TAYLOR'S UNIVERSITY

Wisdom • Integrity • Excellence

ACADEMIC MODULE GUIDE 2023

(AUGUST 2023 INTAKE)

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GUIDELINES

Please read the guidelines before selecting your modules.

1. The minimum number of credits that can be taken is 16 credits and the maximum is 20 credits.
2. 1 credit is equivalent to 1.5 ECTS.
3. **Modules can be selected from the same programme/ specilization only.**
4. Students need to fulfil pre-requisites to take certain modules. The modules selected is subject to approval by the respective faculties.
5. All modules are subject to availability of the beginning of semester. Any subsequent changes to the selection of modules are subject to the approval of the faculty and timetable availability.
6. If you are joining the exchange programme for 2 semesters, please fill in one Module Registration Form for each semester.

FACULTY OF INNOVATION & TECHNOLOGY

THE DESIGN SCHOOL

BACHELOR OF DESIGN (HONOURS) IN CREATIVE MEDIA

COMMON CORE

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	GCD60104	Typography	4	-
2	GCD60204	Illustration and Visual Narrative	4	-
3	GCD61204	Digital Photography and Imaging	4	-
4	GCD60804	Design Principles	4	-
5	GCD60904	Interactive Design	4	-
6	RES60604	Design Research Methodology	4	-

Choose ONE (1) Specialisation

UIUX Specialisation

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	GCD61504	Games Studies	4 Credits	-
2	MMD60204	Experiential Design	4 Credits	-
3	DST60504	Application Design I	4 Credits	-

Digital Animation Specialisation

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	MMD60804	3D Modeling	4 Credits	-
2	GCD61104	Animation Fundamentals	4 Credits	-

Entertainment Design Specialisation

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	GCD61804	Vehicle and Props Design	4 Credits	-
2	GCD61704	Character Design	4 Credits	-

Graphic Design Specialisation

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	MER60104	Packaging and Merchandising Design	4 Credits	-
2	COM61804	Digital and Social Media Communication	4 Credits	-

Module Name	Module Synopsis
Typography	This Module is designed to introduce the students to the language, tradition and craft of typography through; The practice of typographic layout, typesetting and printing; the aesthetic and contextual use of typography as a form of written communication; the historical and contemporary influences that surround and influence typographic practice; and the project briefs cover a broad base of typographic problems designed to present intellectual and practical challenges which requires research, conceptual thinking, experimentation and development of ideas.
Illustration and Visual Narrative	This module aims to introduce the students to the process of creating visual concepts from ideas and its pictorial communication to an audience in the form of illustrations. Through studio assignments and demonstrations, students will understand the history of visual communication, the essential skill of telling stories via images and the work processes of professional illustration. A variety of relevant media, materials and techniques are explored. Lectures on the working methods of successful illustrators will support the practical aspects.
Digital Photography and Imaging	Students will develop their knowledge of and skills in digital imaging and drawing through a series of lectures, demonstrations and hands-on exercises in the photo studio and lab. They will undergo practical assessments in the form of projects and exercises throughout the semester. Students will then render and submit a culminated final project and/or a body of work (portfolio) to demonstrate their ability to solve communication problems using the appropriate software and hardware as a form of final assessment.
Design Principles	This module provides fundamental principles of visual design for students to effectively organize and present information utilizing interfaces. This module will provide students an in-depth look into principles of perception and cognition that inform effective design. The module will utilize technologies that support and help build human-centric designs proficiencies.
Interactive Design	Students will be introduced to Web specific coding and technical skill to design and develop non-linear interactive pieces. The conceptual and design aspects will be considered. This module will be delivered through a structure of lecturers, demonstrations and practical.
Design Research Methodology	This module prepares the groundwork for the Design Research Dissertation. It will introduce students to the various research methodologies relevant to design. This will entail choosing a topic, formulating a research question, conducting a thorough literature search, and other appropriate research sources, designing a research methodology, compiling a critical bibliography and presenting it as a proposal for further development.
Games Studies	This module exposes the students to various types of games not restricted to digital games. They will play analog and traditional games as well, which they later analyze and share with their classmates. The experience will allow them to identify common pattern in game design and will channel them to the right direction in thinking and creating a game of their own.
Experiential Design	This module introduces the student to the concept of 'experiential' design where user interaction takes place in a physical but computer controlled environment, for example, using pressure pads, microphones, webcams or other external devices to control the user experience and interaction. Learning outcomes focus on the student's ability to design and create experimental physical user experiences for abstract or 'real-world' applications or uses e.g. a fine art installation or an informative interactive museum exhibition piece.
Application Design I	This module aims to broaden the students' understanding of 'usability' by applying its theories and standards to design for mobile applications. In the process the students' knowledge and practical skills in designing for mobile platforms will be increased.

3D Modeling	This module introduces understanding of 3D modeling tools to provide a visual look at various concepts that goes into the production of games,animations and interactive media. Students will be given an in-depth look at what 3D application can do. Students will learn which tools will help to achieve their goals and why these tools work the way they do.
Animation Fundamentals	This module introduces basic fundamentals of animation techniques through 2D and 3D platforms and reinforces students to implement animation principles in production methodology. The module seeks to explore the fundamental utilization of animation to convey visual narration, elements for use in creative media in multiple animation disciplines.
Vehicle and Props Design	The module will introduce students to analyse and design functional and aesthetically pleasing props and vehicles for storytelling and entertainment purposes, with a strong focus on the relationship between form and function. Students will learn all the tricks of using drawing, photography and 3D to realize designs in a compelling way combining the knowledge of making an image in 2D with high level details informed by fundamentals in automotive, aircraft, product and industrial design in order to envision non-existing props, gadgets, equipment, weapon and vehicles that are convincing and believable to the audience. A project-based learning method will be adopted with a balance of foundational education and software-based technical training that emphasizes on extensive and in-depth skill development relevant to the demands of the industry.
Character Design	The Character Design module is meant to prepare students for the creation of original artworks for the cinematic and games industries. Students will learn to tackle the creative process of designing characters from humans, creatures and monsters combining traditional drawing and painting techniques, software and digital sculpting techniques and acting skills. A project-based learning method will be adopted with a balance of foundational education and software-based technical training that emphasizes on extensive and in-depth skill development relevant to the demands of the industry.
Packaging and Merchandising Design	The module is a multi-disciplinary field which considers functional aspects such as holding and protecting its contents from damage; transportation, manufacture; distribution and graphic design elements on the surface of the package that result in compelling communication. Students are introduced to the basic elements and principles of packaging Design. The emphasis is on understanding aspects of form and structure; the fundamental design considerations of graphic design elements on the surface of the package. The learning and teaching approach for the module will be blended learning, with students engaging with contents during lecture and assigned designated topics in flip classrooms. Communication aspects with respect to answering user needs are emphasized. The module is supported by a combination of online lectures and blended learning sessions
Digital and Social Media Communication	This module trains students to analyse data from an analytics standpoint towards becoming a strategic designer. Students are being equipped to interpret analytics data, developing personas and communicate it through a design development that includes (but not limited to) design application and pitch deck. This module will expose students to the emerging role of the Digital Content Creator/Developer or Strategic Designer. The learning and teaching approach for the module will be blended learning, with students engaging with contents during lecture and assigned designated topics in flip classrooms. There are also tutorial and practical sessions where studio-based learning are implemented with engagements of technical demonstrations, design development and ideas presentation to facilitators.

SCHOOL OF COMPUTER SCIENCE

BACHELOR OF INFORMATION TECHNOLOGY (HONOURS)

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	ITS60504	Data Structures and Algorithms	4	-
2	ITS62904	Database Systems	4	-
3	ITS63004	IT Fundamentals	4	-
4	ITS63304	Object Oriented Programming	4	-
5	ITS63504	Human Computer Interaction	4	-
6	ITS65404	Information Assurance and Security	4	-
7	ITS66304	Operating Systems and Computer Networks	4	-
8	ITS67204	Professional Practices and Information Security	4	-
9	ITS67504	Systems Administration and Platform Technologies	4	-
10	MTH61104	Mathematics and Statistics	4	-
11	ITS62204	Mobile Applications Development	4	-
12	ITS63904	Web Development Technologies	4	-
13	ITS64504	Web Applications Programming	4	-
14	ITS65804	System Integration and Architecture	4	-
15	ITS65904	Introduction to Cloud Computing	4	-
16	ITS67304	Wireless Networks and Security	4	-
17	ITS67404	Internet of Things	4	-

Module Name	Module Synopsis
Data Structures and Algorithms	In this module, the students learn the basics of algorithms i.e. understanding, analyzing and writing algorithms. Students will also understand and analyse data structures to apply algorithms on the data structures for performing various operations. This module covers the fundamental concepts of data structures and algorithms. It mainly focuses on the operations – insertion, deletion, searching, traversing, deleting and sorting elements using various data structures such as Array, Linked list, Queue, Stack, Trees and Graphs. The learning and teaching approach for the module will involve weekly through face-to-face, independent and self-directed learning and online learning thru TIMES. The learning is facilitated mostly through guided learning and problem-based learning. The Guided Learning allows the facilitator to play a proactive role in terms of teaching and motivate and guiding the students to their basic concepts of data structures. When the basic skill of programming is learnt, then Problem-Based Learning pedagogy will engage the students in problem-solving activities. Delivery of these two pedagogies will be via the practical computer laboratory sessions, take home problem sets, and minimal face-to-face lectures where necessary to increase independence learning. The learning is facilitated mostly through lecture, practical computer laboratory and blended learning. The module involves students periodic work in progress to ensure that subject objectives and requirements are met. The learning is facilitated mostly through tutorials, blended learning, and reflection.

Database Systems	Students are introduced to understand the fundamental approaches and concepts. The learning and teaching approach for the module will include understanding the basics of database technologies, engaging with practical tasks during the designing database and creating tables. They also present their ideas and thoughts within the group. The module is supported by a combination of dwelling explores the ideas and thoughts. The module is supported by a combination of online lectures and fieldwork sessions. This module is an introduction to database systems. This module covers the fundamental issues of the relational model, relational languages, database design, and query processing. It starts with a structured overview of database systems, their history, and their applications. The relational model is then covered in detail. Relational languages such as relational algebra and calculus are discussed before introducing the SQL language. Then we cover the Entity-Relationship model and discuss how ER diagrams are translated into the relational model. Topics on database design principles in this module further include functional dependencies and normalization. Students will gain a good understanding of database design theory and principles and be able to develop database systems and application programs on a DBMS. This module uses three methods of assessment including an individual's knowledge base, problem-based, and use case-based.
IT Fundamentals	This module is for students to learn the fundamentals of IT that include computer hardware, computer software, computer information processing and pervasive themes in IT for the students to support IT system and apply the IT system model to business scenario. This module is taught using case study learning through a combination of mainly tutorials, take home case study, and minimal face-to-face lectures where necessary. The learning is facilitated mostly through lectures, tutorials, blended learning, and reflection. With the motive "assessment for learning", the assessments are spread as 60% in course assessment and 40% final examination with heavy concentration on understanding fundamental of IT aspects.
Object Oriented Programming	Programming Principles includes programming logics and design, programming process, program control structures, debugging and fundamentals of Object-Oriented Concepts. Programming logics and design covers the pseudo-code, algorithm and flowcharting. Programming process encoding the program logics and design into a notation, a programming language so that it can be executed by a computer. Program control structures include selection statements (such as if-else, nested if, switch), iteration for repetitive control (such as for, while and do..while loops) structure. Fundamentals of Object-Oriented concepts includes variables, data types, Object, Class, methods, Arrays, inheritance and polymorphism. Software packages that may be used to develop the program includes debugging and compilation of the program codes. This module applies two different teaching and learning pedagogies, (1) Guided Learning and (2) Problem-Based Learning. The Guided Learning allows the facilitator to play a proactive role in terms of teaching and motivate and guiding the students to their basic concepts of programming. When the basic skill of programming is learnt, then Problem-Based Learning pedagogy will engage the students in problem-solving activities. Delivery of these two pedagogies will be via the practical computer laboratory sessions, take home problem sets, and minimal face-to-face lectures where necessary to increase independence learning. The learning is facilitated mostly through lecture, practical computer laboratory and blended learning.

Human Computer Interaction	This module introduces the theories and practical of building and evaluate interface. Topic covered including various interface models and principles, design and prototyping, graphics and visualization, and evaluations. The learning and teaching approach for the module is that students will be taught on principles of Human Computer Interaction (HCI) through guided learning, and then students engaging with practical tasks during the lab sessions, and presenting their ideas and thoughts within the group. Project-based learning is being introduced in group project where learning occurs through participation in a challenging and motivating project
Information Assurance and Security	This subject introduces a range of information security management services implemented in industry. The subject will cover the fundamental principles and practice of security risk assessment, incident response and disaster recovery, knowledge leakage, systems and network security, and policy and culture. Students will develop an appreciation for the kinds of security practices that exist in industry in each of these areas. This subject supports course-level objectives by allowing students to have in-depth knowledge of the specialist area of information security management. The subject's assessment tasks include the writing of a comprehensive consulting proposal and research into critical security issues faced by organizations. These tasks will encourage students to work in a team to develop a high-level of achievement in writing, research activities, and presentation skills.
Operating Systems and Computer Networks	The aim of this module is to introduce the fundamental concepts of modern day operating systems and computer networks. It covers an overview and principles of operating systems, concurrency and scheduling algorithms, memory management and security. This module introduces about the architecture of the Internet Communication such as TCP/IP Model, Protocols that support it, Transmission Medium, Multiplexing techniques, Error detection and correcting techniques, Flow Control and Error Control Techniques, Switching Technology, Routing, IP addressing, network mobility, and Internetworking components. This module will be assessed through written test, group assignment and final examination.
Professional Practices and Information Security	This module introduces Professional Computing Practices. This module covers the ethical and legal perspective of what is required in a computing professional as well as how they affect the software development of systems used in organizations. This would include various coverage on issues such as ethical philosophies, information privacy, computer crime, computer misuse and considerations on the international and local legal framework available to protect software systems development which would cover aspects of contracts, non-disclosure agreements, intellectual property law (copyright, patent, licensing, royalties, trade-secrets, trademarks and warranty disclaimers). Students will also be made aware on the fundamental concepts in information security, threats and attacks on information assets, network security, principles of secure software design and implementation The learning and teaching approach for the module will be through case studies, discussions, presentations. The module is supported by a combination of face to face and online lectures.
Systems Administration and Platform Technologies	This module will give students the fundamental concepts of a computer hardware and software. It will introduce students to Binary systems, Digital Logic Circuits and basic CPU architecture. Then followed by operating systems structures and how they can be installed and maintained. Students will go through lectures and practical classes for each of the topics. They will have a very hands-on approach in building and testing logic circuits. They will also be learning how to install and configure operating systems using virtualisation technology.

Mathematics and Statistics	This module will introduce the students to logic, set theory, graph theory, descriptive statistics, sampling, probability and hypothesis testing. The learning and teaching approach for the module will be lecture, tutorial, group discussion, presentation and blended learning. The blended learning is conducted via the you tube video presentation regarding the problems related to concept learnt.
Mobile Applications Development	This module covers the core concepts of mobile applications development. It mainly focuses on understanding, analysis, and development of diverse mobile applications using the Android studio. The module starts by introducing the Android Platform details and moves on to the implementation of various Graphical User Interface components known as Views. Furthermore, students are taught about the development of Android applications using advanced techniques such as SQLite Database, WiFi, Email, SMS, Multimedia and Location-based programming APIs. The module is based on student-centric teaching pedagogies such as Inquiry Learning, where students are provided with problems to solve and direction on how to arrive at solutions, and cooperative learning, where students are encouraged and required to work in groups in to create mobile applications. The module is taught via a dual-delivery approach that starts from covering the theoretical and technical concepts in the lecture sessions, then students analyze and apply approaches to create mobile applications, and finally, students develop and experiment new Android applications during the practical sessions. Most sessions of the module are delivered face-to-face and online learning, and some practical sessions are delivered with a blended learning approach. In this module, students' learning is assessed in 4 main aspects of summative assessment those include (Assignment 1 of conducting research to come up with the idea of unique mobile application, Assignment 2 of practical App development and to evaluate the market value of their developed App in order to seek start-up opportunities, Class test and Final exam to mainly examine the practical and analysis skills of the students). This module also incorporate formative assessment methods using Kahoot.
Web Development Technologies	he purpose of this module is to provide students with theory and practical knowledge of internet technologies and web development using languages such as HTML, HTML 5, CSS, and JavaScript. The learning and teaching approach for the module will be computer lab-based, with students engaging with practical tasks during the computer lab sessions. This module is taught using problem-based learning through a combination of mainly practical computer laboratory session, take home problem sets, and minimal face-to-face lectures where necessary. The learning is facilitated mostly through lecture, practical computer laboratory, blended learning and project-based learning. Project-based learning is being introduced in group project where learning occurs through participation in a challenging and motivating project.
Web Applications Programming	Web Application Programming includes web programming logics, design, develop interactive and dynamic web systems. This module introduces the students to the fundamentals of the Web Applications programming such as HTML, CSS, XML, AJAX and JSON, and client-server technologies which require to develop Web applications with database technology. This module is designed to give the student the tools and the knowledge to program using the web programming language PHP as a server-side language to develop an interactive and dynamic web application.
System Integration and Architecture	The module emphasizes the evaluation of various enterprise hardware and software including operating systems available in the market. Students taken this module will also be exposed to project management skill, user requirement study and architecture design. By taking this module, the students are expected to assume the role of providing a complete system based on a client's requirement. They are responsible in selecting hardware,

	software (including OS) and services then integrate them to form the solution that end user wants. The learning and teaching approach for the module will be conducted by combining face-to-face lecture class, workshop, invited teaching guess and case study based.
Introduction to Cloud Computing	This module introduces students to the underlying concepts, theory, and principles of Cloud Computing. Cloud computing is the practice of using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or a personal computer. Topics covered in this module include Cloud Computing Models, Cloud Service Models, Cloud Service Models, Cloud Security, Operating the Cloud, and the 4 D's Migration Methodology. This module will help students to analyse issues or aspects related to an organization in terms of their ICT infrastructure and recommend appropriate cloud computing solution. This module is taught using guided and problem-based learning through a combination of tutorials, take home exercises, and face-to-face lectures. This module is taught using guided, and problem-based learning through a combination of tutorials, take home exercises, and face-to-face lectures.
Wireless Networks and Security	Mobile devices continue to evolve and penetrate our everyday lives, leading to increased importance of mobile security - a topic living in the intersection of wireless communication, mobile computing, and computer security. This course focuses on aspects of information and network security that arise in this challenging and ever-evolving space of mobile communication systems, primarily focusing on smartphones and mobile telecommunication systems. One of the main goals of the course is to improve knowledge and awareness of security issues faced by mobile application and system developers. Material will cover standards and research challenges in both deployed and future systems. Possible topics of study include (but are not limited to) telecom vulnerabilities; smartphone security; mobile Internet security; and mobile location privacy. Mobile and wireless devices today have outnumbered computers worldwide. Since mobile devices, such as smart phones provide convenient anytime anywhere access to the Internet and the ability to make phone calls, run apps cantered on our lives, they have become enticing targets for cyber criminals. This course is designed to address this growing threat to mobile and wireless devices, networks and services delivered over the mobile infrastructure. The learning is facilitated mostly through tutorials, practical labs besides of theory classes.
Internet of Things	The explosive growth of the Internet is changing the world rapidly where devices are getting connected to the Internet and each other creating a new paradigm of products and solutions. The purpose of this module is for students to understand and learn how physical objects interact with people, information systems, other objects, and the environment. Also, to learn the importance of IoT in society, devices and trends for the near future. Students will learn what Internet of Things (IoT) is, how it works, concepts and underlying principles, technologies, architecture, communication protocols, security, privacy and governance in IoT, and IoT applications in the modern world. The focus will be more towards the possibilities offered by different technologies, creative thinking and problem solving by developing simple application in real-life scenarios using IoT devices. Students will be using Raspberry Pi, Arduino devices and IoT kits to design and create solutions for simple real-life applications. The applications would be exploratory depending on the creative thinking and problem solving skills and entrepreneurial mindset of the students. This module is taught using guided, and problem-based learning through a combination of mainly hands-on tutorials, take home problem sets, and minimal face-to-face lectures where necessary/possible. The learning is facilitated mostly through tutorials, blended learning, and reflection.

