.* Cengage Learning.
- 13. Other additional information:

#### 1. Course Name and Code: INTRODUCTION TO MASS MEDIA AND COMMUNICATION

- Synopsis: This course provides students with an overview of the effect and impact of mass communication on contemporary life and society. All topics cover the historical evolution of media as well as the contemporary development of new media and issues. Students will learn about mass media channels, advertising, public relations and their social effects.
- 3. Names (s) of academic staff:
- 4. Semester Offered: 2 or 3
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Nil
- 7. Course learning outcomes (CLO):

Upon completion of this course, students should be able to:

CLO 1- explain and apply mass communication concepts, models, channels and techniques. CLO 2- identify and apply appropriate use of media channels and techniques.

CLO 3- analyse mass media tools and sources in delivering information effectively and ethically.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course	Pro	ogramme	e Learni	Tooching					
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods	Assessment	
CLO 1	~	~					Lectures, Tutorials	Quizzes, Assignments, Final Examination	
CLO 2	~	~		~			Lectures, Tutorials	Quizzes, Assignments, Final Examination	
CLO 3		~		~	~		Lectures, Tutorials	Quizzes, Assignments, Video, Final Examination	

- 9. Transferable Skills (if applicable):
- 10. Distribution of Student Learning Time (SLT):

			Teaching and Learning Activities								
	Course Content Outline	CLO*	Gui	ded Le (F2F	earnii <sup>-</sup> )	ng	Guided Learning (NF2F) e.g., e- Learning	Independ ent Learning (NF2F)	Total SLT		
			L	Т	Р	0					
1.	Introduction to Mass Communication	1	3	2				6	11		
	<ul><li>1.1 History and development of mass communication</li><li>1.2 Communication process and models</li><li>1.3 Types of communication</li></ul>										
2.	The Mass Media	1	3	2				6	11		
	<ul><li>2.1 The roles and functions of mass media</li><li>2.2 The importance and impact of mass media</li></ul>										
3.	Newspaper	1	3	2			2	6	13		
	<ul> <li>3.1 Roles and importance of newspaper</li> <li>3.2 Daily newspaper</li> <li>3.3 Newspaper development and challenges</li> </ul>										
4.	Magazines	1	3	2			2	6	13		
	<ul> <li>4.1 Roles and importance of magazines</li> <li>4.2 Consumer and industry magazines</li> <li>4.3 Magazines development and challenges</li> </ul>										
5.	Books	1,2,3	3	2			1	4	10		
	<ul> <li>5.1 Book categories</li> <li>5.2 The development and trends of books</li> <li>5.3 The evaluation of books</li> </ul>										
6.	Radio	1,2	3	2			2	3	10		
	<ul><li>6.1 The history and development of radio</li><li>6.2 Significance of radio</li><li>6.3 Broadcasting techniques and regulations</li></ul>										
7.	Sound Recordings	1,2	3	2			1	4	10		
	<ul><li>7.1 Music and society</li><li>7.2 Sound and recording technologies</li><li>7.3 Recording industry</li></ul>										
8.	Broadcasting	1,2	3	2			3	6	14		
	<ul><li>8.1 Television</li><li>8.2 Internet television</li><li>8.3 Online broadcasting</li><li>8.4 Cable and satellite broadcasting</li></ul>										
9.	Movies	1,2,3	3	2			2	6	13		
	<ul><li>9.1 Movie industry and development</li><li>9.2 Industry ownership</li><li>9.3 Copyrights and ethics</li></ul>										

10.	Internet and Social Media	1,2	3	2			5	3	13	
	10.1 Internet and social networking									
	10.2 Video games									
	10.4 Issues and ethics									
11.	Advertising and Public Relations	1,2	3	2			2	6	13	
	11.1 History and evolution of advertising									
	11.2 Differences between advertising									
	and public relations									
	11.3 Trends and convergence in									
	advertising and public relations									
12.	The Social Effects and Ethics of Mass	3	3	2			2	6	13	
	Communication									
	12.1 Media-depicted violence									
	12.3 Media ethics									
	Tatal		20	04				<u></u>	111	
	rotai		30	24			22	62	144	
	Assessment	I	Percen	itage ('	%)		F2F	NF2F	Total SLT	
Quiz	zes/Test	10					1	1	2	
Assi	gnments			20			1	2	3	
Folio	/Projects	20					1	2	3	
Final	Examination	50					2	6	8	
GRAND TOTAL SLT 160										
$L = L_{\text{outure}}$ T = Tutorial D = Dractical O = Others 505 = 5acc to 5acc NE05 = Nac 5acc to 5acc										
	L = Looturo T = Tutorial D = Dractical	$\cap - \cap h$	ore E2		on to	Eaco		Eago to Eago		