BACHELOR OF COMPUTER SCIENCE (HONOURS)

Common Core

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	ITS60504	Data Structures and Algorithms	4	-
2	ITS62704	Computer Architecture and Organisation	4	-
3	ITS62904	Database Systems	4	-
4	ITS63304	Object Oriented Programming	4	-
5	ITS63504	Human Computer Interaction	4	-
6	ITS64304	Theory of Computation	4	-
7	ITS66204	Discrete Structures	4	-
8	ITS66304	Operating Systems and Computer Networks	4	-
9	ITS66404	Software Engineering	4	-
10	ITS66504	Systems Fundamentals	4	-

Choose ONE (1) Specialisation

Data Science Specialisation

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	BUS61104	Ideating Start-up	4	-
2	ITS61504	Data Mining	4	-
3	ITS65704	Data Science Principles	4	-
4	ITS66604	Machine Learning and Parallel Computing	4	-
5	ITS66704	Advanced Programming	4	ITS63304
6	ITS66804	Statistical Inference and Modeling	4	-
7	ITS66904	Big Data Technologies	4	-
8	ITS67204	Professional Practices and Information Security	4	-

Mobile Computing Specialisation

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	BUS61104	Ideating Start-up	4	-
2	ITS62204	Mobile Applications Development	4	ITS63304
3	ITS66004	Introduction to Mobile Computing	4	-
4	ITS66604	Machine Learning and Parallel Computing	4	-
5	ITS66704	Advanced Programming	4	ITS63304
6	ITS67204	Professional Practices and Information Security	4	-
7	ITS67304	Wireless Networks and Security	4	-
8	ITS67304	Internet of Things	4	-

Cyber Security Specialisation

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	BUS61104	Ideating Start-up	4	-
2	ITS60904	Computer Crime and Digital Evidence	4	-
3	ITS64904	Computer Intrusion Detection	4	-
4	ITS65504	Computer and Network Security	4	-
5	ITS66604	Machine Learning and Parallel Computing	4	-
6	ITS66704	Advanced Programming	4	ITS63304
7	ITS67204	Professional Practices and Information Security	4	-
8	ITS67304	Wireless Networks and Security	4	-

Artificial Intelligence Specialisation

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	BUS61104	Ideating Start-up	4	-
2	ITS66604	Machine Learning and Parallel Computing	4	-
3	ITS66704	Advanced Programming	4	ITS63304
4	ITS66904	Big Data Technologies	4	-
5	ITS67204	Professional Practices and Information Security	4	-
6	ITS69204	Computer Vision and Natural Language Processing	4	-
7	ITS69304	Data Analytics and Machine Learning	4	-

Module Name	Module Synopsis
Data Structures and Algorithms	In this module, the students learn the basics of algorithms i.e. understanding, analyzing and writing algorithms. Students will also understand and analyse data structures to apply algorithms on the data structures for performing various operations. This module covers the fundamental concepts of data structures and algorithms. It mainly focuses on the operations – insertion, deletion, searching, traversing, deleting and sorting elements using various data structures such as Array, Linked list, Queue, Stack, Trees and Graphs. The learning and teaching approach for the module will involve weekly through face-to-face, independent and self-directed learning and online learning thru TIMES. The learning is facilitated mostly through guided learning and problem-based learning. The Guided Learning allows the facilitator to play a proactive role in terms of teaching and motivate and guiding the students to their basic concepts of data structures. When the basic skill of programming is learnt, then Problem-Based Learning pedagogy will engage the students in problem-solving activities. Delivery of these two pedagogies will be via the practical computer laboratory sessions, take home problem sets, and minimal face-to-face lectures where necessary to increase independence learning. The learning is facilitated mostly through lecture, practical computer laboratory and blended learning.
Computer Architecture and Organisation	This course introduces about the computer systems & organization which includes number systems, conversion techniques, Boolean algebra, the basic operation of logic gates, simplification of boolean algebra, K- map, RISC and CISC, Instruction sets, Combinational Circuit, Memory Hierarchy, memory addressing, Counters and Registers. The learning and teaching approach for the module will be students engaging with practical tasks during the practical

	lessons, presenting their working digital circuit within the group. There is a lot of discussion on classwork given and student engagement during tutorial. The module is supported by face to face or online engagement used for lecture, practical classes, tutorial.
Database Systems	Students are introduced to understand the fundamental approaches and concepts. The learning and teaching approach for the module will include understanding the basics of database technologies, engaging with practical tasks during the designing database and creating tables. They also present their ideas and thoughts within the group. The module is supported by a combination of dwelling explores the ideas and thoughts. The module is supported by a combination of online lectures and fieldwork sessions. This module is an introduction to database systems. This module covers the fundamental issues of the relational model, relational languages, database design, and query processing. It starts with a structured overview of database systems, their history, and their applications. The relational model is then covered in detail. Relational languages such as relational algebra and calculus are discussed before introducing the SQL language. Then we cover the Entity-Relationship model and discuss how ER diagrams are translated into the relational model. Topics on database design principles in this module further include functional dependencies and normalization. Students will gain a good understanding of database design theory and principles and be able to develop database systems and application programs on a DBMS. This module uses three methods of assessment including an individual's knowledge base, problem-based, and case-based.
Object Oriented Programming	Programming Principles includes programming logics and design, programming process, program control structures, debugging and fundamentals of Object-Oriented Concepts. Programming logics and design covers the pseudo-code, algorithm and flowcharting. Programming process encoding the program logics and design into a notation, a programming language so that it can be executed by a computer. Program control structures include selection statements (such as if-else, nested if, switch), iteration for repetitive control (such as for, while and do. while loops) structure. Fundamentals of Object-Oriented concepts includes variables, data types, Object, Class, methods, Arrays, inheritance and polymorphism. Software packages that may be used to develop the program includes debugging and compilation of the program codes. This module applies two different teaching and learning pedagogies, (1) Guided Learning and (2) Problem-Based Learning. The Guided Learning allows the facilitator to play a proactive role in terms of teaching, and motivate and guiding the students to their basic concepts of programming. When the basic skill of programming is learnt, then Problem-Based Learning pedagogy will engage the students in problem-solving activities. Delivery of these two pedagogies will be via the practical computer laboratory sessions, take home problem sets, and minimal face-to-face lectures where necessary to increase independence learning. The learning is facilitated mostly through lecture, practical computer laboratory and blended learning.
Human Computer Interaction	This module introduces the theories and practical of building and evaluate interface. Topic covered including various interface models and principles, design and prototyping, graphics and visualization, and evaluations. The learning and teaching approach for the module is that students will be taught on principles of Human Computer Interaction (HCI) through guided learning, and then students engaging with practical tasks during the lab sessions, and presenting their ideas and thoughts within the group. Project-based learning is being introduced in group project where learning occurs through participation in a challenging and motivating project.

Theory of Computation	Theory of Computation includes Formal Languages, Automata theory, Computability Theory, and Complexity Theory. Automata and Formal languages discuss the theory and properties of different computational models that include Finite Automata, Context Free Grammars and Turing Machines. Computability includes classifying problems as solvable and unsolvable, Turing Machines, Chomsky Hierarchy, and Undecidability. Complexity theory discusses classifying problems according to their degree of difficulty in terms of execution time. Cryptography is an important application of Complexity theory. This module is taught using Guided Learning and Problem-based Learning through a combination of mainly tutorials, take home problem sets, and minimal face-to-face lectures where necessary. The learning is facilitated mostly through tutorials, blended learning, and reflection.
Discrete Structures	This module will introduce the students to logic, proof techniques, counting principles set theory, number theory, graph theory and probability. The learning and teaching approach for the module will be lecture, tutorial, group discussion, presentation and blended learning. The blended learning is conducted via the you tube video presentation regarding the problems related to concept learnt.
Operating Systems and Computer Networks	The aim of this module is to introduce the fundamental concepts of modern day operating systems and computer networks. It covers an overview and principles of operating systems, concurrency and scheduling algorithms, memory management and security. This module introduces about the architecture of the Internet Communication such as TCP/IP Model, Protocols that support it, Transmission Medium, Multiplexing techniques, Error detection and correcting techniques, Flow Control and Error Control Techniques, Switching Technology, Routing, IP addressing, network mobility, and Internetworking components.
Software Engineering	This course is about understanding what we need to know before software is built, how to obtain that information, how to analyse and understand and subsequently design it. It also looks at the process and management you should incorporate to discover and create this information. This course aims to guide students in both the theoretical and practical aspects of developing computer solutions for real-world problems, and to expose students to various tools and techniques used in analysis and design of software systems, and apply those tools within a recognised software development methodology and within the context of a case study. This module is taught using challenge-based learning through a combination of mainly practical, take home problem sets, and minimal face-to-face lectures where necessary. The learning is facilitated mostly through tutorials, blended learning, and case study.
Systems Fundamentals	This module introduces students to the underlying principles, concepts, and technology that makes up a computer system in solving problems. It focuses on the different computing paradigms or technology, underlying hardware and software infrastructure, technologies used to enhance reliability, scalability, resource utilization, performance that includes mechanisms or methods used to improve performance, and the underlying principles of operating systems that influence performance. Further, it also introduces the cloud computing concepts that has enabled industries today to add value and see technical as well as business benefits. This module will help students to evaluate today's computing technology, hardware, and software infrastructure, and propose relevant computing systems to solve practical real-world problems. This module is taught using guided, and problem-based learning through a combination of tutorials, take home exercises, and face-to-face lectures. The learning is facilitated mostly through tutorials, blended learning, and assessments.

Ideating Start-up	This module will ideally take a multidisciplinary team through the process of generating an idea based on market needs and validating that idea. Ideating Startup is a creative process of generating, developing, and communicating new ideas, where an idea is understood as a basic element of thought that can be either visual, concrete, or abstract. This module also uses design thinking approach in idea generation. Basic assumption of the design thinking is that innovation occurs at the intersection of the three equal factors: human, technology and economy. Design Thinking states that all three factors must be considered for Innovation to occur. The design thinking approach is "human-centered", and it's a process that starts with the people you're designing for and ends with new solutions that are tailor made to suit their needs. The structured approach of this module will test and refine the ideas and maximizes the chances of success at solving any assigned challenges, before the idea is scaled for increased impact.
Data Mining	The purpose of this module is for the students to learn extracting meaningful patterns or information from a data set. Our ability to generate and collect data has been increasing rapidly. The widespread use of information technology in our lives has flooded us with a tremendous amount of data. This explosive growth of stored and transient data has generated an urgent need for new techniques and automated tools that can assist in transforming this data into useful information and knowledge. Students will learn Data mining, as Data mining has emerged as a multidisciplinary field that addresses this need. Furthermore, This module discusses techniques for pre-processing data before mining and presents the concepts related to data warehousing, online analytical processing (OLAP), and data generalization. It presents methods for mining frequent patterns, associations, and correlations. It also presents methods for data classification and prediction, data-clustering approaches, and outlier analysis.
Data Science Principles	This module is designed to expose students with a range of topics related to data science. It covers various facets of data science practice, including data collection, to processing, analysis and visualisation and effective communication. Focus in these topics will be on breadth, rather than depth, and emphasis will be placed on integration and synthesis of concepts and its applications used to solve problems. The module delivery will include lecture sessions, tutorials, hands -on exercises and invited talks from expert data science practitioners.
Machine Learning and Parallel Computing	This module aims to provide a broad introduction to machine learning and parallel computing. Machine learning and parallel computing are so pervasive today, and are the best way to make progress towards human-level AI. In this module, you will learn about the most effective machine learning and parallel computing techniques, and gain practice implementing them and getting them to work for yourself. This module is taught using problem-based learning through a combination of tutorials, practical, and face-to-face lectures. The learning is facilitated mostly through tutorials, practical, blended learning, and reflection.
Advanced Programming	This module emphasises on implementing advanced object-oriented principles using Java. This module comprises of five major advanced topics including exception handling, file programming, event handling, graphical user interface programming, collections framework and generics. Students are first introduced to the concept of error trapping, the need and consequences of not implementing error trapping in development. Next, students will learn the types of exception handling in object-oriented programming and its implementation in Java. Students are then exposed to, the concept of file programming and methods of reading and writing to files and external resources using the appropriate streams. Event handling and GUI

	programming constitutes the major portion of this subject and is heavily assessed in the group assignment. These two significant topics will give students a detailed hands-on experience on how to develop a GUI based application and implement event handling using Java. Moving on students will then be introduced to the Collections framework where they are exposed to the implementation of data structures in Java using the Collections library. Students are taught how to use commonly used structures such as List, Set and Maps and the merits and demerits of each data structures. Generics is the final topic in this module to teach students on how to create template programs which promote reusability concept in programming.
Statistical Inference and Modeling	This module will introduce the students to descriptive statistics, probability, discrete random variable and distribution, continuous random variable and distribution, sampling distribution, confidence interval, hypothesis testing, linear regression, multiple regression and logistic regression. The learning and teaching approach for the module will be lecture, tutorial, practical, group discussion, presentation and blended learning. The blended learning is conducted via the you tube video presentation regarding the problems related to concept learnt.
Big Data Technologies	This module gives students an introduction to big data technologies, starting with MapReduce, as a computational model and an execution framework. Students will work with big data tools like Pig, HIVE, Hbase, and Spark to realize how the different tools in Hadoop stack fit the overall picture of big data analytics.
Professional Practices and Information Security	This module introduces Professional Computing Practices. This module covers the ethical and legal perspective of what is required in a computing professional as well as how they affect the software development of systems used in organizations. This would include various coverage on issues such as ethical philosophies, information privacy, computer crime, computer misuse and considerations on the international and local legal framework available to protect software systems development which would cover aspects of contracts, non-disclosure agreements, intellectual property law (copyright, patent, licensing, royalties, trade-secrets, trademarks and warranty disclaimers). Students will also be made aware on the fundamental concepts in information security, threats and attacks on information assets, network security, principles of secure software design and implementation.
Mobile Applications Development	This module covers the core concepts of mobile applications development. It mainly focuses on understanding, analysis, and development of diverse mobile applications using the Android studio. The module starts by introducing the Android Platform details and moves on to the implementation of various Graphical User Interface components known as Views. Furthermore, students are taught about the development of Android applications using advanced techniques such as SQLite Database, WiFi, Email, SMS, Multimedia and Location-based programming APIs. The module is based on student-centric teaching pedagogies such as Inquiry Learning, where students are provided with problems to solve and direction on how to arrive at solutions, and cooperative learning, where students are encouraged and required to work in groups in to create mobile applications. The module is taught via a dual-delivery approach that starts from covering the theoretical and technical concepts in the lecture sessions, then students analyze and apply approaches to create mobile applications, and finally, students develop and experiment new Android applications during the practical sessions. Most sessions of the module are delivered face-to-face and online learning, and some practical sessions are delivered with a blended learning approach.

Introduction to Mobile Computing	The main purpose of this course is that students will be able to learn about Mobile computing technologies, software architecture in a mobile computing environment, understand system support for dealing with disconnected operations, GSM operations and weak connectivity. Furthermore, students will learn broadcast, Handoff, mobility, and information representation. In addition, this module students will learn various concepts of mobile technologies, understanding the fundamental approaches of mobile applications design, development, and testing. The learning and teaching approach for the module covers the basics of mobile technologies such as 2G, 3G, 4G, LTE, and LTE-advanced. Students will also understand various mobile operating systems such as Android, BlackBerry, and IOS Students will be engaging with hands-on experience while designing mobile applications and presenting their ideas, and thoughts within the groups. The module is supported by a combination of online lectures and fieldwork sessions.
Wireless Networks and Security	Mobile devices continue to evolve and penetrate our everyday lives, leading to increased importance of mobile security - a topic living in the intersection of wireless communication, mobile computing, and computer security. This course focuses on aspects of information and network security that arise in this challenging and ever-evolving space of mobile communication systems, primarily focusing on smartphones and mobile telecommunication systems. One of the main goals of the course is to improve knowledge and awareness of security issues faced by mobile application and system developers. Material will cover standards and research challenges in both deployed and future systems. Possible topics of study include (but are not limited to) telecom vulnerabilities; smartphone security; mobile Internet security; and mobile location privacy. Mobile and wireless devices today have outnumbered computers worldwide. Since mobile devices, such as smart phones provide convenient anytime anywhere access to the Internet and the ability to make phone calls, run apps cantered on our lives, they have become enticing targets for cyber criminals. This course is designed to address this growing threat to mobile and wireless devices, networks and services delivered over the mobile infrastructure. The learning is facilitated mostly through tutorials, practical labs besides of theory classes.
Internet of Things	The explosive growth of the Internet is changing the world rapidly where devices are getting connected to the Internet and each other creating a new paradigm of products and solutions. The purpose of this module is for students to understand and learn how physical objects interact with people, information systems, other objects, and the environment. Also, to learn the importance of IoT in society, devices and trends for the near future. Students will learn what Internet of Things (IoT) is, how it works, concepts and underlying principles, technologies, architecture, communication protocols, security, privacy and governance in IoT, and IoT applications in the modern world. The focus will be more towards the possibilities offered by different technologies, creative thinking and problem solving by developing simple application in real-life scenarios using IoT devices. Students will be using Raspberry Pi, Arduino devices and IoT kits to design and create solutions for simple real-life applications. The applications would be exploratory depending on the creative thinking and problem solving skills and entrepreneurial mindset of the students. This module is taught using guided, and problem-based learning through a combination of mainly hands-on tutorials, take home problem sets, and minimal face-to-face lectures where necessary/possible. The learning is facilitated mostly through tutorials, blended learning, and reflection.
Computer Crime and Digital Evidence	This course introduces students to law relating to evidence in Malaysia specifically, and selected countries of the world generally; and the challenges in applying existing legislation to forensic computing. Students will understand the responsibilities of a Forensic Computing practitioner: securing evidence;

	ensuring continuity of evidence; use of auditable procedures when investigating evidence; admissibility of evidence; the need for impartiality; regulation and licensing. This course also explores computer crime investigation and incident response, and forms of digital evidence: emails, documents, images, residual information and also the investigative strategies for digital evidence and computer crime scenes.
Computer Intrusion Detection	The subject looks into computer intrusion detection areas such as: identifying and exposing security weaknesses in an organization and selecting the proper countermeasures, understand how hacking tools can be used to test and improve security, protect against and prevent intrusions. In addition the subject will also have components for Firewall configuration/ access control list/ penetration testing hands-on for small organization/system.
Computer and Network Security	This module covers the core concepts of computer and network security. It mainly focuses on topics such as confidentiality, integrity, availability, threats and protection mechanisms, active and passive attacks, security policy, cryptography, SSL, PGP, IPSec, Firewall, and intrusion detection systems. Not only technology, in this module, we also cover security concepts such as Security Policy guidelines. This modules also covers the advanced security topics such as symmetric and asymmetric cryptography algorithms where students are introduced with encryption and decryption methods using AES, DES, RSA, and DSA. Students are also taught about the message integrity and digital signatures. A network cannot be considered secure if the information transmitted via the network is revealed to man-in-the-middle attacks. In this module, we cover how SSL, IPSEC, and PGP could be used to provide security for the data when it is transferred. The module ends by introducing the concepts of intrusion detection systems. The module is based on student-centric teaching pedagogies such as Inquiry Learning, where students are provided with problems to solve and direction on how to arrive at solutions, and cooperative learning, where students are encouraged and required to work in groups in to analyze computer security scenarios for identification of threats, vulnerabilities and proposing security mechanisms.
Computer Vision and Natural Language Processing	The module emphasizes the study on processing the three kinds of data in machine: speech, text and image. Students taken this module will be exposed to different algorithms, frameworks and tools that can be used to process speech, text and image. Student will be exposed to different cases study and example of its applications as well as research problems. The learning and teaching approach for the module will be conducted by combining face-to-face lecture class, practical work and seminar. Student will exposed to group work activities including in class discussion and group work project on a given case study.
Data Analytics and Machine Learning	This module focuses on the fundamentals of data analytics and machine learning techniques applied in various fields. Topics covered include introduction to data analytics, machine learning, pre-processing, regression, classification, clustering, association rule learning, reinforcement learning, and deep learning.

BACHELOR OF SOFTWARE ENGINEERING (HONOURS)

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	ITS60504	Data Structures and Algorithms	4	-
2	ITS62704	Computer Architecture and Organisation	4	-
3	ITS62904	Database Systems	4	-
4	ITS63304	Object Oriented Programming	4	-
5	ITS63504	Human Computer Interaction	4	-
6	ITS64104	Requirement Engineering	4	-
7	ITS64204	Software Design	4	-
8	ITS64304	Theory of Computation	4	-
9	ITS64704	Software Testing	4	ITS66404
10	ITS64804	Software Quality Management	4	-
11	ITS66204	Discrete Structures	4	-
12	ITS66304	Operating Systems and Computer Networks	4	-
13	ITS66404	Software Engineering	4	-
14	ITS66504	Systems Fundamentals	4	-
15	ITS66704	Advanced Programming	4	ITS63304
16	ITS66804	Statistical Inference and Modeling	4	-
17	ITS67204	Professional Practices and Information Security	4	-

Module Name	Module Synopsis
Data Structures and Algorithms	In this module, the students learn the basics of algorithms i.e. understanding, analyzing and writing algorithms. Students will also understand and analyse data structures to apply algorithms on the data structures for performing various operations. This module covers the fundamental concepts of data structures and algorithms. It mainly focuses on the operations – insertion, deletion, searching, traversing, deleting and sorting elements using various data structures such as Array, Linked list, Queue, Stack, Trees and Graphs. The learning and teaching approach for the module will involve weekly through face-to-face, independent and self-directed learning and online learning thru TIMES. The learning is facilitated mostly through guided learning and problem-based learning. The Guided Learning allows the facilitator to play a proactive role in terms of teaching and motivate and guiding the students to their basic concepts of data structures. When the basic skill of programming is learnt, then Problem-Based Learning pedagogy will engage the students in problem-solving activities. Delivery of these two pedagogies will be via the practical computer laboratory sessions, take home problem sets, and minimal face-to-face lectures where necessary to increase independence learning. The learning is facilitated mostly through lecture, practical computer laboratory and blended learning.
Computer Architecture and Organisation	This course introduces about the computer systems & organization which includes number systems, conversion techniques, Boolean algebra, the basic operation of logic gates, simplification of boolean algebra, K- map, RISC and CISC, Instruction sets, Combinational Circuit, Memory Hierarchy, memory addressing, Counters and Registers. The learning and teaching approach for the module will be students engaging with practical tasks during the practical lessons, presenting their working digital circuit within the group. There is a lot of discussion on classwork given and student engagement during tutorial. The module is supported by face to face or online engagement used for lecture, practical classes, tutorial.

Database Systems	Students are introduced to understand the fundamental approaches and concepts. The learning and teaching approach for the module will include understanding the basics of database technologies, engaging with practical tasks during the designing database and creating tables. They also present their ideas and thoughts within the group. The module is supported by a combination of dwelling explores the ideas and thoughts. The module is supported by a combination of online lectures and fieldwork sessions. This module is an introduction to database systems. This module covers the fundamental issues of the relational model, relational languages, database design, and query processing. It starts with a structured overview of database systems, their history, and their applications. The relational model is then covered in detail. Relational languages such as relational algebra and calculus are discussed before introducing the SQL language. Then we cover the Entity-Relationship model and discuss how ER diagrams are translated into the relational model. Topics on database design principles in this module further include functional dependencies and normalization. Students will gain a good understanding of database design theory and principles and be able to develop database systems and application programs on a DBMS.
Object Oriented Programming	Programming Principles includes programming logics and design, programming process, program control structures, debugging and fundamentals of Object-Oriented Concepts. Programming logics and design covers the pseudo-code, algorithm and flowcharting. Programming process encoding the program logics and design into a notation, a programming language so that it can be executed by a computer. Program control structures include selection statements (such as if-else, nested if, switch), iteration for repetitive control (such as for, while and do..while loops) structure. Fundamentals of Object-Oriented concepts includes variables, data types, Object, Class, methods, Arrays, inheritance and polymorphism. Software packages that may be used to develop the program includes debugging and compilation of the program codes.
Human Computer Interaction	This module introduces the theories and practical of building and evaluate interface. Topic covered including various interface models and principles, design and prototyping, graphics and visualization, and evaluations. The learning and teaching approach for the module is that students will be taught on principles of Human Computer Interaction (HCI) through guided learning, and then students engaging with practical tasks during the lab sessions, and presenting their ideas and thoughts within the group. Project-based learning is being introduced in group project where learning occurs through participation in a challenging and motivating project
Requirement Engineering	Requirements engineering tasks have become increasingly complex. In order to ensure a high level of knowledge and competency among requirements engineers, the International Requirements Engineering Board (IREB) developed a standardized qualification called the Certified Professional for Requirements Engineering (CPRE). The certification defines the practical skills of a requirements engineer on various training levels. This module is based on the same set of syllabus and content for the CPRE. This course encompasses the elicitation of software requirements with appropriate documentation, requirements verification and validation as well as their management throughout the software product life-cycle. The learning and teaching approach for the module will be conducted by combining face-to-face lecture class and practical work. The module will be delivered using a blend of learning approach, using lectures and practical, coupled with directed and independent learning. Student will be exposed to group work activities including in class discussion and group work project on

	a given case study. Students are expected to spend extra hours non-contact time per week engaging in the module.
Software Design	In this module, learners are tasked to design a technical solution on agile concepts, tools and techniques. In addition to that learners shall also apply the Attribute-Driven-Design (ADD) to effective design systems that are architecturally significant. Learners will also be able to identify the intricacies involved in designing applications for the cloud, mobile and big data environment. The learning and teaching approach for the module will involve lectures, tutorial and lab sessions on salient topics coupled with occasional consultative sessions coupled with independent and self-directed learning. For decades, 'software design' has been about the internal structure of the code. Recently though, with the growing interest in design thinking, practitioners and researchers have started focusing more on the design of the behaviour of the software. Software Design in most IT organizations is a collaborative effort, involving software engineers, managers, and other stakeholders in a project. We will simulate that with several sessions devoted to architectural and iterative approaches. The major task involves an assignment that will apply an agile design methodology. This subject's contribution to the learners' profile is related to problem solving skills and system, component and application of architectural design using a systemic approach called Attribute-Driven-Design (ADD) whilst addressing the design challenges faced in cloud, mobile and big data environments. The assessment task involves a group assignment, an individual test and final examination which will among other assess four learning outcomes.
Theory of Computation	Theory of Computation includes Formal Languages, Automata theory, Computability Theory, and Complexity Theory. Automata and Formal languages discuss the theory and properties of different computational models that include Finite Automata, Context Free Grammars and Turing Machines. Computability includes classifying problems as solvable and unsolvable, Turing Machines, Chomsky Hierarchy, and Undecidablity. Complexity theory discusses classifying problems according to their degree of difficulty in terms of execution time. Cryptography is an important application of Complexity theory. This module is taught using Guided Learning and Problem-based Learning through a combination of mainly tutorials, take home problem sets, and minimal face-to-face lectures where necessary. The learning is facilitated mostly through tutorials, blended learning, and reflection. With the motive "assessment for learning", the assessments are spread as 60% in-course assessment and 40% final examination with a heavy concentration on problem solving in formal languages and automata theory.
Software Testing	Software Testing is an essential component of any organisation's ability to build software quality. This module provides an understanding of the fundamental concepts in software testing through all phases of the Software Testing Lifecycle., including basic software testing strategies and techniques most relevant to computing in a business environment. This course is also aimed to provide students with the skill to select and apply a testing strategy and testing techniques that are appropriate to a particular software system or component. In addition the student will become a capable user of test tools; will be able to assess the effectiveness of their testing activity; and will be able provide evidence to justify their evaluation. For each of the topic, the subtopics will be explored comprehensively during lecture sessions. During tutorial sessions, students will be given sets of case studies to work on based on the relevant topic of the week. The course material includes – software testing standards and metrics, types of testing (black-box and white-box), test planning, analysis, test case generation, estimating test resources, test scheduling, test execution, assessing and

	managing risk, test prioritization, defect management, and test execution. Software quality assurance activities with regards to software testing will be discussed as part of a dynamic process that is flexible and constantly tuned to the changing needs of a project.
Software Quality Management	This course is about understanding of software quality considerations which transcends the software life cycle processes. Since software quality is a ubiquitous concern in software engineering, this course prepares students to manage the development of high quality software using proven techniques and established standards in software quality assurance and software maintenance. The purpose of this module is to instil understanding of software quality assurance components which encompasses ensuring the quality of the entire software development process, such as requirements definition, software design, code reviews, software configuration management, testing, and release management as process and product assurance methods. For each of the topic, the subtopics will be explored comprehensively during lecture sessions. During tutorial sessions, students will be given sets of case studies to work on based on the relevant topic of the week. The course material includes – software quality standards and metrics, life cycle and quality model, configuration management, etc. Software quality assurance activities will be discussed as part of a dynamic process that is flexible and constantly tuned to the changing needs of a project.
Discrete Structures	This module will introduce the students to logic, proof techniques, counting principles set theory, number theory, graph theory and probability. The learning and teaching approach for the module will be lecture, tutorial, group discussion, presentation and blended learning. The blended learning is conducted via the you tube video presentation regarding the problems related to concept learnt.
Operating Systems and Computer Networks	The aim of this module is to introduce the fundamental concepts of modern day operating systems and computer networks. It covers an overview and principles of operating systems, concurrency and scheduling algorithms, memory management and security. This module introduces about the architecture of the Internet Communication such as TCP/IP Model, Protocols that support it, Transmission Medium, Multiplexing techniques, Error detection and correcting techniques, Flow Control and Error Control Techniques, Switching Technology, Routing, IP addressing, network mobility, and Internetworking components.
Software Engineering	This course is about understanding what we need to know before software is built, how to obtain that information, how to analyse and understand and subsequently design it. It also looks at the process and management you should incorporate to discover and create this information. This course aims to guide students in both the theoretical and practical aspects of developing computer solutions for real-world problems, and to expose students to various tools and techniques used in analysis and design of software systems, and apply those tools within a recognised software development methodology and within the context of a case study.
Systems Fundamentals	This module introduces students to the underlying principles, concepts, and technology that makes up a computer system in solving problems. It focuses on the different computing paradigms or technology, underlying hardware and software infrastructure, technologies used to enhance reliability, scalability, resource utilization, performance that includes mechanisms or methods used to improve performance, and the underlying principles of operating systems that influence performance. Further, it also introduces the cloud computing concepts that has enabled industries today to add value and see technical as well as business benefits. This module will help students to evaluate today's computing technology, hardware, and software infrastructure, and propose relevant computing systems to solve practical real-world problems. This

	module is taught using guided, and problem-based learning through a combination of tutorials, take home exercises, and face-to-face lectures. The learning is facilitated mostly through tutorials, blended learning, and assessments.
Advanced Programming	This module emphasises on implementing advanced object-oriented principles using Java. This module comprises of five major advanced topics including exception handling, file programming, event handling, graphical user interface programming, collections framework and generics. Students are first introduced to the concept of error trapping, the need and consequences of not implementing error trapping in development. Next, students will learn the types of exception handling in object-oriented programming and its implementation in Java. Students are then exposed to, the concept of file programming and methods of reading and writing to files and external resources using the appropriate streams. Event handling and GUI programming constitutes the major portion of this subject and is heavily assessed in the group assignment. These two significant topics will give students a detailed hands-on experience on how to develop a GUI based application and implement event handling using Java. Moving on students will then be introduced to the Collections framework where they are exposed to the implementation of data structures in Java using the Collections library. Students are taught how to use commonly used structures such as List, Set and Maps and the merits and demerits of each data structures. Generics is the final topic in this module to teach students on how to create template programs which promote reusability concept in programming.
Statistical Inference and Modeling	This module will introduce the students to descriptive statistics, probability, discrete random variable and distribution, continuous random variable and distribution, sampling distribution, confidence interval, hypothesis testing, linear regression, multiple regression and logistic regression. The learning and teaching approach for the module will be lecture, tutorial, practical, group discussion, presentation and blended learning.
Professional Practices and Information Security	This module introduces Professional Computing Practices. This module covers the ethical and legal perspective of what is required in a computing professional as well as how they affect the software development of systems used in organizations. This would include various coverage on issues such as ethical philosophies, information privacy, computer crime, computer misuse and considerations on the international and local legal framework available to protect software systems development which would cover aspects of contracts, non-disclosure agreements, intellectual property law (copyright, patent, licensing, royalties, trade-secrets, trademarks and warranty disclaimers). Students will also be made aware on the fundamental concepts in information security, threats and attacks on information assets, network security, principles of secure software design and implementation.

SCHOOL OF ENGINEERING

BACHELOR OF ELECTRICAL & ELECTRONIC ENGINEERING WITH HONOURS

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	EEE60104	Programming Techniques	4	-
2	EEE60304	Microprocessors and Computer Architecture	4	EEE60404
4	EEE60404	Digital and Analogue Electronics	4	-
3	EEE60504	Integrated Electronics	4	EEE60804
4	EEE60604	Electrical Power and Machines	4	EEE60804
5	EEE60704	Power Electronics and Industrial Drives	4	EEE60604
6	EEE60804	Circuits and Devices	4	-
7	EEE60904	Electromagnetic Fields and Waves	4	MTH61204
8	EEE61004	High Voltage Engineering	4	EEE60604
9	EEE61104	Signals and Systems	4	MTH61204
10	EEE61204	Power System Analysis and Protection	4	EEE60604
11	EEE61304	Electrical Energy Generation and Utilization	4	EEE60604
12	EEE61404	Communication Systems	4	EEE61104
13	ENG60204	Professional Engineers and Society	4	-
14	ENG60704	Engineering Design and Project Management	4	PRJ62404
15	ENG60804	Automatic Control and Instrumentation	4	MTH61304
16	ENG61104	Numerical Methods and Data Analysis	4	-
17	MTH61204	Engineering Mathematics I	4	-
18	MTH61304	Engineering Mathematics II		MTH61204

Module Name	Module Synopsis
Programming Techniques	In this module, students are required to develop programs using the C programming language in order to solve simple to challenging problems. This module covers the following: C program control, functions, arrays, characters, strings, formatted input/output, structures and file processing. The contents in this module will help introduce students to the basics of programming, thus supporting the achievement of SDG9. The teaching and learning approach for the module will be through problem-based learning and self-directed learning pedagogies composed of interactive lecture sessions, supervised tutorial sessions and supervised practical activities to complement the theoretical principles.
Microprocessors and Computer Architecture	This unit covers three basic aspects of embedded systems namely microcontroller hardware, programming and hardware interfacing. A study of the microcontroller system includes the understanding of architecture, memory and interface aspects. The programming aspect includes both Assembly and C program design and program development environment for the microcontroller system. The hardware interface involves the study of the interfacing circuits to the external modules. The contents of this module equip the students with the knowledge of microprocessor programming which is one of the key components in enhanced research and upgraded technologies, supporting the achievement of SDG9. The learning and teaching approach for the module will be through problem-based learning and self-directed learning pedagogies

	composed of interactive lecture sessions, supervised tutorial sessions and supervised practical activities to complement the theoretical principles.
Digital and Analogue Electronics	This module covers digital logic circuits and semiconductor-based analogue circuits. The theory and practice of digital logic, digital information representation, and digital circuit design will be introduced in digital logic circuit. The design and analysis of semiconductor diode rectifier and filter circuits will be demonstrated in semiconductor analogue circuits. It also covers the design and analysis of circuits such as Bipolar Junction Transistor (BJT), Field Effect Transistor (FET) and Operational Amplifier. The contents of this module provide students with knowledge of digital and analogue components, which are key components in electronic industrial and innovation in terms of circuit development, thereby supporting SDG9. Lectures, tutorials, and practicals will be delivered using a blended learning approach that incorporates face-to-face learning, online synchronous face-to-face learning, online asynchronous non-face-to-face learning, and online asynchronous activities.
Integrated Electronics	This module deals with op-amp based circuits and their applications. It also introduces the concept of IC design. The contents in this module will help introduce students to the basics of integrated circuits, thus supporting the achievement of SDG9. The teaching and learning approach for the module will be through problem-based learning and self-directed learning pedagogies composed of interactive lecture sessions, supervised tutorial sessions and supervised practical activities to complement the theoretical principles.
Electrical Power and Machines	This module deals with two main topics - AC power distribution concepts and electrical machines. For electrical machines, it covers DC motors and generators, synchronous motors and generators, asynchronous motors and generators, and transformers. As for AC power, it covers active, reactive, and apparent powers, power factor corrections in both single-phase and 3-phase systems. The contents of this module equip the students with the knowledge of motor efficiency which is one of the key components in sustainable energy and industrialization thus, supporting the achievement of SDG7 and SDG9. It also covers the knowledge of Industrial Revolution 4.0 related to electric machines. The learning and teaching approach for the module will be through problem-based learning and self-directed learning pedagogies composed of interactive lecture sessions, supervised tutorial sessions, case study assignments, and supervised practical activities to complement the theoretical principles.
Power Electronics and Industrial Drives	This module deals with characteristics of power switching devices and their operation in converters, inverters and chopper circuits which are widely applied in residential, commercial, and industrial sectors particularly in variable speed drives applications for rotating machines. The contents of this module equip the students with important knowledge of power electronics and industrial drives which is one of the key components in sustainable industrialization thus, supporting the achievement of SDG9. The teaching and learning approaches adopted for this module are guided learning, self-directed learning and problem-based learning. Lectures, tutorials and practical will be delivered through blended learning approach, including face-to-face learning, online synchronous face-to-face learning, online asynchronous non-face-to-face learning and online asynchronous activities.

Circuits and Devices	This module deals with two main topics, circuit theory and semiconductor devices. In circuit theory, Kirchhoff's laws and network theorems are applied for the analysis of DC and AC circuits. Also, the transient response of RL and RC circuits is investigated. In semiconductor devices, the physics of conduction in solids and semiconductor electronic components are introduced. The contents in this module will help introduce students to the basics of circuit analysis and common electronics components found in electronic circuits, thus supporting the achievement of SDG9. The teaching and learning approach for the module will be through problem-based learning and self-directed learning pedagogies composed of interactive lecture sessions, supervised tutorial sessions and supervised practical activities to complement the theoretical principles.
Electromagnetic Fields and Waves	This subject deals with vector analysis, electrostatic fields and magnetic fields which is one of the key components in sustainable industrialization thus, supporting the achievement of SDG9. The behaviour of time varying signals along transmission lines is investigated by considering appropriate applications. The learning and teaching approach for the module will be through problem-based learning and self-directed learning pedagogies composed of interactive lecture sessions, supervised tutorial sessions and supervised practical activities to complement the theoretical principles.
High Voltage Engineering	This module aims to expose students to the concept of dielectrics breakdown, generation of impulse voltages and currents, high DC and AC voltages, and high voltage measurement and testing techniques. Students will be introduced to the phenomena of dielectrics breakdown in gases, liquids, and solid dielectrics, partial discharge, and overvoltage. Students will also be introduced to the generation of DC, AC, impulse voltages and earthing, and lightning protection. Various types of insulation materials, cable insulation, application of insulating materials, and techniques of condition-based monitoring are exposed to students in this course. The contents of this module equip the students with the fundamental knowledge of high voltage engineering to promote sustainable industrialization thus, supporting the achievement of SDG9. It also covers the knowledge of Industrial Revolution 4.0 related to high voltage engineering. The learning and teaching approach for the module will be through problem-based learning and self-directed learning pedagogies composed of interactive lecture sessions, supervised tutorial sessions, and supervised practical activities to complement the theoretical principles.
Signals and Systems	This module deals with signal analysis and the signal transmission through systems. It provides Laplace transform, Z-transform and probability mathematical background for signals and system analysis. The contents of this module equip the students with the knowledge of signals and systems which is one of the key components in enhanced research and upgraded technologies, supporting the achievement of SDG9. The learning and teaching approach for the module will be through problem-based learning and self-directed learning pedagogies composed of interactive lecture sessions, supervised tutorial sessions, and supervised practical activities to complement the theoretical principles.
Power System Analysis and Protection	This module deals with the distribution, transmission, network analysis, and protection of power

	system networks. It emphasizes on simulation, analysis, and design of system protection of a power system network operating under normal and abnormal conditions. The contents of this module equip the students with the fundamental knowledge of the electrical power system analysis and protection knowledge to promote sustainable industrialization thus, supporting the achievement of SDG9. It also covers the knowledge of Industrial Revolution 4.0 related to electrical power system analysis and protection. The learning and teaching approach for the module will be through problem-based learning and self-directed learning pedagogies composed of interactive lecture sessions, supervised tutorial sessions, and supervised practical activities to complement the theoretical principles.
Electrical Energy Generation and Utilization	This module deals with the electrical power generation and its utilization for different applications such as electric traction, heating, welding and illumination. The contents of this module equip the students with the knowledge of electrical energy generation and utilisation which is one of the key components in sustainable industrialization thus, supporting the achievement of SDG12. The learning and teaching approach for the module will be through problem-based learning and self-directed learning pedagogies composed of online synchronous face-to-face learning, online asynchronous non-face-to-face learning and online asynchronous activities, supervised tutorial sessions, and practical activities to complement the theoretical principles.
Communication Systems	This module deals with the main features of communication systems including different analogue and digital modulation and demodulation and fundamentals knowledge in this field such as sampling theorem, bandwidth, signal-to-noise-ratio, bit-error-rate, error control and etc. The contents of this module equip the students with the knowledge of communication systems which is one of the key components in sustainable industrialization thus, supporting the achievement of SDG9. The learning and teaching approach for the module will be through problem-based learning and self-directed learning pedagogies composed of interactive lecture sessions, supervised tutorial sessions, supervised practical activities to complement the theoretical principles, online synchronous face-to-face learning, online asynchronous non-face-to-face learning, and online asynchronous activities.
Professional Engineers and Society	This module discusses and studies the code of ethics and professional conduct a Professional Engineer should strive to achieve and maintain. It also provides the necessary skills to ensure that undergraduate students are aware of the various learned and regulatory bodies that are responsible for the ethics of the profession, safety and health, quality management and project management financing control. The present module also emphasizes on Industrial Revolution 4.0 (IR4.0) and Sustainable Development Goals (SDG) to give exposure towards current trends of the world. There are five types of assessment: Final Examination, Test 1, Assignment, Quiz and e-Portfolio which assess cognitive and soft skills of the students. In general, the module helps to develop global perspective, personal competencies, and life-long learning. These skills are implic teaching-learning and assessment strategies covered lecture and blended learning.