- 11. Identify the special requirements or resources to deliver the course (e.g., software, nursery, computer lab, simulation room):
- 12. Recommended text/reading:

- Baran, S., (2017). *Introduction to mass communication: Media literacy and culture* (8th ed.). McGraw Hill.
- Dominick, J.R., (2012). *The dynamic of mass communication: Media in transition* (12th ed.). McGraw Hill.
- 13. Other additional information:

- 1. Course Name and Code: INTRODUCTION TO LEGAL SKILLS
- 2. Synopsis: This course provides students with basic skills in research, reading, analysing and application of legal sources.
- 3. Name(s) of academic staff:
- 4. Semester Offered:
- 5. Credit Value: 4
- 6. Prerequisite/co-requisite (if any): Introduction to Law
- 7. Course learning outcomes (CLO):

Upon completion of the course, students should be able to:

CLO 1- explain and apply common legal terminologies.

CLO 2- conduct basic information search using relevant methods.

CLO 3- identify appropriate legal authorities in problem solving.

8. Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:

Course	Р	rogramm	e Learnii	ng Outco	Teeching				
Outcomes (CLO)	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	Methods	Assessment	
CLO 1	$\checkmark$	$\checkmark$					Lectures, Tutorials (Collaborative Learning)	Assignments, Quizzes/Test, Final Examination	
CLO 2	$\checkmark$	$\checkmark$	$\checkmark$				Lectures, Tutorials (Collaborative Learning)	Assignments, Quizzes/Test, Final Examination	
CLO 3			$\checkmark$			$\checkmark$	Lectures, Tutorials (Collaborative Learning)	Assignments, Presentation, Final Examination	
## 10. Distribution of Student Learning Time (SLT):

Course Content Outline			Teaching and Learning Activities						
		CLO*	Guided Learning (F2F)			2F)	Guided Learning (NF2F)	Independent Learning	Total SLT
			L	т	Ρ	0	e.g., e- Learning	(NF2F)	
1.	Introduction & Mind Setting of the Course	1	2					7	9
2.	English for Law - legal terminologies abbreviations/maxims	s/ 1	6	2				8	16
3.	Reading Skills – legal news/articles/ text books	1,2	4	2				8	14
4.	Primary and Secondary Legal Sources								
	4.1 Finding legal sources (search technique, manual and electron searching)	ic 1,2	4	2			2	6	14
5.	Understanding Statutes								
	<ul><li>5.1 Structure of a statute</li><li>5.2 Reading a statute</li><li>5.3 Analysing a statute</li><li>5.4 Cross reference</li></ul>	2,3	6	2			2	8	18
6.	Understanding Case Law								
	<ul><li>6.1 Structure of law reports</li><li>6.2 Reading a case</li><li>6.3 Analysing a case</li><li>6.4 Case briefing</li></ul>	2,3	6	2			2	8	18
7.	Writing Skills – constructive and argumentative essay	3	4	2				8	14
8.	Speaking Skills – etiquette/								
	professionalism/constructive /argumentative speeches	3	4	2				8	14
9.	Legal Research	1,2,3	4	2			2	6	14
			40	16			8	67	131
	Assessment	Percentage		F	2F			NF2F	Total
	Quizzes/Tests	<u>(%)</u> 10			1			2	<u>SLI</u> 3
Assignments		20	2			4			
Presentation		20	1		5		6		
Final Examination 50		50	2		12		14		
				100					
GRAND I UTAL SLI 160					160				
*Indicates the CLO based on the CLO's numbering in Item 8									

- 11. Identify the special requirements or resources to deliver the course:
- 12. Recommended text/reading:

Note: HEPs to update and ensure the latest edition/publication.

- Fatinski, E. F. and S. (2017). *Legal skills* (6th ed.). Oxford: Oxford University Press.
- Hanson, S. (2016). *Learning legal skills and reasoning* (4th ed.). Taylor and Francis LTD.