Engineering Design and Project Management	This module equips engineering students with innovation techniques such as design thinking, sharpening their innovation skills. This will empower them to develop financially and economically sustainable solutions and enable them to play a key technical and economical role in activities ranging from creating jobs to addressing the Grand Challenges of the 21st Century. Aside from that, students are also required to consider coming up with projects that are in line with the 17 Sustainable Development Goals of the United Nations to ensure value in their work towards tackling real and current issues. This is a Guided Learning module that also requires the students to proactively practice self-directed learning in the process of achieving the learning outcomes for the module. There will also be aspects of Authentic Learning wherein the students must develop a solution with real-life application potentials in mind. With these teaching approaches in mind, lessons of the module consists of one lecture and one weekly consultation/discussion sessions. The weekly consultation session consists of regular reviews and updates from the students to the module coordinator who provides feedback and critiques to ensure that the students' projects are aligned with the learning outcomes of the module. The mode of delivery for the module applied blended learning wherein the students have face-to-face time with the module coordinator and are also provided with online learning material through the MOOC platform OpenLearning.
Automatic Control and Instrumentation	This module provides an introduction and overview of the field of control systems. Among some of topics covered include fundamentals of block diagrams and its reduction techniques, transfer functions, system stability analysis via Routh-Hurwitz criterion, root locus analysis, instrumentation, Programmable Logic Controller (PLC) systems and system's time response. Delivery of the module will be done in the form of blended learning with tutorial session being conducted in the face-to-face mode while lecture sessions are on a non-face-to-face guided online basis. Guided learning approach is used in order to enhance the students' theoretical knowledge in control system through both lecture and tutorial. In addition, problem-based learning approach is also applied with opportunities to design or develop control systems via block diagrams and ladder diagram based on a given constrains and scenario from various applications based on the theoretical knowledge.
Numerical Methods and Data Analysis	This course introduces programming with MATLAB and provides skills that promote the use of numerical methods in engineering applications. This course will also provide the students with knowledge on the background of engineering applications using statistical analysis and the use of machine learning. The learning and teaching approach for the module will be through problem-based learning and self-directed learning pedagogies composed of interactive lecture session and supervised tutorial sessions to complement the theoretical principles. The assessment approach for the module will be test, assignment, and final examination.
Engineering Mathematics I	Engineering mathematics I provides students with basic knowledge on applied engineering mathematics which is used in most of the engineering design applications. This module covers some of the most common used mathematics techniques, inclusive of software for solving engineering problems, and this support one of the

	important pillars (simulation) of IR4.0. Topics covered in this module include hyperbolic functions, complex numbers, matrix, partial differentiation, mathematical model development, and integration techniques. The teaching and learning approaches adopted for this module are guided learning, self-directed learning and problem-based learning. Lectures and tutorials will be delivered through blended learning approach, including face-to-face learning, online synchronous face-to-face learning, online asynchronous non-face-to-face learning and online asynchronous activities.
Engineering Mathematics II	Engineering mathematics II provides students with basic knowledge on applied engineering mathematics including numerical function and operators which is used in most of the engineering design applications. This module covers the mathematical modelling of engineering problems using differential equations and introduces various techniques for solving the challenges. It covers the statistics, probability and the use of software to solve engineering problems, and this support one of the important pillars (simulation) of IR4.0. It also covers the transformation of system representation between time and complex frequency domains and its analysis and solution. The teaching and learning approaches adopted for this module are guided learning, self-directed learning and problem-based learning. Lectures and tutorials will be delivered through blended learning approach, including face-to-face learning, online synchronous face-to-face learning, online asynchronous non face-to-face learning and online asynchronous activities.

BACHELOR MECHANICAL ENGINEERING WITH HONOURS

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	CHE61404	Thermodynamics and Heat Transfer	4	-
2	CHE61504	Engineering Fluid Mechanics	4	-
3	CHE61604	Advanced Thermofluid Engineering	4	CHE61504 CHE61404
4	ENG60204	Professional Engineers and Society	4	-
5	ENG60504	Properties and Applications of Materials	4	-
6	ENG60704	Engineering Design and Project Management	4	PRJ62404
7	ENG60804	Automatic Control and Instrumentation	4	MTH61204 MTH61304
8	ENG60904	Introduction to Electronics and Electrical Power and Machines	4	-
9	ENG61004	Electronics and Microprocessors	4	MTH61304
10	ENG61104	Numerical Methods and Data Analysis	4	-
11	MEC60104	Engineering Statics	4	-
12	MEC60204	Engineering Solid Mechanics	4	MEC60104
13	MEC60304	Computer Aided Engineering & Geometric Modeling	4	-
14	MEC60404	Numerical Analysis for Engineers with Applications using ANSYS	4	-
15	MEC60504	Manufacturing Engineering	4	MTH61204
16	MEC60604	Engineering Dynamics	4	-
17	MEC60704	Mechanical Vibration	4	-
18	MTH61204	Engineering Mathematics I	4	-
19	MTH61304	Engineering Mathematics II	4	MTH61204
20	PRJ62404	Engineering Design and Analysis	4	-
21	MTH61204	Engineering Mathematics I	4	-

Module Name	Module Synopsis
Thermodynamics and Heat Transfer	This module combines the knowledge related to both energy transfer (as heat) and thermodynamics to expose the students to a wide variety of topics that will be instrumental in their academic and career advancement like the applications of the first and second laws of thermodynamics and the mechanisms of heat transfer in heat engines, heat pumps, refrigeration system, and heat exchangers. This module covers topics such as introduction and basic concepts of thermodynamics, thermodynamic property tables, 1st law of thermodynamics, 2nd law of thermodynamics, power cycles, refrigeration cycles, conduction, convection, radiation, and heat exchangers**.** The learning and teaching approaches for this module are based on guided learning, self-directed learning, and problem-based learning. Lectures, tutorials, and practicals will be delivered through a blended learning approach through a combination of face-to-face and online lectures, face-to-face tutorial and practical sessions, and online asynchronous activities.
Engineering Fluid Mechanics	This module deals with three fundamental topics: first, hydrostatics in which the pressure and its relevant hydrostatic forces are studied. Second, hydrodynamics in which basic laws of conservation of mass, energy, and momentum in relation to the fluid flow and its engineering applications for ideal and viscous fluid systems are studied. Third,

	dimensional analysis, similarities, and Π-theorem are studied. The contents of this module equipped the student with important knowledge pertaining fluid static and fluid flows which support the achievement of SDG 6, Clean Water and Sanitation. In general, the module helps to develop time management, communication, research and analytics. These skills are implicitly assessed. The teaching-learning and assessment strategies covered lecture, tutorial, practical and blended learning. The learning and teaching approaches for the module will be guided-learning and self-directed learning.
Advanced Thermofluid Engineering	This module introduces to the students the concept of gas power cycles, gas vapour mixtures, and air-conditioning, mass transfer, the operation of turbomachines, and finally, external flows and airfoils where the students will learn about the boundary layer concept, lift and drag, flow separation and compressible flow. The teaching and learning in this module will be classroom-based lectures with real-life examples (authentic learning and teaching) to help students understand the concepts and the applications. This module supports SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all by helping improving energy efficiency. The knowledge acquired in the classroom will be demonstrated, theoretically in the form of tutorial classes, and practically in the form of lab experiments. These labs are unguided (self-directed learning) which help the students to think independently using the knowledge gained in the classroom.
Professional Engineers and Society	This module discusses and studies the code of ethics and professional conduct a Professional Engineer should strive to achieve and maintain. It also provides the necessary skills to ensure that undergraduate students are aware of the various learned and regulatory bodies that are responsible for the ethics of the profession, safety and health, quality management and project management financing control. The present module also emphasizes on Industrial Revolution 4.0 (IR4.0) and Sustainable Development Goals (SDG) to give exposure towards current trends of the world.
Properties and Applications of Materials	The module provides an overview of the materials used in engineering applications and some fundamental selection methods for choosing the most suited materials for a given application. Additionally, the course introduces fundamental physics that govern the properties of materials, including bonding types, atomic/molecular structures, and materials and processes for 3D printing. The module will employ a guided learning approach during the lecture portion and a problem-based learning approach during the practical session.
Engineering Design and Project Management	This module equips engineering students with innovation techniques such as design thinking, sharpening their innovation skills. This will empower them to develop financially and economically sustainable solutions and enable them to play a key technical and economical role in activities ranging from creating jobs to addressing the Grand Challenges of the 21st Century. Aside from that, students are also required to consider coming up with projects that are in line with the 17 Sustainable Development Goals of the United Nations to ensure value in their work towards tackling real and current issues. This is a Guided Learning module that also requires the students to proactively practice self-directed learning in the process of achieving the learning outcomes for the module. There will also be aspects of Authentic Learning wherein the students must develop a solution with

	real-life application potentials in mind. With these teaching approaches in mind, lessons of the module consists of one lecture and one weekly consultation/discussion sessions. The weekly consultation session consists of regular reviews and updates from the students to the module coordinator who provides feedback and critiques to ensure that the students' projects are aligned with the learning outcomes of the module. The mode of delivery for the module applied blended learning wherein the students have face-to-face time with the module coordinator and are also provided with online learning material through the MOOC platform OpenLearning.
Automatic Control and Instrumentation	This module provides an introduction and overview of the field of control systems. Among some of topics covered include fundamentals of block diagrams and its reduction techniques, transfer functions, system stability analysis via Routh-Hurwitz criterion, root locus analysis, instrumentation, Programmable Logic Controller (PLC) systems and system's time response. Delivery of the module will be done in the form of blended learning with tutorial session being conducted in the face-to-face mode while lecture sessions are on a non-face-to-face guided online basis. Guided learning approach is used in order to enhance the students' theoretical knowledge in control system through both lecture and tutorial. In addition, problem-based learning approach is also applied with opportunities to design or develop control systems via block diagrams and ladder diagram based on a given constrains and scenario from various applications based on the theoretical knowledge.
Introduction to Electronics and Electrical Power and Machines	This module deal with basic electrical and electronics elements which consist of digital logics and binary systems; DC and AC circuit concept, RLC elements in AC system, active, reactive, and apparent power; a basic introduction on 3-phase power systems and electrical power generation and transmission; different types of DC and AC machines as well as transformer. The contents of this module equip the students with essential knowledge of electrical, electronics and machines which are the key components in sustainable industrialization thus, supporting the achievement of SDG9. The teaching and learning approaches adopted for this module are guided learning, self-directed learning and problem-based learning. Lectures and tutorials will be delivered through blended learning approach, which includes face-to-face learning, online synchronous face-to-face learning, online asynchronous non-face-to-face learning and online asynchronous activities.
Electronics and Microprocessors	The module emphasizes the microprocessor or microcontroller programing application that interfacing with different electronic components and sensors. Students are introduced to a basic concept of microprocessor/microcontroller as well as recognize the role of electronics and microprocessors / microcontroller and their impact in a wide range of engineering applications. The learning and teaching approach for the module will be self-directed learning and problem-based learning composed of interactive lecture sessions, supervised practical tutorial sessions and project-based assignment to complement the theoretical principles.
Numerical Methods and Data Analysis	This course introduces programming with MATLAB and provides skills that promote the use of numerical methods in engineering applications. This course will also provide the students with knowledge on the background of engineering applications using statistical analysis and

	the use of machine learning. The learning and teaching approach for the module will be through problem-based learning and self-directed learning pedagogies composed of interactive lecture session and supervised tutorial sessions to complement the theoretical principles. The assessment approach for the module will be test, assignment, and final examination.
Engineering Statics	Static equilibrium and internal/external forces are introduced in this module. The analysis of pin-jointed trusses and the estimation of bending moments and shear forces in loaded beams are then carried out using these concepts. The elasticity principle is discussed and then used to the calculation of the stresses inside and deflections of a statically determinate beam. Finally, we explore plastic collapse mechanisms and apply them to the study of beams. The following are the module's objectives: 1) To equip learners with statics principles, free body diagrams, equilibrium, and forces in two- and three-dimensional spaces; and 2) To provide students with the abilities necessary to compute and analyze bending moment and shear diagrams. This program will employ guided learning, self-directed learning, and problem-based learning. Lectures, tutorials, and hands-on sessions are all integrated into a blended learning environment.
Engineering Solid Mechanics	The module emphasizes on the analysis and design of structural members subjected to tension, compression, torsion and bending. Students are taught to predict failure of structures, loading in pressure vessels and deflection of beams. The learning and teaching approach for the module will be guided learning in the tutorials and problem-based learning in the practical session. The mode of delivery of this module consists of 160 hours of student learning time. The module is supported by a combination of face-to-face learning, problem-based learning and blended learning such as online lectures.
Computer Aided Engineering & Geometric Modeling	This module presents the processes of solid modelling computer-aided design (CAD) and computer-aided engineering (CAE) using SOLIDWORKS software. The design process from the conceptual design stage to the manufacturing stage via hands-on and virtual experience of component shape design. This module enables students to create and design 3D models, that can then feed into Simulation and used for 3D printing, which are the pillars in Industrial Revolution 4.0 (IR4.0). The learning and teaching approach for the module will be a combination of guided and self-direct learning. Students attend lecture classes and engage with practical tasks during the practical sessions. In preliminary modelling, students engage with sketching and part modelling using different SOLIDWORKS sketching tools (i.e. basic and advance) and shape features (i.e. extrude, cut, revolve, fillet, chamfer, and others features). Students also engage with creating 2D drawings of a model include detailing (dimensions, bill of materials, notes, and other annotations). In addition, students are also involved in building assemblies consisting of many components. For assembly components, students engage with adding components to an assembly and create a link between the assembly and the component using mate features (e.g. basic, advance and mechanical mates). Furthermore, students also engage with analysing the models using kinematic analysis and motion study.
Numerical Analysis for Engineers with Applications using ANSYS	Students will learn the fundamental theory of finite element method (FEM) and its application in solving various structural analysis problems. A commercial FEM software, ANSYS, will be introduced. Students will practice operation of the software and use it to analyse

	and solve a series of engineering problems. This module supports the Simulation pillar of Industrial Revolution 4.0 (IR4.0) where one can test and optimise their design even before prototyping or production. The learning and teaching approach for the module will be combination of guided and self-direct learning. The teaching and learning approach for the module consists of lectures, tutorials, and problem-based learning. Students will solve engineering related problems using ANSYS software in the computer lab and use it to complete their assignments.
Manufacturing Engineering	This subject introduces the range of different manufacturing processes used for various products based on the type of engineering materials along with some basic selection criteria for determining the appropriate processes for a given product. The subject also introduces fundamental knowledge for the conventional and advance manufacturing processes (involving the machine, tools, and standards), Industrial Revolution 4.0 and the sustainable manufacturing which in line with the Sustainable Development Goals designed by United Nation. The learning and teaching approach involve both classroom and online-based learning (authentic learning & guided learning). Authentic learning allows the integration of fundamental knowledge with real-life problems. Guided learning was applied to facilitate learning for student needs. The module is delivered via lectures and tutorials apart from practical sessions at the workshop.
Engineering Dynamics	This module introduces the students to the scope of kinematics and kinetics which students will be introduced and exposed to deal with problems related to motions for example vehicle, machineries and daily motions. The three-dimensional nature of motion is considered and explored using simple vector concepts and basic calculus. The basic methods of force/acceleration, Newton's second law, impulse/momentum and work/energy are developed and applied. The power transmission and speed characteristics of gear trains are examined as well as the basic of vibration is introduced. This module is a combination of Guided Learning with face-to-face tutorial and online lecture, and Problem-based Learning for practical and assignment.
Mechanical Vibration	The module emphasizes the basic principle of mechanical vibration which consist of basic free and forced vibration under undamped and damped condition. The discussion of harmonic response is very important in order to understand the basic response of an ideal vibration system. The module also discusses the principle of degree of freedom in vibration system and vibration suppression case such as vibration transmission and isolation. The approach of teaching and learning will include the guided-learning and case-based learning which consist of lecture, tutorial and lab session for practical experience.
Engineering Mathematics I	Engineering mathematics I provides students with basic knowledge on applied engineering mathematics which is used in most of the engineering design applications. This module covers some of the most common used mathematics techniques, inclusive of software for solving engineering problems, and this support one of the important pillars (simulation) of IR4.0. Topics covered in this module include hyperbolic functions, complex numbers, matrix, partial differentiation, mathematical model development, and integration techniques. The teaching and learning approaches adopted for this module are guided learning, self-directed learning and problem-based learning. Lectures and tutorials will be delivered through blended learning approach,

	including face-to-face learning, online synchronous face-to-face learning, online asynchronous non-face-to-face learning and online asynchronous activities.
Engineering Mathematics II	Engineering mathematics II provides students with basic knowledge on applied engineering mathematics including numerical function and operators which is used in most of the engineering design applications. This module covers the mathematical modelling of engineering problems using differential equations and introduces various techniques for solving the challenges. It covers the statistics, probability and the use of software to solve engineering problems, and this support one of the important pillars (simulation) of IR4.0. It also covers the transformation of system representation between time and complex frequency domains and analysis and solution. The teaching and learning approaches adopted for this module are guided learning, self-directed learning and problem-based learning. Lectures and tutorials will be delivered through blended learning approach, including face-to-face learning, online synchronous face-to-face learning, online asynchronous non-face-to-face learning and online asynchronous activities.
Engineering Design and Analysis	This module lays the grounds for a project based learning journey that the students will go through. It prepares them for a successful and rewarding programme of study in their chosen engineering discipline through cultivating successful engineering habits of thinking, doing, collaborating, and communicating effectively. The module also introduces the wider context for engineering practice including the Grand Challenges for engineering in the 21st Century. The teaching and learning approaches for this module are Guided Learning, Authentic Learning, Self-directed Learning, and Project-based Learning.

BACHELOR OF CHEMICAL ENGINEERING WITH HONOURS

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	CHE60504	Safety in Process Plant Design	4	-
2	CHE60804	Separation Processes	4	ENG60304
3	CHE61104	Chemical Engineering Thermodynamics and Simulation	4	CHE61404
4	CHE61204	Mass Transfer	4	-
6	CHE61404	Thermodynamics and Heat Transfer	4	-
7	CHE61504	Engineering Fluid Mechanics	4	-
8	CHE61904	Biochemical Process	4	-
9	CHE62004	Process Control and Instrumentation	4	ENG60304
10	CHE62104	Chemical Reaction Engineering	4	-
11	CHE62204	Advanced Heat and Momentum Transfer	4	-
12	CHE62304	Process Plant Design and Economics	4	ENG60304
13	ENG60204	Professional Engineers and Society	4	-
14	ENG60304	Material and Energy Balance	4	-
15	ENG60504	Properties and Applications of Materials	4	-
16	ENG60604	Sustainable Development in Engineering	4	-
17	ENG60704	Engineering Design and Project Management	4	PRJ62404
18	ENG61104	Numerical Methods and Data Analysis	4	-
19	MTH61304	Engineering Mathematics II	4	MTH61204
20	PRJ62404	Engineering Design and Analysis	4	-

Module Name	Module Synopsis
Safety in Process Plant Design	This module covers hazards, human errors, HAZOP, safety standards, risk assessment methodology and safety management in details for industrial safety. Teaching are based on Authentic Learning and Problem-Based Learning Pedagogies, which supported by a combination of traditional presentation based teaching, problem based case studies and presentation, and individual problem solving.
Separation Processes	This module introduces the fundamental principles of chemical engineering separation processes. The use of relevant equations such as vapour-liquid equilibria (VLE) and liquid-liquid equilibria (LLE) to design the unit operation will be introduced. It also introduces problem-solving approaches reflecting current trends in process integration to optimize the process parameters such as efficient material and energy usage to obtain a desired product. This module also covers separation processes such as distillation, evaporation, absorption, drying, adsorption, liquid-liquid extraction, solid liquid extraction, membrane separation, supercritical fluid extraction and multicomponent separation technology. Practical problems are used as examples. The learning and teaching approaches focus on the guided learning, self-directed learning and problem-based learning. Students will take an active role in the learning process and the lecturer facilitates students during the lectures, tutorial, practical sessions and assignment. The mode of delivery includes face-to-face learning, online synchronous face-to-face learning, online asynchronous non-face-to-face learning and online asynchronous activities.

Chemical Engineering Thermodynamics and Simulation	The module covers important aspects of thermodynamics in chemical engineering. This module contains an essential topic: the basic laws of thermodynamics, Maxwell relationships, equations of state, predictions of thermodynamics properties, phase equilibria, and chemical reaction equilibria. Computational chemical process simulator is introduced to students, intended to develop fundamental skills using computer-aided tool to perform process synthesis, simulation, analysis, and optimization. Practical problems are used as examples. The teaching and learning approach focuses on student-centered learning in the form of lecture, tutorial, laboratory experiment and computational simulation.
Mass Transfer	This module covers the basic principle of mass transfer and its application in chemical engineering system. Mass transfer takes place in a single phase or across the phase boundaries in gas, liquid, solid-phase materials, and multiphase systems. The module includes 1-dimensional and 2-dimensional steady and unsteady state mass transfer in chemical engineering processes, involving transport in multicomponent system. Chemical engineering processes such as membrane separations, adsorption, absorption, crystallisation, and filtration will be introduced. The teaching and learning approach will focus on guided learning, self-directed learning, and problem-based learning. Guided learning will be adopted for the lecture and tutorial classes whereby learning activities will be conducted and guided by the lecturer with peer involvement to achieve the learning outcomes. The module is also supported with problem-based learning through the open-ended practical lab experiment and assignments.
Thermodynamics and Heat Transfer	This module combines the knowledge related to both energy transfer (as heat) and thermodynamics to expose the students to a wide variety of topics that will be instrumental in their academic and career advancement like the applications of the first and second laws of thermodynamics and the mechanisms of heat transfer in heat engines, heat pumps, refrigeration system, and heat exchangers. This module covers topics such as introduction and basic concepts of thermodynamics, thermodynamic property tables, 1st law of thermodynamics, 2nd law of thermodynamics, power cycles, refrigeration cycles, conduction, convection, radiation, and heat exchangers**.** The learning and teaching approaches for this module are based on guided learning, self-directed learning, and problem-based learning. Lectures, tutorials, and practicals will be delivered through a blended learning approach through a combination of face-to-face and online lectures, face-to-face tutorial and practical sessions, and online asynchronous activities.
Engineering Fluid Mechanics	This module deals with three fundamental topics: first, hydrostatics in which the pressure and its relevant hydrostatic forces are studied. Second, hydrodynamics in which basic laws of conservation of mass, energy, and momentum in relation to the fluid flow and its engineering applications for ideal and viscous fluid systems are studied. Third, dimensional analysis, similarities, and Π-theorem are studied. The contents of this module equipped the student with important knowledge pertaining fluid static and fluid flows which support the achievement of SDG 6, Clean Water and Sanitation. In general, the module helps to develop time management, communication, research and analytics. These skills are implicitly assessed. The teaching-learning and

	assessment strategies covered lecture, tutorial, practical and blended learning. The learning and teaching approaches for the module will be guided-learning and self-directed learning.
Biochemical Process	This module introduces some fundamental aspects of biochemical processes, bioreactor design and purification-separation technologies related to bioprocess engineering. The structures and functions of microorganisms and biomolecules are introduced. Enzymes kinetics, enzymes application and the factors that affect enzymes activity are covered. Cell metabolic pathway and cell growth kinetics are also studied. Students will be exposed to the aspects of the bioreactor design such as reactor configuration, operating conditions and mode of operation. Downstream bioprocesses including recovery of product, product isolation, purification and polishing are emphasised. The module is supported by a combination of face-to-face and online lectures, tutorials, practical and assignment. The teaching and learning approach applied in the module include guided learning, self-directed learning and problem-based learning.
Process Control and Instrumentation	This module covers the mathematics and dynamic modelling techniques, basic principles of analysis and design of process with the appropriate mathematical tools and introduction to instrumentation. Students are taught on how to construct and analyse advanced dynamic models of chemical engineering systems. Several mathematical techniques with applications in chemical engineering are covered. It also covers the mathematical tools required to analyse and solve linear and non-linear chemical engineering-based models, with examples and introduction to instrumentation will be also taught. This module will also cover topics such as transfer functions, ideal dynamic systems, classical PID controllers, feedback control block diagram analysis, stability concept and analysis, structure and components of modern control loops and practical aspects of industrial process control. The learning and teaching approaches focus on the guided learning, self-directed learning and problem-based learning. Students will take an active role in the learning process and the lecturer facilitates students during the lectures, tutorial, practical sessions and assignment for the topics the mathematical modelling and analysis of the dynamic models of chemical engineering systems, application of MATLAB dynamic simulation software, structure, components and instrumentation for control loops and design and stability analysis of feedback controllers. The mode of delivery includes face-to-face learning, online synchronous face-to-face learning, online asynchronous nonface-to-face learning and online asynchronous activities.
Chemical Engineering Thermodynamics and Simulation	The module covers important aspects of thermodynamics in chemical engineering. This module contains an essential topic: the basic laws of thermodynamics, Maxwell relationships, equations of state, predictions of thermodynamics properties, phase equilibria, and chemical reaction equilibria. Computational chemical process simulator is introduced to students, intended to develop fundamental skills using computer-aided tool to perform process synthesis, simulation, analysis, and optimization. Practical problems are used as examples. The teaching and learning approach focuses on student-centered learning in the form of lecture, tutorial, laboratory experiment and computational simulation. Guided learning, self-learning, problem-based, and knowledge-based learning are adapted. Class activity during lecture will help students to achieve the learning outcomes. During tutorial, the students will be guided by lecturer with peer involvement. Group work

	involved preparation of laboratory report. The mode of delivery includes face-to-face and on-line learning.
Chemical Reaction Engineering	This module introduces the concepts on designing reactor involving homogenous and heterogenous reactions. The fundamental on designing ideal reactors such as continuous stirred tank reactor (CSTR), plug flow reactor (PFR) and batch reactor will first be introduced. The effect of operating condition such as temperature on conversion and reactor design is analysed. Besides single reaction, students will also be working on optimizing multiple reaction systems based on conversion, yield and selectivity. Subsequently, the mechanism for catalytic reactions that include bulk diffusion, adsorption, surface reaction and internal diffusion will be discussed. Besides, students will be exposed to designing multiphase reactor which include mass transfer and reaction kinetic principles. The module further covers topic on non-ideal reactors, analysing how non-ideal behaviour affects the performance of reactor operation. The module is supported by a combination of face-to-face and online lectures, tutorials, practical and assignment. Teaching and learning approach applied in the module include guided learning, self-directed learning and problem-based learning. Case studies and quizzes are some of the materials to be incorporated into lectures and tutorials.
Advanced Heat and Momentum Transfer	This module covers essential theoretical principles for momentum and heat transport, addresses laminar and turbulent flows. The principle of similitude is applied to the design and analysis of flow systems. Application of fundamental principles Newton's law of viscosity and Fourier's law of heat conduction to flow system are covered. Transfer coefficients, Newtonian and Non-Newtonian fluids, conservation laws and steady state shell momentum and energy balances are taught. Advanced heat transfer topics combining convection and conduction includes various geometries of solid boundaries. Engineering applications such as complex flow in heat exchanger systems is analysed. Computer based methods of solution of heat and mass transfer problems are introduced and applied to some process examples. The principles of numerical solution of partial differential equations, classification of finite differences and finite elements equations are taught.
Process Plant Design and Economics	This module is a prerequisite to Chemical Engineering Group Project 1 and 2. It covers the knowledge and practice required for a detailed design of chemical equipment and processes in a chemical engineering plant. The main areas include mechanical design, equipment selection, process operability (including piping and instrumentation), safety and sustainability. This module focuses on the guided learning in the form of lecture, tutorial and computational simulation. Class activities such as group discussion and presentation are conducted with lecturer's guidance and peer involvement. In addition to that, this module also focuses on project based learning, in which students will be assigned to complete a given project/ task in group assignment. This module is mainly focuses on blended learning that involves proportion of face-to-face lectures, guided and self-learning tutorial.

Professional Engineers and Society	This module discusses and studies the code of ethics and professional conduct a Professional Engineer should strive to achieve and maintain. It also provides the necessary skills to ensure that undergraduate students are aware of the various learned and regulatory bodies that are responsible for the ethics of the profession, safety and health, quality management and project management financing control. The present module also emphasizes on Industrial Revolution 4.0 (IR4.0) and Sustainable Development Goals (SDG) to give exposure towards current trends of the world.
Material and Energy Balance	This module introduces the methods to evaluate the material and energy balance of chemical process in single and multiple-unit system. The evaluation of material and energy balance of chemical process in open, closed, reacting and non-reacting systems is covered in this module. The teaching and learning approaches adopted for this module are guided learning, self-directed learning and problem-based learning. Lectures, tutorials and practical will be delivered through blended learning approach, which including face-to-face learning, online synchronous face-to-face learning, online asynchronous non-face-to-face learning and online asynchronous activities.
Properties and Applications of Materials	The module provides an overview of the materials used in engineering applications and some fundamental selection methods for choosing the most suited materials for a given application. Additionally, the course introduces fundamental physics that govern the properties of materials, including bonding types, atomic/molecular structures, and materials and processes for 3D printing. The module will employ a guided learning approach during the lecture portion and a problem-based learning approach during the practical session. The mode of delivery of this module consists of 160 hours of student learning time. This program will employ guided learning, self-directed learning, and problem-based learning. Lectures, tutorials, and hands-on sessions are all integrated into a blended learning environment. Regular review, feedback, and complex technical problems all contribute to a deeper knowledge and alignment with the learning outcomes.
Sustainable Development in Engineering	Sustainable development in engineering is a practice that all chemical engineers need to implement. All possible pollutants (eg, air, water, soil) are discussed in this module and case studies are applied to implement standards on existing pollution problems. The scope cover topics of current environmental challenge, sustainable development principles, legislations for sustainable process design, sustainable chemical process system to prevent air, water and soil pollution. In practical lab sessions, students are required to conduct investigation to study wastewater treatment efficiency through experimental configuration. The teaching and learning approach for the module will be guided learning, self-directed and problem-based learning, with students engaging with practical tasks during the laboratory sessions and collaborating in group for solving case studies in lecture and tutorial classes.
Engineering Design and Project Management	This module equips engineering students with innovation techniques such as design thinking, sharpening their innovation skills. This will empower them to develop financially and economically sustainable solutions and enable them to play a key technical and economical role

	in activities ranging from creating jobs to addressing the Grand Challenges of the 21st Century. Aside from that, students are also required to consider coming up with projects that are in line with the 17 Sustainable Development Goals of the United Nations to ensure value in their work towards tackling real and current issues. This is a Guided Learning module that also requires the students to proactively practice self-directed learning in the process of achieving the learning outcomes for the module. There will also be aspects of Authentic Learning wherein the students must develop a solution with real-life application potentials in mind.
Numerical Methods and Data Analysis	This course introduces programming with MATLAB and provides skills that promote the use of numerical methods in engineering applications. This course will also provide the students with knowledge on the background of engineering applications using statistical analysis and the use of machine learning. The learning and teaching approach for the module will be through problem-based learning and self-directed learning pedagogies composed of interactive lecture session and supervised tutorial sessions to complement the theoretical principles. The assessment approach for the module will be test, assignment, and final examination. At end of the learning period, the students are expected to demonstrate critical thinking and problem-solving skills using statistical analysis and numerical methods using MATLAB and machine learning RapidMiner softwares.
Engineering Mathematics I	Engineering mathematics I provides students with basic knowledge on applied engineering mathematics which is used in most of the engineering design applications. This module covers some of the most common used mathematics techniques, inclusive of software for solving engineering problems, and this support one of the important pillars (simulation) of IR4.0. Topics covered in this module include hyperbolic functions, complex numbers, matrix, partial differentiation, mathematical model development, and integration techniques. The teaching and learning approaches adopted for this module are guided learning, self-directed learning and problem-based learning. Lectures and tutorials will be delivered through blended learning approach, including face-to-face learning, online synchronous face-to-face learning, online asynchronous non-face-to-face learning and online asynchronous activities.
Engineering Mathematics II	Engineering mathematics II provides students with basic knowledge on applied engineering mathematics including numerical function and operators which is used in most of the engineering design applications. This module covers the mathematical modelling of engineering problems using differential equations and introduces various techniques for solving the challenges. It covers the statistics, probability and the use of software to solve engineering problems, and this support one of the important pillars (simulation) of IR4.0. It also covers the transformation of system representation between time and complex frequency domains and its analysis and solution. The teaching and learning approaches adopted for this module are guided learning, self-directed learning and problem-based learning. Lectures and tutorials will be delivered through blended learning approach, including face-to-face learning, online synchronous face-to-face learning, online

	asynchronous non-face-to-face learning and online asynchronous activities.
Engineering Design and Analysis	This module lays the grounds for a project based learning journey that the students will go through. It prepares them for a successful and rewarding programme of study in their chosen engineer discipline through cultivating successful engineering habits of thinking, doing, collaborating, and communicating effectively. The module also introduces the wider context for engineering practice including the Grand Challenges forengineering in the 21st Century. The teaching and learning approaches for this module are Guided Learning, Authentic Learning, Self-directed Learning, and Project-based Learning.

SCHOOL OF ARCHITECTURE, BUILDING & DESIGN

BACHELOR OF SCIENCE (HONOURS) IN ARCHITECTURE

Common Core

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	ARC60104	Advanced Architectural Construction	4	BLD61604
2	ARC60208	Architectural Design I	8	-
3	ARC60308	Architectural Design II	8	ARC60208
4	ARC60408	Architectural Design III	8	ARC60308
5	ARC60508	Architectural Design IV	8	ARC60408
6	ARC60604	Computer Applications	4	-
7	ARC60608	Architectural Design V	8	ARC60508
8	ARC60704	Theories of Asian Architecture	4	-
9	ARC60804	Architecture History and Theory	4	-
10	ARC62404	Design Communication	4	-
11	BLD61604	Building Construction and Materials	4	-
12	BLD61904	Building Services	4	-

CHOOSE ONE (1) EXTENSION

Heritage and Conservation

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	ARC61004	Measured Drawing and Documentation	4	-
2	ARC61104	Heritage Conservation: Theories, Principles and Practices	4	-
3	ARC61204	Architectural Conservation and Tourism	4	-
4	ARC61604	Sustainable Design Policies and Regulation	4	-
5	ARC61804	Green Strategies for Building Design	4	-

Sustainable Design

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	ARC61604	Sustainable Design, Policies and Regulations	4	-
2	ARC61704	Sustainable Living	4	-
3	ARC61804	Green Strategies for Building Design	4	-
4	ARC61904	Energy and Architecture	4	-
5	ARC62004	IT Application for Sustainable Design	4	-

Module Name	Module Synopsis
Advanced Architectural Construction	This module introduces the principles and practices of construction technology for long-span and tall buildings. It focuses on the construction systems of basement, building façade and envelope systems as well as steel construction. It also covers the new and recent construction technologies and systems including modular construction (MC) and Industrialised Building System (IBS).
Architectural Design I	Architectural Design 1 is structured as an introduction to architectural design. This preliminary design module aims to present and explain design through the expression of the perception of 'self' and the body. Students will undertake a series of studio-based exercises and assignments that introduces the fundamental methods, principles and approaches in design thinking and basic spatial design.
Architectural Design II	This module introduces the principles and methods of analysis, abstraction, and synthesis in design thinking that are common to many design fields, including building and architecture. The key emphasis of the studio is "User and Context", which investigates the relationship between user and natural environment. In this studio, students will undertake a series of studio-based exercises; firstly, an investigation of the architectural spaces through prototype studies of Asian Houses; and secondly, an exploration of form and space through architectural conceptualisation. Finally, students will design a small freestanding building that meets user requirements and engages with the site context.
Architectural Design III	The module emphasizes on 'experiencing space and place' in architecture. In the subject, students are introduced to, firstly, an exploration of spatial typologies and poetics in architecture; and secondly, the concept of neighbourhood and community. In their preliminary design work, students engage with studies and design of different spatial typologies (i.e. linear, spiral, spine, centric, etc.) for a simple dwelling space which explores the idea of architectural tectonics and experiences. Subsequently, the major project involves the design of a small scale community building (e.g. gallery, small library) in the open landscape/suburban condition which engages with the spirit of place inherent within the site, the site topography, history and socio-cultural events. The design work explores the plansection integration to achieve architectural form that is tectonically expressive, functional and responsive to its site.
Architecture and Environment	This module introduces the components of the ecosystem and ecological principles concerning the environment as well as numerous environmental issues. It focuses on human intervention affecting the environment both positively and negatively and the relationship of buildings with the natural system. The module introduces the basic elements of climate and their influences on architecture, which aims to facilitate students to create acceptable environmentally conscious and comfortable building designs.
Architectural Design IV	The studio explores design by harnessing environmental qualities and conditions for human and environment sustainability through a project with a specific community of users within a given context. The projects involve studies of precedence on design projects that are responsive to the environmental conditions and sustainable issues. Using the precedent studies, students explore the environment poetics of the building enclosure that respond to the basic natural context such as the sun, wind, heat, cold, energy issue and existing building context

	(which has clustered built forms for example community center, nature appreciative center, research center). Considerations should be given to the complexity of the program, site topography and vegetation, socio-cultural events, and variety of passive strategies for sustainable design. The design work should contribute to and merge harmoniously with environment and the site, and provide the best of experiences for the community of users. Students are required to demonstrate applications of knowledge gained from Environmentally Sustainable Design and Building Science 1 modules from prior semesters and integrate research from Asian Architecture module.
Computer Applications	The module introduces essential skills of communicating design through the aid of relevant computer software. Students are taught in utilizing the computer as visualization, modelling and rendering tool in the production of drawings needed in the design process. They are also encouraged to carry out self-research in regards to the other capabilities and more complicated features of the software. Students will also be taught on the potential of "cross breeding" different software, in order to garner the necessary desired results for their visualization work.
Architectural Design V	The module is a design studio which emphasizes on the idea of 'place making for the urban communities'. Students will undertake a studio-based exercise which deals with urban infill within a dense urban environment. The two major parts of the studio are a) urban contextual study and b) architectural design development. The final outcome is an architectural design that is responsive to its urban character. In their preliminary design work, students engage with urban studies and strategy/concept development to develop an appropriate programme and massing studies responding to the urban conditions. Subsequently, the major project involves the development of a design scheme which engages with the spirit of urban place and the everyday life of the urban community. The design work explores the plan-section-elevation relationship to achieve an architecture that acts as a vibrant infill exploring the maximum potential of the urban space.
Theories of Asian Architecture	The module explores how traditions of architecture developed in the South, Southeast and East Asian regions in terms of architectural design and construction, building science and technology, garden design and city planning. Studies of significant issues in contemporary Asian architecture are guided through three key themes: tradition, modernity and globalization. These themes will guide the organization of lecture and seminar sessions, which will proceed from the establishment of a basic theoretical apparatus to the examination of specific cases.
Architecture History and Theory	A chronological survey of the developments of Western architecture from the beginning of time to the modern movement, with consideration of the intellectual, aesthetic, technological, political and economic factors which have influenced the design of buildings. These issues are explored with reference to major contemporary examples and the work and philosophy of significant exponents.
Design Communication	The subject introduces fundamental skills for the appropriate communication of architectural design. It engages different means of visualization and expression of space and spatial ideas through architectural drawings to prepare students with the skills required in design projects. These skills are taught through a series of freehand and constructed drawing held both outdoors and in the studio.
Building Construction and Materials	In this module, students will learn the basic building construction and materials used in the construction of small to medium scale buildings.

	It focuses on the building elements which include the sub-structure and super structure and main construction materials such as concrete, timber, metal and glass.
Building Services	Students are introduced to the basic services systems commonly provided in buildings, primarily cold and hot water supply, sanitary and sewerage system, rainwater management, electrical supply, fire protection in buildings, mechanical ventilation, air-conditioning systems and vertical transportation systems. Students will also learn about building codes such as Uniform Building By-Law (UBBL) and other relevant laws and standards related to the subject matters.
Measured Drawing and Documentation	The module aims to develop an understanding of the principles of heritage building conservation and the methods of documenting it through measured drawings. Students are to document historically and architecturally significant buildings in the form of as-built drawings.
Heritage Conservation: Theories, Principles and Practices	This module is intended to give students a practical understanding of the key principles, theories and methods of documentation of heritage conservation to enable students to understand the importance of preserving cultural and architectural heritage. Students will develop their awareness and understanding of the different approach of heritage conservation of buildings and landscapes. Students will also explore the differences between conservation, restoration and reconstruction within a historical and cultural context.
Architectural Conservation and Tourism	This module intends to introduce to the students the current issues of conservation in Malaysia and beyond and to instill awareness on the values and importance of architectural conservation. It also identifies the inter-dependence between architecture and tourism and showcases how tourism is sometimes vital for the preservation of historic architecture and places as well as the innovative re-use of buildings. The module also highlights the balance that is necessary to achieve a long-term sustainable environment for memorable architecture to survive and flourish in the era of mass tourism.
Sustainable Design, Policies and Regulations	An introductory module that allows students to learn the basic knowledge in sustainable design and policies that regulates its practice. In this module, topic will look into fundamentals of sustainability, principles of sustainable design and basic method of achieving it. Students are to learn, read and interpret regulations and cases relating to water, air, building construction and acts in the environment. Furthermore comply with today's sustainability requirements and qualifications through understanding and applying GBI and the green building requirements.
Green Strategies for Building Design	A look into energy efficient residential, commercial and other building typology. Allocation of green components: building shell, HVAC, lighting, indoor air quality and others. Students will undertake case studies to critically evaluate the effectiveness of real life applications of sustainable design strategies.
Sustainable Living	In an increasingly urbanized world, there is growing international demand for the studies on livable cities. This course work will equip the learner with the knowledge and skills to participate in this rapidly expanding profession and find their position as architects. The module uses case study method through films and explores on cities of Malaysia and international contexts focusing on a particular theme pertinent to sustainable living. The students are to explore the relationships of intangible aspects or the content such as cultural, climatic and social situations/user-experiences to tangible aspects such as form, activity and movement pattern. Firstly, the students

	understand what makes the characteristics of a city for a formal understanding on sustainable aspects. Later, such a characteristic understanding on urban form will be tested for what is still evidenced on the urbanity and content of livability.The course work aims to inspire the students towards fundamental knowledge and skills necessary to comprehend urban places and sustainable living. It is an exploration of both literature and reality.
Energy and Architecture	The module will provide students a comprehensive understanding of how energy is used in buildings. Hence, will introduce principles and ways to achieve energy efficiency in environmental systems operation, renewable energy technology and architectural design features.
Sustainable Design, Policies and Regulations	An introductory module that allows students to learn the basic knowledge in sustainable design and policies that regulates its practice. In this module, topic will look into fundamentals of sustainability, principles of sustainable design and basic method of achieving it. Students are to learn, read and interpret regulations and cases relating to water, air, building construction and acts in the environment. Furthermore comply with today's sustainability requirements and qualifications through understanding and applying GBI and the green building requirements.
IT Application for Sustainable Design	The module aims to introduce students to the use of information technology (IT) and software applications using Building Information Modeling (BIM) as the main platform. BIM is a thriving technology and approach that can be used in Architecture, Engineering and Construction (AEC) industry of different countries to achieve sustainable design. Students are expected to learn the areas of BIM and its applications with the usage of relevant tools such as Autodesk Revit in order to produce an information based building model for building documentation, environmental analysis and building performance simulations.