13. Other additional information:

### 6. ASSESSMENT OF STUDENT LEARNING

### **Student Assessment**

Assessment involves the systematic and cyclical evaluation of students' performance and development through the continuous collection, analyses, and review of direct and indirect data from diverse sources that evidence students' learning for the purpose of improving the quality of students' learning. The aim of conducting assessments is to establish students' levels of understanding of what they know and can do, to provide feedback for improving their learning, and for effective curriculum and programme planning (Brown, 1997; Walvood, 2010). Data collected from assessments are used by students, teachers, curriculum planners, and administrators to improve students' learning and not for forming judgement (MQA, 2014: GGP Assessment of Students). It is recommended that HLIs encourage good practice and innovative methods in teaching, learning, and assessments (TLA) through initiatives that improve TLA and include feedback from the stakeholders.

#### **Relationship between Assessment and Learning Outcomes**

Assessment principles, methods, and practices must align with the learning outcomes of a programme and must be consistent with the levels defined in the Malaysian Qualifications Framework (MQF) Teaching and learning outcomes must also align appropriately with types of assessments.

#### **Assessment Methods**

A variety of methods and tools can be used for the assessment of learning outcomes and competencies. It is recommended that HLIs make use of both summative (final examination) and formative (continuous assessment) methods in the programme. HLIs can also develop a course assessment plan that conforms to constructive alignment (as described below). It is important that HLIs evaluate the effectiveness of various methods and tools for assessing learning outcomes and competencies (Angelo & Cross, 1993). Additionally, HLIs must develop and implement procedures to ensure the periodic review of the validity, reliability, integrity, currency, and fairness of assessment methods.

#### **Constructive Alignment**

Constructive alignment refers to ways of designing teaching and learning activities, including assessment tasks, that relate directly to the desired learning outcomes to be achieved through non-conventional methods, i.e., that cannot be attained from traditional lectures, tutorial and examinations (MOHE, 2016; pg. 117). Biggs (2003) offers some theoretical underpinnings of constructive alignment for outcome-based curriculum. The constructive alignment model explains the coherence between assessments, teaching strategies, and intended learning outcomes in an educational programme (McMahon & Thakore, 2006). Also, Mohamed Nadzri Mohd Yusoff (2017) describes constructive alignment as follows:

"It is to ensure that each course will be able to achieve the intended learning outcomes utilising the appropriate teaching and learning activities and making sure that the learning outcomes are measured using the appropriate assessment methods. Alignment is about getting students to take responsibility for their own learning and establishing trust between the student and the teacher. Thus, the teacher must have a clear idea of what we want the students to be able to do at the end of a unit of study, and communicate these intended learning outcomes to students so they can at least share in the responsibility of achieving them."

### Management of Student Assessment

The department and its academic staff must have appropriate levels of autonomy to manage student assessments. The management of student assessments takes into consideration the roles, rights, and powers of the department and the academic staff concerned. It also requires the HLI and academic staff to put in place mechanisms that ensure the security of assessment documents and records.

It is important that HLIs provide timely feedback to students on the results of their assessments. This is to ensure that students obtain prompt and constructive feedback for purposes of improving their learning and performance, and identifying timely corrective measures including remedial actions for students to undertake. Assessment results must be communicated to students before the commencement of a new semester to facilitate progression decisions. The department must periodically review its management of students' assessments and records, and act on findings appropriately.

It is also important to establish authority over the management of assessments via a permanent review committee that has purview over the processes of verifying and moderating summative assessments. The review committee can work in consultation with a panel of external advisors comprising assessors/examiners, students, alumni, and industry players. All HLIs must develop guidelines and mechanisms to address matters like frequency, methods, and criteria of student assessments as well as issues relating to academic conduct like plagiarism among students. The guidelines should include grading systems, appeal policies, and frameworks for reviewing assessment methods. Changes made to student assessment methods must comply with the HLI's established guidelines and procedures. All guidelines, procedures, and changes must be documented and communicated to students upon commencement of the programme.