BACHELOR OF QUANTITY SURVEYING (HONOURS)

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	LAW66004	Legal Studies	4	-
2	BLD60104	Construction Technology I	4	-
3	BLD61104	Environmental Science and Services	4	-
4	BLD60308	Fundamental Measurement and Costing	8	-
5	BLD60204	Construction Technology II	4	BLD60104
6	BLD61304	Building Services Technology	4	BLD61104
7	BLD60408	Measurement of Building Works and Costing	8	BLD60308
8	BLD61504	Procurement and Contract Administration	4	-
9	BLD60608	Construction Economics and Management	8	-
10	BLD61804	Value Engineering and Management	4	-
11	BLD60208	Engineering Measurement	8	-
12	QSB61004	Professional Practice	4	-
13	LAW66104	Construction Law and Dispute Resolution	4	-
14	QSB61008	Quantity Surveying Studio	8	-

Module Name	Module Synopsis
Legal Studies	This module will inform the student of the general principles of law that are relevant to the construction industry. It will enable the student to analyze and apply the law, which in turn will enable the student to provide creative solutions to legal issues.
Construction Technology I	This module enables the development and establishment of a base knowledge of the fundamental principles of design, materials and technology. Such base knowledge enables students to appreciate the decisions made on design, materials, functional element, selection and the rational and economic use of resources. It also explains the fundamentals of foundations, piled foundation, concrete framed buildings, walls, windows, doors. The students are also introduced to the principles of sketching.
Environmental Science and Services	This module introduces students to services that are commonly provided in a building, primarily cold water treatment and supply, sewerage disposal and treatment, storm water management, telecommunication services and ventilation systems. Students are also made familiar with basics requirements, Uniform Building By-Law (UBBL), planning, coordination and installation of these services.
Fundamental Measurement and Costing	The module covers the principles, purpose and function of Standard Method of Measurement (SMM) including measurement principles, descriptions and standard phraseology in the measurement of structural works. The students are also introduced to the principles of specification writing, form of specification and their uses in the various trades. This module also provides an introduction on the principle of estimating and components prices such as material, plant, wastage, profit and labour.
Construction Technology II	This module enables the development and establishment of knowledge of the principles of design, materials and technology. This knowledge enables students to appreciate the decisions made on design, materials, functional element, selection and the rational and economic use of resources. This module explains the ceilings, stairs,

	roof structure, roof coverings, building frames, deep excavation, shoring and underpinning and retaining wall.
Building Services Technology	This module introduces students to services that are commonly provided in a building, such as fire protection system, vertical transportation system, mechanical air-conditioning system and electricity generation and supply system. Students are also made familiar with basics requirements, Uniform Building By-Law (UBBL), planning, coordination and installation of these services.
Measurement of Building Works and Costing	This module covers the principles, purpose and function of Standard Method of Measurement (SMM2) including measurement principles, descriptions and standard phraseology. It also covers the measurement of architectural works based on the Standard Method of Measurements for Building Works Second Edition by the Royal Institution of Surveyors, Malaysia. The students are exposed to the specification writing and preparation of Bills of Quantities for the various trades as described above. This module also provides an introduction on the principle of estimating and components prices such as material, plant, wastage, profit and labour.
Procurement and Contract Administration	This module provides an overview of professional and contractual responsibilities of a quantity surveyor in the consultant group from the design stage to the final account stage. It will focus on the importance of a clear understanding of the organization and administration of quantity surveyor and construction management practices and the legal and contractual procedures in relation to building procurement.
Construction Economics and Management	This module provides an overview of the Quantity Surveyor's role during the pre and post-tender stage of a development, roles and contribution of construction industry to national economy. The students will be introduced to practical situations of the various methods of controlling the cost of buildings at the design stage. Students also will be introduced to the relationship between building morphology, design variables and life cycle costing of a building. It is initiated with the introduction of the process in a property development and factors that influence the development process. The module also covers principles and practices of financial management and various techniques of development appraisal and source of finance available. It is then concluded with the important of market research to the overall development process and its impact of research to the development.
Value Engineering and Management	This module provides the history, background, theories, concepts and principles of Value Management/Value Engineering in decision making process. The module also introduces the idea of unnecessary cost and cost cutting exercise in the cost planning and control stage of the project development. It is then generally covers area of implementation of value engineering and the key person involved – the facilitator. The subject concluded with a series of discussion on the problem and constraint in the implementation stage based on some significant case studies.
Engineering Measurement	This module covers the principles, purpose and function of the SMM2 and MYCESMM including measurement, descriptions and standard phraseology in the measurement of cold and hot water plumbing works, sanitary plumbing and appliances, M&E works and various civil engineering works. The students are also introduced to the principles of specification writing, form of specification and their uses in the various trades. The module integrates computing into their discipline of study by teaching the students to use relevant computer software programs to prepare Bills of Quantities including measurement, comprehensive pricing including building up rates, mark-up profits,

	resource reports showing the resource quantities and rates for the whole projects, budget and cost control , tendering, tender analysis and evaluation and elemental cost planning.
Professional Practice	The module provides an overview of professional and contractual responsibilities of a Quantity Surveyor in the consultancy setup from the inception stage to the final account stage. It focusses on the importance of a clear understanding of the organization and contract administration of quantity surveying practices and the legal and contractual procedures in relation to built environment.
Construction Law and Dispute Resolution	This module provides an understanding of the principles of construction laws and its applications. By understanding the basic principle of construction law, the importance of adhering to the specific procedures and notices are emphasized. The next phase is to develop an in-depth knowledge on the application of the law and the remedies available to the parties. Subsequently, students will be able to adopt a systematic approach to analyze disputes and the respective liabilities. Lastly, this module focuses to enhance the students' knowledge on matters involving contractual claims and its assessment.
Quantity Surveying Studio	This module covers the measurement of building works and external works, principle of preamble and specification writing and their uses for the various trades, estimating and cost plan, work programme, procurement and project administration and teamwork coordination.

FACULTY OF BUSINESS & LAW

TAYLOR'S BUSINESS SCHOOL

SCHOOL OF MANAGEMENT AND MARKETING

BACHELOR OF BUSINESS (HONOURS) IN INTERNATIONAL BUSINESS & MARKETING

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	ACC62104	Accounting for Non-Specialists	4	-
2	MGT60104	Introduction to Management	4	-
3	COM61604	Business Communication	4	-
4	ECN60104	Microeconomics	4	-
5	FIN60104	Introduction to Finance	4	-
6	MKT60104	Principles of Marketing	4	-
7	ECN60204	Macroeconomics	4	ECN60104
8	LAW60104	Business Law	4	-
9	MKT60204	Consumer Behavior	4	MKT60104
10	BUS60104	Introduction to International Business	4	-
11	OBM60104	Organisational Behavior	4	MGT60104
12	STA60104	Quantitative Methods for Business	4	-
13	MGT60304	Export Practices and Management	4	BUS60104
14	MKT60604	Integrated Marketing Communications	4	MKT60104
15	RES60104	Research Methods	4	-
16	FIN61104	International Finance	4	-
17	MGT60604	Transnational Management	4	BUS60104
18	MKT60404	Services Marketing	4	MKT60104
19	BUS60204	Business Ethics and Values	4	-
20	MGT60504	Strategic Management	4	MGT60104
21	BUS60404	International Business Issues and Policies	4	BUS60104

Module Name	Module Synopsis
Accounting for Non-Specialists	This module introduces students to the various concepts, techniques and processes that collectively make up the foundations of financial accounting. It aims to develop students' understanding of the accounting process, recording of accounting data, preparing and analysing financial statements and using accounting-related information for effective decision making and also demonstration of accountability. In summary, this module is designed to suit the needs of non-accounting and non-finance students. The module is supported by a combination of face-to-face lectures, tutorials, and online approaches. The online mode of delivery is supported by TIMeS. There are formative feedback sessions to recap what have been learned to ensure alignment with the module learning outcomes. The assessment approach of this module consists of three parts, i.e. mid-term test, group assignment and final examination. The mid-term test is designed to test students' understanding on users, needs and sources of financial statements. The group assignment is designed to develop the ability of students to work in a group of 3 to 4 students. Specifically, the group assignment requires students to apply various concepts and

	techniques related to financial accounting. The final examination is aiming to assess students' ability to analyse and interpret financial statements. In the exam, students are expected to perform calculations, apply accounting concepts, analyse and interpret financial statements.
Introduction to Management	This module is designed to provide the candidate with the basic concepts and principles of management in organisations. It focuses on the context of managerial activity and covers the four major functions of management i.e. planning, organising, leading and controlling and places them in a historical, political and economic context.
Business Communication	Business Communication equips students with the necessary written and spoken skills for effective business communication. Students are exposed to various business correspondences and taught practical strategies to write convincing messages. Students are also taught to strategize, and to use appropriate and ethical approaches in writing not only routine messages, but also persuasive and negative messages. Listening and speaking skills are also focused on to ensure effective interpersonal communication This module also emphasises the need for business communication to be seen in a global context where various considerations such as technological advances and ethical considerations play a vital role in ensuring that all business messages achieve their aims in a positive manner.
Microeconomics	In a continuously ever changing globalised business environment, businesses need to make quick, well informed and correct decisions in order to survive. This module is concerned about the principles of microeconomics as they apply to the business environment. The module outlines the various microeconomic tools of analysis and analytical frameworks that are essential for business students to learn and understand to enable them to comprehend the economic environment of business in a structured way. It complements other Year One business modules and provides a basis for Year Two and Three modules in both business and economics.
Introduction to Finance	This module introduces main concepts and methods associated with financial decision-making for individuals and enterprises: the concept of cash flow valuation, evaluation of financial performance, valuation of securities, risk and returns, capital budgeting, and an overview of international finance.
Principles of Marketing	This module introduces students to the key marketing concepts and strategies employed by marketers in facing the challenges in a dynamic business environment. It develops an understanding of the overall process of planning, implementation and control in the contemporary business environment. This module provides students with the needed conceptual skills to identify, analyse and solve marketing problems. This module also provides a foundation for those who intend to further study in the marketing field or other business related modules.
Macroeconomics	In an increasingly globalised world, countries and their governments need to be able to make quick, well informed and correct decisions in order to achieve their macroeconomic objectives. This module looks into the workings of a domestic economy and the policies that governments may implement to improve the business environment. The module outlines the various macroeconomic tools of analysis and analytical frameworks that are essential for business students to learn and understand to enable them to comprehend the national and global economy in a structured way. It complements other Year One business

	modules and provides a basis for Year Two and Three modules in both business and economics.
Business Law	This module provides the foundation for all law modules in the Bachelor of Business. It provides students with an overview of the Malaysian legal system and a basic coverage of the underlying legal principles governing business. The substantive laws covered in this module includes the Law of Contract, the Law of Torts, Sales of goods, the Law of agency, insurance, employment law and business organisations. Students will have the opportunity to develop skills in critically analysing legal problems and issues affecting business and applying the legal principles in solving these issues.
Consumer Behavior	The field of consumer behaviour attempts to explain and predict the ways in which consumers think and behave in given situations. Consumer Behaviour investigates the manner that people interact with products and their marketing environment. This can include the purchase of products, the consumption of services, or the disposal of goods. Understanding consumers enables marketers to more effectively meet the needs of buyers in the market, and be more successful in the market. This module focuses on studying the process of consumer decision making and the resulting implications for marketing strategy. Concepts and theories covered in this module are essential for consumer analysis and the development of effective marketing strategies. To understand consumer behaviour, it is important to understand some concepts and theories borrowed from fields such as psychology, sociology, economics, etc. In addition during this module students will explore many social, cultural and marketing factors that influence the selection and usage of products and services.
Introduction to International Business	The module is designed to provide students with an insight into International Business. It covers a practical framework for understanding the key issues, current relevant principles and concepts to be considered in doing business abroad. The goal of the module is to help students to understand the basic principles of international business and their impact on the world's economy. International Business introduces students to various issues and challenges associated with the formulation and implementation of strategies in business organisations whose operations stretch across national borders. Throughout the module, students will be systematically introduced to the complexities and challenges of leading and managing a "global" company. Further, the module will provide students with an opportunity to integrate business decisions with the ethical and social responsibility considerations inherent to playing on a global field.
Organisational Behavior	This module is designed to provide the candidate with an introduction to psychological and behavioural approaches to the study of work and organisations. The module introduces some of the basic analytical tools and concepts from the fields of organisational behaviour and work psychology that encourage an understanding of the behaviour of individuals and groups in the workplace.
Quantitative Methods for Business	This module is designed to provide students with an appreciation of the application of analytical tools to business decision contexts. It also develops students' abilities to access and critically interpret statistics and business information. The module places strong emphasis on developing a clear theoretical understanding of various analytical tools. This is particularly true in business where learning to deal with randomness, variation and uncertainty is a vital skill for anyone intending to apply their knowledge in any employment. Students will

	also gain an introduction to many of the quantitative techniques which will be used throughout their further studies in their chosen discipline.
Export Practices and Management	There are new opportunities & challenges arising in global marketing and exporting. In order for any organisation to take advantage of the opportunities present as well as to rise above the challenges faced, it has to be adaptable to changes. Opportunities are expanding as international trade continues to grow rapidly. The role of ecommerce is to enable even the smallest business to find potential customers and means of distribution across the globe. The challenges of it would be increased competition, disruptions of trade flows (military), natural disasters etc. This module focuses on the marketing decisions as well as the management processes involved in developing export and other types of international marketing operations. Among areas that will be touched upon would include the most important emerging markets (China & India) in the modern business world, the increased importance of cultural differences in all aspects of exporting, the management of the Supply Chain and logistics.
Integrated Marketing Communications	This course deals with advertising management from theoretical and practical perspectives. It will expose students to various managerial and strategic decisions relating to advertising management. Topics covered will be: the structure of the advertising industry, management of the relationship between agency and client, creative advertising strategy, media developments, budgeting, international advertising considerations, advertising research techniques and ethical issues in advertising and promotion.
Research Methods	This module examines research designs commonly used in business decision making. Topics include research design, implementation and finally interpretation of research as these are related to problems in an organisational setting. This module will also cover issues on access and research ethics. This module provides a guide to the research process and the needed knowledge and skills to undertake research as well as highlights some common research pitfalls. At the end of this module, students will learn a range of research approaches, strategies and methods in handling their research projects. Skill development in statistical applications software is also one of the objectives of this module. Students are required to submit a research proposal as part of the module requirements.
International Finance	This module introduces main concepts and methods associated with international financial decision-making for multinational business: the concept of multinational financial management, FOREX, risk analysis and tools, financing foreign trade, international portfolio investment and corporate strategy.
Transnational Management	This module focuses on management's challenge associated with developing strategies, designing organisations and managing operations of companies whose activities stretch across national boundaries. Operating in an international arena will provide various opportunities for the company. This is because having worldwide operations not only gives a company access to new markets and specialized resources but it also opens up new sources of information as well as knowledge and broadens the options of strategic moves the company might make in competing with its domestic and international rivals. Like any other opportunities provided by cross-border management, companies will still have to face the challenges of managing strategy, organisation and operations that are innately complex diverse and uncertain. In this module a conceptual baseline

	would provide for a more detailed discussion of the various issues faced in the cases presented. Some typical attitudes and mentalities would normally shape the actions of managers in MNCs (Multinational companies) and suggest how these attitudes and mentalities evolve as their off-shore operations progress from the state of initial investments to a fully integrated worldwide network of affiliates.
Services Marketing	This module introduces several unique characteristics of services that require a distinctive approach to marketing strategy – both in its development and execution. Students will be exposed to organisational effort in improving service quality, increasing and maintaining customer satisfaction levels, generating customer loyalty, managing the service demand and creating a healthy service culture within the firm. The 7 Ps of the 'Services Marketing Mix' (the traditional 4 Ps plus people, processes, and physical evidence) will be elaborated in examining successful internal marketing in addition to the more traditional customer-focused external marketing.
Business Ethics and Values	This module provides an understanding of the ethical issues and dilemmas affecting managers in organisations and developing an appreciation for, professional responsibility and integrity. It aims to raise awareness of the practical issues facing people in business, introduce a framework or guidelines for analysis and decision making, and enhance students' ability in reasoning towards resolving the dilemmas based on ethical principles. The discussions of ethical issues are used as an avenue for further improvement in analytical and communication skills.
Strategic Management	This module is designed to provide the candidate with a comprehensive understanding on how organisations are managed strategically with the emphasis of putting theory into practice. The major areas in strategic management that includes strategy formulation, implementation and evaluation are taught together with appropriate case analysis.
International Business Issues and Policies	"International Business Issues and Policies" is the capstone module for the International Business major. In this module, we will examine both the principles associated with the formation and implementation of business strategy, as well as the latest research about business strategy, which challenges traditional ways of thinking. Those ideas will be applied via case studies and simulations. Globalisation means that almost every company is affected by competition from foreign enterprises. Many firms are seeking opportunities to enter new foreign markets and expand the ones that they have already penetrated. Managing in a globalised environment requires knowledge of the regulatory and policy systems of international trade. This module provides this essential knowledge explaining both the theoretical and practical dimensions. The broad aim is to provide insight into current issues that play a dramatic role in the business landscape and to understand the current challenges facing businesses as constituents in the broader societal context. In addition, students will be familiar with the strategic and management issues currently faced by various organisations through a consideration of the structure and challenges of the industry at the global, national and provincial levels.

SCHOOL OF ACCOUNTING & FINANCE

BACHELOR OF FINANCE AND ECONOMICS (HONOURS)

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	ACC60104	Introduction to Accounting	4	-
2	ECN60104	Microeconomics	4	-
3	FIN60104	Introduction to Finance	4	-
4	ECN60204	Macroeconomics	4	ECN60104
5	FIN60204	Corporate Finance	4	FIN60104
6	STA60104	Quantitative Methods for Business	4	-
7	FIN62204	Personal Financial Planning and Wealth Management	4	-
8	MGT60504	Strategic Management	4	MGT60104
9	ACC61504	Ethics And Corporate Governance	4	-
10	FIN61104	International Finance	4	-
11	BNK6050	Islamic Banking and Finance	4	-
12	FIN62504	Fintech And Innovation	4	-
13	FIN60304	Financial Markets	4	-
14	FIN61804	Portfolio Management	4	-

Module Name	Module Synopsis
Introduction to Accounting	This module introduces students to the various concepts, techniques and processes that collectively make up the foundations of financial accounting. It aims to develop students' understanding of the accounting process, recording of accounting data, preparing and analysing financial statements, and using accounting-related information for effective decision-making and also demonstration of accountability.
Microeconomics	In a continuously ever-changing globalised business environment, businesses need to make quick, well informed, and correct decisions in order to survive. This module is concerned about the principles of microeconomics as they apply to the business environment. The module outlines the various microeconomic tools of analysis and analytical frameworks that are essential for business students to learn and understand to enable them to comprehend the economic environment of business in a structured way. It complements other Year One business modules and provides a basis for Year Two and Three modules in both business and economics.
Introduction to Finance	This module introduces main concepts and methods associated with financial decision-making for individuals and enterprises: the concept of cash flow valuation, evaluation of financial performance, valuation of securities, risk and returns, capital budgeting, and an overview of international finance.
Macroeconomics	In an increasingly globalised world, countries and their governments need to be able to make quick, well informed, and correct decisions to achieve their macroeconomic objectives. This module focuses on the workings of a domestic economy and the policies that governments may implement to improve the business environment. The module outlines the various macroeconomic tools of analysis and analytical frameworks that are essential for business students to learn and understand to enable them to comprehend the national and global economy in a structured way. It complements other Year One business

	modules and provides a basis for Year Two and Three modules in both business and economics.
Corporate Finance	This module examines the various analytical techniques used in capital budgeting and capital structure decisions. Specifically, capital structure, estimation of cost of capital and dividend decisions are examined empirically and theoretically. For example, in making financing or capital structure decisions, the impact on a firm's value due to the actions taken by management is examined using various financial tools and analyses. After completing this module, students would be able to comprehend the concepts, theories, and techniques related to corporate finance that would help them in providing solutions to various corporate finance-related problems.
Quantitative Methods for Business	This module is designed to provide students with an appreciation of the application of analytical tools to business decision contexts. It also develops students' abilities to access and critically interpret statistics and business information. The module places strong emphasis on developing a clear theoretical understanding of various analytical tools. This is particularly true in business where learning to deal with randomness, variation and uncertainty is a vital skill for anyone intending to apply their knowledge in any employment. Students will also gain an introduction to many of the quantitative techniques which will be used throughout their further studies in their chosen discipline.
Personal Financial Planning and Wealth Management	This module involves the study of financial issues from a personal wealth management perspective in Malaysia. The module will discuss the overview and regulatory framework of the financial planning industry, process of construction of a financial plan including setting of personal goals, asset allocation, investment in financial securities, tax planning, insurance planning, retirement and estate planning. The focus will be from a wealth planning and personal risk management perspective applying products available in Malaysia. At the preliminary session, students are exposed to the wealth planning and personal risk management perspective by applying products available in Malaysia. Following this, students are then exposed to technical aspects of regulatory framework of the financial planning industry, process of construction of a financial plan including setting of personal goals, asset allocation, investment in financial securities, tax planning, insurance planning, retirement, and estate planning.
Strategic Management	This module is designed to provide the candidate with a comprehensive understanding on how organisations are managed strategically with the emphasis of putting theory into practice. The major areas in strategic management that includes strategy formulation, implementation and evaluation are taught together with appropriate case analysis.
Ethics and Corporate Governance	This module is an advanced level module focusing on business and accounting ethics, and corporate governance. It is designed to further enhance students' understanding of the concepts and issues in theory and practices of ethics and corporate governance. This involves the study of theoretical and practical issues involved in the development, implementation and changes in ethics and corporate governance theories and regulatory framework.
International Finance	This module introduces main concepts and methods associated with international financial decision-making for multinational business - the concept of multinational financial management, FOREX, risk analysis and tools, financing foreign trade, international portfolio investment and corporate strategy.

Islamic Banking and Finance	The module emphasizes Islamic banking and financial markets have made remarkable progress during the last two decades and this burgeoning growth has increased the appetite for financiers and bankers to understand more of this emerging market. This module is concerned with the helpful insights to students particularly on Islamic banks and financial institutions. The module outline and incorporate valuable examples and practical discussions that will offer better understanding of Malaysia as an emerging Islamic capital market. This module is an extension of finance and banking knowledge as well as crucial for comparative study in finance and banking practices. The students will be exposed to Islamic contracts such as exchange-based contracts are contracts, charity-based contracts, waiving contracts and partnership contracts.
Portfolio Management	The module emphasizes in various portfolio theories and help students to understand the widely used techniques to the creation of optimal portfolios to achieve a consistent portfolio management process and rational investment decisions. This module will enable students to comprehend the varied investment alternatives that are available in the present financial environment and techniques to manage money effectively by deriving the maximum benefit of their investments.
Fintech & Innovation	The module emphasizes the importance of technology in financial services. Students are introduced to an exploration of technology and the concept of Financial Innovation. The learning and teaching approach for the module will be technology-based example, with students engaging with practical tasks during the tutorial sessions and presenting their ideas and thoughts within the group. There is regular review, feedback and critique sessions leading to the final design review to assess progress and alignment to the learning outcomes in relation to the brief. The module is supported by a combination of online lectures and materials. Examples and case-studies will also be used to engage students with the potential solutions FinTech can offer to support the SME's business activities. Experts from FinTech industry will also be invited to share and discuss their experience.
Financial Markets	Upon completion of this module, students should be able to explain the structure and operation of financial institutions and markets, evaluate short-, medium- and long-term financial instruments, apply problem solving techniques dealing with financial markets, and demonstrate the ability to communicate effectively towards financial markets issues. The module will cover a broad range of topics that will help students demonstrate an understanding on the financial system, its operation and component parts; yield curve analysis, the term structure of interest rates, and exchange rate interaction; sources and types of business finance, short, medium and long term, domestic and overseas, and associate pricing formulae; the structure and operation of Malaysian financial institutions and markets; the major types of risk and the derivative products available to manage financial risk; the structure, functions and role of prudential supervision in the financial markets.

FACULTY OF HEALTH & MEDICAL SCIENCES

SCHOOL OF BIOSCIENCES

BACHELOR OF BIOMEDICAL SCIENCE (HONOURS)

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	BIM60304	Immunology	4	BIO61904
2	BIM60404	Human Pathology	4	BIO61904 BIM60204
3	BIM60604	Epidemiology, Public Health and Bioethics, Biostatistics	4	-
4	BIO60204	Principles of Biochemistry	4	-
5	BIO61604	Applications of Bioinformatics	4	BIO60204 BIO61204
6	BIO61904	Basic Anatomy with Histology and Heamatology	4	-
7	BIO62004	Instrumentation in Medical Diagnostic, Laboratory Science and Blood Banking	4	BIO61904
8	BIO62404	Medical Parasitology	4	MIC60104
9	BIO62504	Clinical Genetics	4	BIO60204
10	CHM60304	Clinical Chemistry	4	BIO60204
11	MIC60104	Introduction to Microbiology	4	-
12	MIC60804	Medical Microbiology	4	MIC60104
13	NUT60404	Nutritional Biochemistry	4	BIO60204
14	NUT60704	Applied Nutrition	4	-
15	NUT60804	Community Nutrition	4	-
16	PHA60504	Advanced Pharmacology	4	PHC62004
17	PHC62004	Basic Pharmacology and Toxicology with Health Informatics	4	-
18	RES60204	Research and Laboratory Management	4	-

Module Name	Module Synopsis
Immunology	Immunology is essential science for knowing how human body distinguishes components of “self” and “non-self”. Immune system works to eliminate invading microorganisms, tumor cells, foreign substances and transplants. This module introduces components of immune system and how individual component integrates for effector function. Students will learn the details of molecular and cellular mechanisms of immune responses. Clinical and applied immunology emphasize on diseases cause by disorders of immune system, immune responses to transplants and tumor cells, as well as the use of components of immune system for clinical laboratory diagnostics. Students will also be trained to perform various immunoassays, mainly in conducting diagnostic tests, during practical sessions. These theoretical and practical skills will be necessary to prepare them for employment in the field of microbiology, immunology, diagnostics and scientific research. The teaching and learning approaches for the module include self-directed learning and problem-based learning. Students will be actively engaged in the learning process as they are introduced to real-world problems and will be encouraged to find solutions to the problems. The delivery mode of the module will be lecture- and tutorial-based, in

	addition to hands-on practical sessions and workshop. The module will be supported by a combination of online lessons and journal articles. Blended learning will be included and students will be guided to learn independently at their own pace.
Human Pathology	This module aims to create in students understanding of the "diseased state" of the human body and the various causes, predisposing factors, trigger mechanisms and consequences in the pathogenesis of diseases. These "diseased states" will include abnormalities in cells, tissues, organs and systems. This module attempts to integrate the knowledge of the various disciplines of pathology and laboratory medicine in assisting in the diagnosis of diseases. It provides knowledge and understanding of the processes of disease mechanism in the human body and relevant changes which encompasses the aetiology of the disease. It applies physiological concepts and pathways involved in important techniques used for the investigation of particular organs or systems, many of which complement the use of biochemical test. The teaching and learning approach for this module will be guided learning, problem-based learning and collaborative learning, with students actively engaging in discussions to solve a problem utilising the pathological knowledge acquired, presenting their ideas and thoughts within the group. This module will be supported via lectures, tutorials and practical / demonstration sessions using histology slides and basic laboratory tests. This module will also teach students to use laboratory results in diagnosis and prognosis of a disease. In addition, there will be problem-based learning to cultivate critical thinking and reasoning, and time for self-directed learning to encourage independent sourcing for additional information.
Epidemiology, Public Health and Bioethics, Biostatistics	This module teaches the epidemiology of communicable and non-communicable diseases; methods and bioethics used for epidemiological studies and surveillance; the social and political influences on patterns of health and healthcare; effective public health practice and health promotion, biostatistical analysis and interpretation of study findings. The teaching and learning approaches for the module include instructional learning, self-directed learning and problem-based learning. Students will be actively engaged in the learning process as they are introduced to real-world problems and will be encouraged to find solutions to the problems. The delivery mode of the module will be lecture- and tutorial-based, in addition to hands-on practical sessions and workshop. The module will be supported by a combination of online lessons and journal articles. Blended learning will be included and students will be guided to learn independently at their own pace.
Principles of Biochemistry	Principles of biochemistry primarily focused in the biochemistry of humans. It is known that the basic principles of biochemistry are common to all living organisms. This module provides an introduction to biomolecules in living systems. Students are introduced to the basics of bioenergetics before progressing to studying energy metabolism pathways and their regulation. The individual pathways will then be integrated together to give students a holistic view of energy metabolism. This module also introduces the basic theoretical knowledge of molecular genetics. This module will be delivered using the pedagogies of 'Guided Learning' and 'Self-directed Learning' via lecture and tutorial-based approach and is supported by a combination of face-to-face lectures, online lectures and tutorials, with students engaging with practical

	tasks during the laboratory sessions. The module is supported by a combination of online lectures and supplementary reading materials.
Applications of Bioinformatics	The module introduces the underpinning knowledge of Applied Bioinformatics and its main applications in Biotechnology and Biomedical Sciences. The fields of "omics" which include genomics, transcriptomics, proteomics, and metabolomics all rely on bioinformatics for computing tools to analyse and "make sense" of the tremendous amount of biological data. Beginning with an overall introduction to the science of Bioinformatics, followed by various analyses methods of DNA sequences; genome sequencing and analysis; genome-wide analysis of RNA sequences transmission genetics; protein analysis and proteomics; and finishing with the analysis of biological networks. Two clear module objectives are outlined which include (i) attaining an understanding of applied concepts of Bioinformatics, establishing a strong foundation in the principles of biological data analyses and (ii) developing keen problem solving skills and apply knowledge gained in other related fields in Biotechnology and Biomedical Sciences through mastering the applications of Bioinformatics in relevant fields such as genomics, transcriptomics, proteomics and biological networks through exposure to practicals and assignments. This module is supported by a combination lectures, online tutorials, practicals, and self-directed learning. Module delivery strategy include focusses on discovery learning, generative learning and reciprocal teaching.
Basic Anatomy with Histology and Hematology	Basic Anatomy with Histology & Hematology module focuses on the fundamental principles of human major body systems (musculoskeletal system, central nervous system, endocrine system, cardiovascular system, respiratory system, gastrointestinal system, urinary system and reproductive system) in human body. In this module, both macroscopic (gross) anatomy and microscopic anatomy (histology) of the major body systems will be addressed in classroom and laboratory. Some disease situations will also be discussed in relation to a change in the organization of the organs systems. Some memorizing (especially new terms) is inevitable, but through this module, students will learn to appreciate the wonders of the human body's amazing structures and functions. The learning and teaching approach for the module is supported by a combination of face-to-face lectures, online lectures, tutorials, workshop and with students engaging with practical tasks during the laboratory sessions. The module is supported by a combination of online lectures and supplementary reading materials.
Instrumentation in Medical Diagnostic, Laboratory Science and Blood Banking	This module introduces the student to the theoretical basis and operation procedures of various diagnostic and analytical instruments used in research and medical settings. Students will also be taught an overview of concepts and techniques in basic molecular biology techniques including primer design, aseptic techniques in mammalian cell culture, mammalian RNA and cDNA analysis and DNA sequence analysis. In addition, students will learn the general concept of 3D printing and CRISPR technology. The underlying theories and laboratory techniques concerning blood banking will also be covered. Knowledge and skills gained in this module will prepare students to pursue a career in biomedical research. The teaching and learning approach for the module will be real-life problem-based learning, with students engaging with practical tasks during the practical sessions and demonstrate their understanding, thoughts and reflection via written reports and presentation. The

	module is supported by a combination of lectures (face-to-face and online learning) and tutorials.
Medical Parasitology	This module introduces basic concepts in parasitology, including the discussion on the different types of parasites, vectors and the host-parasite relationships that result in diseases. Students will learn about the biology and life cycle of parasites, mechanism of pathogenesis, treatment and global control programs aimed at eliminating parasitic diseases. Students will also learn about the basic tools used in parasitology research and the different ways to differentiate parasites under the microscope, in addition to other methods used in the diagnosis of parasitic diseases. The teaching and learning approaches for the module include self-directed learning and problem-based learning. Students will be actively engaged in the learning process as they are introduced to real-world problems and will be encouraged to find solutions to the problems. The delivery mode of the module will be lecture- and tutorial-based, in addition to hands-on practical sessions. The module will be supported by a combination of online lessons and journal articles. Blended learning will be included and students will be guided to learn independently at their own pace.
Clinical Genetics	Clinical Genetics will provide an overview of human genetics and epigenetics and their relationships to complex phenotypes, inheritance, evolution and health and diseases. Students will explore some common human genetic diseases including hereditary cancers and inborn errors of metabolism. Insights from the recent advances in genomic research (e.g. human genome reference projects) and the application of human genetics in genetic screening, genetic counseling and biomedical ethics will be addressed. The module is supported by online lectures, collaborative problem-based learning and laboratory practical whereby students hone their skills in human molecular genetics. The learning and teaching approach for the module will be lecture and tutorial-based, with students performing guided experiments and analyzing data obtained during the practical sessions. The module is supported by a combination of online lectures and supplementary reading materials.
Clinical Chemistry	This module focuses on the role and importance of biochemical tests in the field of laboratory medicine in aid of diagnosis, prognosis, monitoring and screening of disorders associated with carbohydrate, lipid and protein metabolism, as well as renal disorders, acid-base balance, the endocrine system and the role of vitamins and trace elements in health and disease. This is followed by reporting, interpretation of test results and identifying sources of errors and discrepancies in clinical chemistry test results. A wide range of biochemical tests such as general/routine biochemistry, special biochemistry, toxicology, endocrinology, urine and body fluids analysis will be covered in this module. The teaching and learning approach for this module will be guided learning, problem-based learning and collaborative learning, with students actively engaging within group discussions to solve problems utilising the clinical biochemistry knowledge acquired. This module will be supported via lectures, tutorials, practical / demonstration sessions and basic laboratory biochemistry tests, including the proper use and care of analytical instruments as part of the interactive learning experience. This module will also teach students on the interpretation of biochemistry laboratory data to correlate with the clinical signs and symptoms of the patient. In addition, there will be problem-based

	learning to cultivate critical thinking and reasoning, and time for self-directed learning to encourage independent sourcing for additional information.
Introduction to Microbiology	This module is designed to provide an introduction to basic microbiology, which includes the diversity of prokaryote and eukaryote microorganisms, the evolutionary relationship of microorganisms, the structural and physiological characteristics of microorganisms, the relationship between microorganisms with the environment and human, and the roles of microorganisms in food, pharmaceutical and environmental management industries. General microbiology laboratory skills are included. These fundamental knowledge are the important as introductory topics required for more specific area of microbiology such as bacteriology, virology, mycology, microbial physiology and applied microbiology. The learning and teaching approach for the module will be lecture, practical and tutorial-based. In practical classes, students will be going through guided experiments and analyzing data obtained during the practical sessions. The module is supported by a combination of online lectures, videos and supplementary reading materials.
Medical Microbiology	This module involves the study of microorganisms that can cause disease in the human host. It introduces basic concepts in medical microbiology, including the epidemiology, biology, pathogenesis, signs/symptoms, transmission and treatment of infectious diseases due to microorganisms. In addition, the ways by which the host immune system interacts with microorganisms and the effect on clinical outcomes will be discussed. Students will also learn basic laboratory techniques that are used to identify microorganisms and diagnose infectious diseases. The teaching and learning approaches for the module include self-directed learning and problem-based learning. Students will be actively engaged in the learning process as they are introduced to real-world problems and will be encouraged to find solutions to the problems. The delivery mode of the module will be lecture- and tutorial-based, in addition to hands-on practical sessions. The module will be supported by a combination of online lessons and journal articles. Blended learning will be included and students will be guided to learn independently at their own pace.
Nutritional Biochemistry	This module describes the metabolism of macro-nutrients and key micro-nutrients and how the theory contributes to the production of energy and supply of intermediates for biosynthesis. The regulation of the various nutrients are emphasized to link the role of these nutrients with health and metabolic diseases. This module will be delivered using the pedagogies of 'Guided Learning' and 'Self-directed Learning' via lecture and tutorial-based approach. The module is supported by a combination of online lectures and videos, including supplementary reading materials. Various activities available on TIMES such as games and feedback forms will also be used.
Applied Nutrition	This module is built on the knowledge gained by the students in the previous nutrition modules and covers applied aspects of nutrition. It includes learning about nutritional assessments and tools to design a healthy diet and nutritious meals, energy balance and weight control, food composition and nutrient databases, food choices and eating habits and their impact on nutritional status, dietary management of

	lifestyle diseases, applied food processing technologies to provide nutritious functional foods. This module will be delivered using the pedagogies of 'Authentic Learning and Teaching' and 'Self-directed Learning' via lecture and tutorial-based approach. In addition, students will perform guided experiments and analyzing data obtained during the practical sessions. The module is supported by a combination of online lectures and supplementary reading materials. Various activities available on TIMES such as games, SCORM and feedback forms will also be used to make the learning and teaching more interesting.
Community Nutrition	This module is organized into four sections: nutrition in the diverse communities of Malaysia; nutrition programs for the communities; understanding nutrition-related primary prevention of disease; and an exploration of disease management and care of disease through nutrition. This module will be delivered using the pedagogies of 'Authentic Learning and Teaching' and 'Self-directed Learning' via lecture and tutorial-based approach. The module is supported by a combination of online lectures and supplementary reading materials. In order to make the learning and teaching more interesting, global and nationwide survey data including recent research articles related to community nutrition will be used for students to answer questions and provide suggestions via online platforms such as Padlet.
Advanced Pharmacology	Advanced Pharmacology builds on the fundamental of drug action at both cellular and molecular levels. This module enables students to relate pharmacology of drugs to physiological systems, such as nervous, cardiovascular, respiratory, digestive, renal and endocrine systems. Students will learn the pharmacokinetics and pharmacodynamics of drugs in various systems, at the same time obtain skills and knowledge for drug design that can be applied toward careers in health and medical sciences. The teaching and learning approach for this module will be learner-centric, problem-based and collaborative learning. Students will engage in group discussions to solve a problem using pharmacological concept that they learnt. This module will also expose students to laboratory techniques used in major Pharma industries including HPLC and fluorescent-based assays. The module is supported by face to face and online lectures, case study-based tutorials and laboratory practicals.
Basic Pharmacology and Toxicology with Health Informatics	The module emphasizes the basic principles of pharmacology, toxicology and health informatics. Topics covered include drug-receptor binding and activity, induction of cell signalling upon binding, drug absorption, distribution and metabolism. The module also focuses on the application of these concepts to the understanding and prevention of mortality and morbidity resulting from exposure to toxic substances. Students will understand the interaction between information technology and healthcare delivery and management issues in the current healthcare arena. The learning and teaching approach for the module will be lecture and tutorial-based, with students performing guided experiments during the laboratory sessions. Laboratory activities will be geared towards teaching students to generate, analyze and interpret pharmacological and toxicological data. The module is supported by a combination of online lectures and supplementary reading materials.

Research and Laboratory Management	This module focuses on the principles of laboratory and research management, as well as commercialization. Topics for laboratory management include lab resources management, operation, accreditation, risk assessment and project management. Research management covers the initiation of research problem, intensive literature search, research planning, data analysis, reporting of scientific findings, current trends in life science research and critical understanding of copyright and regulations in research profession. The fundamental concepts of commercialization, involving developing prototype, patent and business plan will also be included. Problem-based learning approach will be emphasized as the teaching and learning approach in this module. The module will be delivered by lecture and tutorial-based, including illustrative cases presenting management problems by focusing on thought-provoking questions to enhance critical thinking skills as a reinforcement of theoretical content, and also to simulate real-life situation. The module is supported by a combination of online lecture, supplementary reading materials and classroom activities with group discussion.

BACHELOR OF FOOD SCIENCE (HONOURS)

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	BIO60204	Principles of Biochemistry		
2	BIO60904	Cell Biology		
3	CHM61104	Fundamental of Chemistry		
4	FSC60104	Food Chemistry		PHC62304
5	FSC60304	Food Microbiology		BIO1104, FBC60103 MIC60104
6	FSC60404	Food Preservation		FSC60304 FSC60804
7	FSC60504	Food Processing		FSC60804 FSC61104 FSC60104
8	FSC60604	Sensory Evaluation		
9	FSC60904	Food Physics		PHC62304 CHM61104
10	FSC61304	Food Safety and Quality Management		FSC60304
11	MIC60104	Introduction to Microbiology		
12	NUT60104	Introduction to Food Science and Nutrition		
13	NUT60504	Food and Nutrients Evaluation		FSC61104 FSC60104
14	NUT60604	Techniques in Food / Nutrition Research		FSC60104
15	PRJ63404	Food Product Development		FSC60304 FSC60104 FSC60504 NUT60504 FSC60404
16	STA60204	Introduction to Biostatistics		