## 7. PANEL MEMBERS

## SCIENCE (PHYSICAL and LIFE SCIENCE)

NO.	NAME	ORGANISATION
1.	Mr. Sahubar Ali Mohamed Nadhar - Chairperson	Universiti Utara Malaysia (UUM)
2.	Dr. Izlina Binti Supa'at	Universiti Malaya (UM)
3.	Ms. Maznah Ali	Universiti Sains Malaysia (USM)
4.	Dr. Saharawati Binti Shahar	Bahagian Matrikulasi, KPM

### **ARTS (BUSINESS and HUMANITIES)**

NO.	NAME	ORGANISATION
1.	Mr. Ahmad Raflis Che Omar - Chairperson	Universiti Kebangsaan Malaysia (UKM)
2.	Mr. Adnan bin Husin	Majlis Peperiksaan Malaysia (MPM)
3.	Mr. Murshid bin Kassim	Universiti Islam Antarabangsa Malaysia (UIAM)
4.	Ms. Mien Wee Cheng	Sunway University

Secretariat: Mr. Mohd Imran Nul Hakim Derasip (MQA)

# 8. NOMENCLATURES FOR THE FOUNDATION

Foundation in Science
Foundation in Arts
Foundation in Science and Arts

### 9. **REFERENCES**

Angelo, T.A. & Cross, Kass. P. (1993). *Classroom assessment techniques* (2nd ed.). San Francisco, CA: Jossey-Bass.

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Biggs, J. (2003). *Teaching for quality learning at university: What the student does* (2nd ed.). Buckingham: Society for Research into Higher Education and Open University Press.

Cambridge Assessment (2017). *Guided Learning Hours*. https://support.cambridgeenglish.org/hc/en-gb/articles/202838506-Guided-learning-hours. Date of Access – 21st September 2017

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McMahon.T., Takhore .H (2006). Achieving Constructive Alignment: Putting Outcomes First, Quality of Higher Education, v3 p10-19. https://files.eric.ed.gov/fulltext/EJ874250.pdf.

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National Board for Technical Education (2004) National Diploma, Computer Science Curriculum and Course Specifications. UNESCO Project, Federal Republic of Nigeria.

# 10. GLOSSARY

No.	Terms	Description
1.	Credit	A quantitative measurement that represents the learning volume or academic load to achieve the respective learning outcomes.
2.	Core Course	Specific courses for a specific discipline of Education.
3.	Common Core	Modules that are deemed common to all disciplines by the programme.
4.	Educators	Professionals in the field of education including teachers, lecturers, counsellors, administrators, etcetera.
5.	Good Practices	A set of internationally accepted standards, which are expected to be fulfilled to maintain a high quality of education. Best practices are also commonly used to refer to "good", "mature" or "excellent" practices which people or organisations choose to emulate.
6.	Higher Education Provider (HEP)	A body, corporation, organisation, institution or other body or person which conducts higher education or training programmes leading to the award of higher education qualification.
7.	Learner	A person enrolled in a programme or course of study offered by the HEP. Learners are typically students, young or adult and include teachers, lecturers, counsellors, administrators, etc.
8.	Learning Outcomes	Statements on what a learner should know, understand and can do upon the completion of a period of study.
9.	Lifelong Learning	Continuous building of skills and knowledge through formal and informal experiences encountered during the course of a lifetime. It is the voluntary and self-motivated pursuit of knowledge for either personal or professional reasons.
10.	Malaysian Qualifications Framework (MQF)	An instrument that classifies qualifications based on a set of criteria that are approved nationally and benchmarked against international best practices.

No.	Terms	Description
11.	Programme	An arrangement of courses that are structured for a specified duration and learning volume to achieve the stated learning outcomes leading to an award of a qualification.
12.	Programme Aims	An overarching statement on the purpose, philosophy and rationale in offering a programme.
13.	Specialisation	Modules taken to fulfil the requirements within an identified/specific discipline of a programme.
14.	Quality Assurance	Comprises planned and systematic actions (policies, strategies, attitudes, procedures and activities) to provide an adequate demonstration that quality is being maintained and enhanced, and meet the specified standards of teaching, scholarship and research as well as student-learning experience.
15.	Resource Centre/Library	A library in the HEP that includes different kinds of holdings of knowledge resources, and encourages the use of audio-visual aids and other special resources and materials for learning, in addition to books, periodicals, etc.
16.	Student Learning Time (SLT)	A period of time that a learner should spend on the learning- teaching activities for a given credit which comprises guided learning, independent learning and assessment.
17.	Summative Assessment	The assessment of learning which summarises the progress of a learner at a particular time and is used to assign the learner a course grade.
18.	Formative Assessment	The assessment of student progress throughout a course, in which feedback from learning activities is used to improve student attainment.