Module Name	Module Synopsis
Principles of Biochemistry	Principles of biochemistry primarily focused in the biochemistry of humans. It is known that the basic principles of biochemistry are common to all living organisms. This module provides an introduction to biomolecules in living systems. Students are introduced to the basics of bioenergetics before progressing to studying energy metabolism pathways and their regulation. The individual pathways will then be integrated together to give students a holistic view of energy metabolism. This module also introduces the basic theoretical knowledge of molecular genetics. This module will be delivered using the pedagogies of 'Guided Learning' and 'Self-directed Learning' via lecture and tutorial-based approach and is supported by a combination of face-to-face lectures, online lectures and tutorials, with students engaging with practical tasks during the laboratory sessions. The module is supported by a combination of online lectures and supplementary reading materials.
Cell Biology	This module introduces the student with a comprehensive understanding of cell structures and functions, including how cells divide, genetic information systems, generate energy, coordinate complex processes and communicate in a living system. The core concepts of molecular cell biology and techniques which are essential

	to build up the strong foundation in any of the core disciplines covered in the programme. The teaching and learning approach for the module will be real-life problem-based learning, with students engaging with practical tasks during the practical sessions and demonstrate their understanding, thoughts and reflection via written reports and presentation. The module is supported by a combination of lectures (face-to-face and online learning) and tutorials.
Fundamental of Chemistry	Chemistry is an indispensable knowledge of sciences. This module emphasizes three main parts namely physical chemistry, inorganic and organic chemistry. The module content will focus on the fundamental concepts in bonding and quantitative aspects of chemistry, periodic trends, coordination chemistry and organic functional groups. The module will be using authentic learning and collaborative learning as teaching and learning pedagogy. Module content will be delivered in lecture-style settings and concepts will be extended in detailed problem-solving exercises. Tutorials will be a mixture mode of face to face and online discussion between instructor with students and among peers to strengthen the knowledge and solve chemistry related questions.
Food Chemistry	This module introduces the chemical structures of major bio-molecules such as water, carbohydrates, fats, proteins, and other minor components including vitamins, minerals, colours, flavours and additives in food systems. The reactions of these components that govern the functional properties of foods and affect the shelf life, nutritional content and quality attributes of food are also covered. The teaching and learning activities are designed based on blended learning approach, which cover face-to-face and online lectures and tutorials.
Food Microbiology	This module provides the overview of the principles of food microbiology in regards to the roles of microorganisms in food that may involve in food spoilage and food-borne diseases; identifying the potential microbial hazard; control methods of microbial hazard associated with food; fermentation processes involving microorganism in food production; laboratory skills in microbial quality control inclusive of aseptic food sampling, microbial testing and analysis; cleaning and sanitization of food, food processing equipment's and food production rooms; the risk assessment and managing in food industry. Teaching and learning will be carried out based on authentic and problem based learning approach through a mixture of F2F and online lectures, tutorial and practicum. Learning situations will include some of the characteristics of real-life problem that can be found in everyday applications of knowledge. These real world problems encouraged students to dive into it, construct their own understanding of the situation, and eventually find a solution.
Food Preservation	This module introduces various preservation technologies used in the preservation of fresh, minimally processed, and processed foods in terms of their principles, mode of action, materials and equipment employed. In addition to the study of preserving foods through the application of heat, chilling and freezing, modification of water activity, use of chemicals, and fermentation, non-thermal physical techniques (high pressure processing, irradiation, and ultrasound) and the role of packaging in relation to food preservation are also covered. The teaching and learning activities are designed based on blended learning approach, which cover face-to-face and online lectures and tutorials. The teaching and learning materials for face-to-face lectures

	are accessible through TIMeS. Online lectures and tutorials are conducted using e-learning tools such as ReWIND, Labster, and online forum (TIMeS). This module provides hands on laboratory experience in evaluation of effects of different food preservation techniques to the quality, nutritional value and shelf life of foods. Besides, it provides student-centered learning experience through group projects in reviewing and criticizing the latest preservatives methods used in food industry and research and solving food science related global issue. Assessments include written examinations, practical reports, oral presentation, and assignment.
Food Processing	This module introduces major unit operations involved in food processing. Various food processes, safe food handling systems and practices are discussed. Process control, cleaning and sanitation of food processing plant, pest control as well as water and waste management are included. Good manufacturing practices are highlighted.
Sensory Evaluation	This module is to develop an understanding on the basic scientific principles underlying various sensory analytical techniques used in assessing consumer behaviour in food consumption. Techniques to evaluate the reliability of data collected through the sensory panel and to report data in a meaningful way with sensible significant numbers are also emphasized. The teaching and learning approach for the module will be lecture, tutorial, and hands-on practical sessions. The module will be supported by a combination of online lessons and discussion. Blended learning will be included and students will be guided to learn in a group.
Food Physics	This is an introductory but wide-ranging module that deals with (1) physical principles that are relevant to the processing and preservation of foods and (2) the physical properties of food materials and their measurement. It draws attention to the importance of these properties to food quality, the changes that can occur during processing and storage, and manipulation of such properties which is integral to good product design. This module includes well-designed case studies and problem solving exercises to facilitate integration of theory and application.
Food Safety and Quality Management	This course embraces the implications of food safety and quality management against the framework of food authenticity and sustainability within an increasingly globalized food industry. Student will gain an in-depth understanding of regional, national, and international standards in regulatory processes, and the role of public institutions and policy makers in delivering safe, quality foods to consumers. In conclusion, student will acquire a knowledge of the design and management of safety and quality management systems based upon risk analysis, e.g. Hazard Analysis and Critical Control Point (HACCP), ISO 9001:2015 and private standards, all designed to meet the requirements of national and international legislation. Besides the inter-classroom teaching, students will be engaging in their own learning through knowledge from teaching materials such as, lectures notes, videos, and self -directed learning.
Introduction to Microbiology	This module is designed to provide an introduction to basic microbiology, which includes the diversity of prokaryote and eukaryote microorganisms, the evolutionary relationship of microorganisms, the structural and physiological characteristics of microorganisms, the relationship between microorganisms with the environment and human, and the roles of microorganisms in food, pharmaceutical and environmental management industries. General microbiology

	laboratory skills are included. These fundamental knowledge are the important as introductory topics required for more specific area of microbiology such as bacteriology, virology, mycology, microbial physiology and applied microbiology. The learning and teaching approach for the module will be lecture, practical and tutorial-based. In practical classes, students will be going through guided experiments and analyzing data obtained during the practical sessions. The module is supported by a combination of online lectures, videos and supplementary reading materials.
Introduction to Food Science and Nutrition	This module is a prelude to more detailed studies of the core elements that comprise a food science degree program. It traces the evolution of food science and nutrition, introduces the core content including food composition and chemistry, food nutrition and health, food preservation and processing, food safety and quality, as well as discusses contemporary issues in food science and nutrition. Authentic learning, collaborative learning, and student self and independent study are among the teaching and learning approaches adopted by the module. The module content will be delivered mainly via interactive lectures and tutorials.
Food and Nutrients Evaluation	The module provides an introductory knowledge on the science of foods including a comprehensive understanding of food composition and properties, processing and analysis of foods, food evaluation, food safety and quality assurance. Basic laboratory techniques to investigate properties of food, analysis of food components, simple processing of food and evaluation of the finished product are also included in this course. Laboratory practicums will introduce some of the experimental approach to preparation, analysis, compositional and quality assessment of food products. With hands-on practical activities, this module provides an opportunity for students to develop their basic laboratory skills and understand the strengths and limitations of proximate analyses, thereby enabling students to justify the choice of analytical techniques that are most suitable for certain food materials. This module is supported by a mixture of face-to-face and online lectures, tutorial and practicum, covering theories that includes the identification of appropriate method for analysis of food and nutrients composition in the food industry (written examination); perform the lab experiment analysis (individual laboratory skill test); critically analyse the experimental data (online forum); and present the data effectively through written report.
Techniques in Food / Nutrition Research	The module is designed to develop students' theoretical and practical understanding of instrumental methods applied to the determination of major and minor components of foods. Criteria for the choice of various analytical methods will be presented where emphasis will be put on the integration of analytical concepts and technologies to solve practical analytical problems related to different food properties. The teaching and learning approaches for the module include self-directed and problem based learning. The information and knowledge will be managed and transferred using both traditional and digital approaches such as lecture, tutorial, discussion, demonstration (practical session), case studies, games, virtual lab and projects, where students will be actively engaged in the learning process. Student feedback and response from these learning activities will serve as a formative assessment to monitor student learning.
Food Product Development	his module aims to provide the students theoretical and practical knowledge of new food product development. Food components and their interaction in food products will be reviewed through product

	modifications and reformulations to meet changing health requirements, lifestyle preferences and consumer demand. All of the projects require the groups to produce a product in a 'market ready', packaged form. Students need to go through the stages of concept development, prototype development, shelf-life assessment, consumer testing, packaging design and labelling. Information and knowledge will be managed and transferred using both traditional and digital methods through approaches such as lecture, discussion, demonstration (practical session), case studies and projects through active, collaborative and multidisciplinary learning approaches. As a capstone course, this module requires students to assimilate and integrate the knowledge they have gained to work in teams. The technical problem-solving phase of food product development set in a simulated industrial research and development situation. Students will be working in groups to research and undertake the development of a food product from initial consumer needs analysis, concept/product briefing to ingredients sourcing, development and sensory trials and a presentation.
Introduction to Biostatistics	Introduction to Biostatistics aims to teach students to organize, summarise and make evidence-based decisions. This module provides students with an understanding of scientific data and the application of various statistical methods regarding living things and/or their by-products. It also further develops students' analytical, observation, experimentation, data collection, data interpretation, theorizing, besides decision-making skills. The lecture topics in this module include descriptive statistics, quantitative plots, probability, hypothesis testing, chi-square test, chi-square, linear regression, and non-parametric methods. This module allows students to use SPSS to perform statistical analysis effectively and present results in a significant manner. Students learn on the development of a questionnaire, data collection, and data analysis, as well as various ethical considerations that are of concern during surveys, and/or experimental research. Lectures, online videos, online tutorials, tutorials using SPSS, quizzes, and survey-based assignment approaches are used to cover these topics.

BACHELOR IN BIOTECHNOLOGY (HONOURS)

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	BIO60204	Principles of Biochemistry	4	-
2	BIO60304	Biodiversity and Conservation	4	-
3	BIO60904	Cell Biology	4	-
4	BIO61204	Principles of Genetics	4	BIO60904
5	BIO61304	Techniques and Instrumentation in Biotechnology	4	BIO62204
6	BIO61404	Crop Biotechnology	4	BIO62204
7	BIO61204	Animal Biotechnology	4	BIO60904
8	BIO61604	Applications of Bioinformatics	4	BIO60204 BIO61204
9	BIO62104	Bioprocess Technology	4	MIC60104
10	BIO62204	Introduction to Biotechnology	4	-
11	RES60204	Research and Laboratory Management	4	-

Module Name	Module Synopsis
Principles of Biochemistry	Principles of biochemistry primarily focused in the biochemistry of humans. It is known that the basic principles of biochemistry are common to all living organisms. This module provides an introduction to biomolecules in living systems. Students are introduced to the basics of bioenergetics before progressing to studying energy metabolism pathways and their regulation. The individual pathways will then be integrated together to give students a holistic view of energy metabolism. This module also introduces the basic theoretical knowledge of molecular genetics. This module will be delivered using the pedagogies of 'Guided Learning' and 'Self-directed Learning' via lecture and tutorial-based approach and is supported by a combination of face-to-face lectures, online lectures and tutorials, with students engaging with practical tasks during the laboratory sessions. The module is supported by a combination of online lectures and supplementary reading materials.
Biodiversity and Conservation	This module is to introduce basic understanding of the inter-relationship between the living processes of humans, animals, plants and organisms with the habitats that they live in. It also provides students with an overview in the areas related to biodiversity conservation. The module discusses the various strategies of conservation and sustainability of our environment. The students will be equipped with sound understanding of biological diversity and the related processes, where the knowledge can be extended into various fields, including biotechnology, human biology and the environment. Module content will be delivered as lectures and relevant online materials (eg. Youtube), and concepts will be extended in detailed problem-solving exercises during the tutorials. Students will develop their practical skills in identifying the diverse life forms and key ecological concept in the environment through field trip (include both the aquatic and terrestrial habitats) and laboratory work. The students will also work on a group assignment in the form of oral presentation in the latest issues related to biodiversity and conservation.
Cell Biology	This module introduces the student with a comprehensive understanding of cell structures and functions, including how cells divide, genetic information systems, generate energy, coordinate

	complex processes and communicate in a living system. The core concepts of molecular cell biology and techniques which are essential to build up the strong foundation in any of the core disciplines covered in the programme. The teaching and learning approach for the module will be real-life problem-based learning, with students engaging with practical tasks during the practical sessions and demonstrate their understanding, thoughts and reflection via written reports and presentation. The module is supported by a combination of lectures (face-to-face and online learning) and tutorials.
Principles of Genetics	The module introduces the fundamental knowledge of genetics and its applications in Biotechnology. Beginning with an overall introduction to the science of genetics, followed by transmission genetics (Mendelian inheritance), extensions to Mendelian inheritance, chromosomes heredity, genetic linkage and mapping in bacteria and eukaryotes, as well as core concepts of quantitative-, population- and developmental genetics. Two clear module objectives are outlined which include (i) attaining an understanding of fundamental knowledge of genetics, establishing a strong foundation in the principles of transmission genetics, molecular genetics, quantitative and population genetics and their applications; and (ii) developing keen problem solving skills and apply knowledge gained in other related fields in biotechnology through mastering the principles of genetics and exposure to genetic experiments and problems. This module is supported by a combination lectures, online tutorials, practicals, and self-directed learning. Module delivery strategy include focusses on discovery learning, generative learning and reciprocal teaching.
Techniques and Instrumentation in Biotechnology	This is an important module that introduces the techniques and instrumentations used commonly, in the field of biotechnology. This module allows students to gain theories and practical, hands-on knowledge of the operation, maintenance and calibration of instruments specialized in biotechnological laboratory. Technical procedures and instrumentation include basic laboratory techniques, molecular techniques, proteomics, metabolic analysis, whole cell analysis, nanobiotechnology and chemical analysis. The learning and teaching approaches will be conducted in research informed setting which consist of both lecture and practical.
Crop Biotechnology	Crop biotechnology is a multidisciplinary module that introduces the underpinning terms, concepts, and knowledge of a rapidly progressing and expanding biotechnology-based agriculture industry. This module brings together the fundamental concepts, knowledge, and techniques such as breeding, selection, hybridization, farming practices, mutagenesis, DNA extraction, recombinant, and gene editing with emphasis on special focus areas (current and future) of the agriculture sector such as molecular marker-based selections and development of transgenic plants. The selection and improvement of crops enable students to venture into research or be affiliated with bodies that cater to global issues on food shortage, and rising demand for crops. Other important related topics such as bioethics, biosafety regulation, and social perceptions of crop biotechnology are also covered in this module. Knowledge of concepts, techniques, and social issues in crop biotechnology, and its significance in agriculture-based biotechnology industries are essential in paving the way towards agricultural biotechnology- or research-related careers in the future.

Animal Biotechnology	This module introduces the basic concepts, tools and techniques as well as applications of animal biotechnology. Topics covered include the use of in vitro and in vivo animal models of diseases, animal tissue culture, tissue engineering, reproductive technologies, transgenic animals, conservation efforts as well as ethical and safety considerations in the field. Current issues in laws and biosafety regulations regarding animal biotechnology will also be discussed. The learning and teaching approach for the module will focus on student-centered learning approach, with interactive lecture and tutorial sessions as well as students performing guided experiments and analyzing data obtained during the practical sessions. There will be field trips to animal farms for observation and learning on livestock and veterinary reproductive biotechnology process. The module is supported by a combination of online lectures and supplementary reading materials.
Applications of Bioinformatics	The module introduces the underpinning knowledge of Applied Bioinformatics and its main applications in Biotechnology and Biomedical Sciences. The fields of "omics" which include genomics, transcriptomics, proteomics, and metabolomics all rely on bioinformatics for computing tools to analyse and "make sense" of the tremendous amount of biological data. Beginning with an overall introduction to the science of Bioinformatics, followed by various analyses methods of DNA sequences; genome sequencing and analysis; genome-wide analysis of RNA sequences transmission genetics; protein analysis and proteomics; and finishing with the analysis of biological networks. Two clear module objectives are outlined which include (i) attaining an understanding of applied concepts of Bioinformatics, establishing a strong foundation in the principles of biological data analyses and (ii) developing keen problem solving skills and apply knowledge gained in other related fields in Biotechnology and Biomedical Sciences through mastering the applications of Bioinformatics in relevant fields such as genomics, transcriptomics, proteomics and biological networks through exposure to practicals and assignments. This module is supported by a combination lectures, online tutorials, practicals, and self-directed learning. Module delivery strategy include focusses on discovery learning, generative learning and reciprocal teaching.
Bioprocess Technology	This unit introduces some fundamental aspects of biological processing with engineering principles, focusing on fermentation technology which involves kinetics and modeling of fermentation processes, as well as instrumentation, design and control of bioreactor. This unit also covers microbial fermentation with emphasis on microbial biomass, enzymes and metabolites, food, environmental and industrial engineering applications. The final focus is on the purification of products leaving the reactor using different product recovery sections such as recovery of particulates, product isolation, precipitation and combined operation. The learning and teaching approach for the module will be lecture and tutorial-based, with students performing guided experiments and analyzing data obtained during the practical sessions.
Introduction to Biotechnology	Introduction to Biotechnology is a module that aims to produce graduates with good knowledge and understanding of basic theories and principles of modern biotechnology. This MODULE covers fundamental topics such as recombinant DNA technology, vectors, selection, and transformation and development of recombinant molecules. Topics are taught from both theoretical aspects as well as

	experimental. Besides the fundamental knowledge, applications of biotechnology in various fields are also discussed using clear examples especially in domains such as microbial, plant, animal, medical, and nanobiotechnology. Current issues in law and biosafety regulations regarding modern biotechnology, and bioethics are incorporated to enable ethical decisions. The above topics are covered via lectures (face-to-face and online), and online tutorial activities such as case studies-based discussions, forums, and quizzes. Six guided practical sessions on bacterial transformation and nanoparticle synthesis are set, and a field trip is organized to understand the potential industrial application.
Research and Laboratory Management	This module focuses on the principles of laboratory and research management, as well as commercialization. Topics for laboratory management include lab resources management, operation, accreditation, risk assessment and project management. Research management covers the initiation of research problem, intensive literature search, research planning, data analysis, reporting of scientific findings, current trends in life science research and critical understanding of copyright and regulations in research profession. The fundamental concepts of commercialization, involving developing prototype, patent and business plan will also be included. Problem-based learning approach will be emphasized as the teaching and learning approach in this module. The module will be delivered by lecture and tutorial-based, including illustrative cases presenting management problems by focusing on thought-provoking questions to enhance critical thinking skills as a reinforcement of theoretical content, and also to simulate real-life situation.

FACULTY OF SOCIAL SCIENCES & LEISURE MANAGEMENT

SCHOOL OF MEDIA AND COMMUNICATION

BACHELOR OF MASS COMMUNICATION (HONOURS)

Common Core

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	COM62704	Intro to Mass Communication	**4**	
2	COM62404	Intercultural Communication	4	
3	COM62004	Media Writing	4	
5	COM62204	Visual Communication	4	
6	COM62104	Communication Theory	4	
8	COM62304	Organisational Communication	4	

Choose ONE (1) Specialisation

Public Relations

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	PRL61204	Public Relations Principles	4	-
2	PRL61404	Promotional Writing	4	-
3	PRL61304	Publicity and Media Relations	4	-
4	PRL61104	Crisis Management	4	
5	PRL61004	International Public Relations	4	

Advertising and Brand Management

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	ADV61504	Advertising Fundamentals	4	-
2	ADV61704	Strategic Copywriting	4	-
3	ADV61604	Corporate Identity and Branding Design	4	-

Digital Media Production

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	BCA61704	Trends in New Media	4	-
2	BCA61504	Narrative Writing	4	-
3	BCA61404	Audience Studies	4	-

Journalism and Media Practice

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	JRN61704	Journalism Fundamentals	4	-
2	JRN61804	Newsgathering and Writing	4	-
3	JRN61504	Narrative Journalism	4	-
4	JRN61304	Activism and the Media	4	-

Module Name	Module Synopsis
Introduction to Mass Communication	This module outlines a basic understanding of the various types and roles of different traditional and new media industries as well as the related institutions of journalism, advertising and public relations and their respective structure, support and influence. Particular attention will be paid to mass communication issues relating to the rise of digital media such as trends, conglomeration, convergence, globalization and hypercommercialism. The module also discusses the impact of the developments on society, culture, politics and other relevant contexts. Mass media and communication in the Malaysian context will also be explored. The teaching and learning approach will be project-based, with lectures and guided tutorials exercises and instructions to assist students in accomplishing their assigned tasks. Students will learn to apply concepts to analyse the current issues which involve the developments of the media industry. Students will accomplish their assignments by collaborating in groups and working independently. There are regular face to face and online feedback sessions to gauge the progress of learning and the alignment of their learning to the learning outcomes stated in the brief leading to a final submission piece. The module is supported with a combination of lectures, tutorials and industry guest talk sessions when available and blended learning activities through online exercises to encourage self-directed learning.
Intercultural Communication	This module outlines the personal and theoretical understanding of the cultural origins of people's values, ideologies, habits and how they affect communication across cultural, racial and ethnic lines. It also seeks to develop awareness and increased understanding among peoples of different cultures, an appreciation of this rich diversity, and to offer tools for a lifeline of continued growth in intercultural competence. The module will be divided into three sections; Foundations of Intercultural Communication, Intercultural Communication Processes and Intercultural Communication Applications. The teaching and learning approach is based on action research, authentic learning and experiential learning. This module will be delivered through face-to- face lectures and tutorials, in class activities which requires individual and group presentations and blended learning approaches.
Media Writing	This introductory course on various aspects of writing for different media platforms intends to help students acquire written communication skills by exploring different forms of writing online and in print. In this course, you are expected to develop strong basic reporting and writing skills. Using different story forms – including but not limited to journalistic news – students will learn how to write a diverse set of stories and embrace the freedom and responsibilities of traditional journalism. Students will learn Associated Press style and various journalistic reporting and writing techniques. They will learn the basics of writing press releases, copywriting for advertisements and other journalistic and communication forms throughout the semester in both lecture and tutorial sessions.

Visual Communication	This module emphasizes the basic understanding of visual literacy and communication within the current media industries through the comprehension of design elements and principles. It also focuses on the practical application and ethical considerations of the visual aspect in screen and print based visual communication design. The learning and teaching approach for the module will be computer-lab based, by having students to learn and engage in practical tasks in a computer lab environment. As a result, the lecturer is able to have a good view at students' learning progress during class so that it aligns with the learning outcomes.
Communication Theory	module introduces history, origin, background and evolution of various mass communication theories. It presents the important notions, concepts, assumptions, arguments, issues, limitations and future development of the theories. This module also discusses the connections between communication theories and research. The learning and teaching approach for the module will be lecture- and tutorial-based, with students engaging in discussion with instructor.
Organisational Communication	This subject develops exceptional communication skills and understanding of the different communication theories, ethics, and practices needed in an organisation. The understanding of the communicative processes will assist an individual in his/her success in contributing positively in an organisation by empowering his/herself. Communication performs a key role in understanding ourselves as part of an interconnected network of knowledge and skills in the working world.
Public Relations Principles	This module gives students an overview of history and development of Public Relations with an emphasis given to different public that an organisation has to deal with. It also provides a ground for students to understand the need for a strategic perspective instead of the mindset of a public relations technician. Students are expected to keep up with current affairs and the communication approach adopted widely using the social media. The teaching and learning approach for the module will be a combination of face-to-face lecture with a blend of online and practical tutorial tasks where students get to analyse case studies and present their ideas, both online and in class.
Promotional Writing	This course introduces the concept of designing and writing promotional materials for a wide spectrum of communication media. It covers the scope and structure of the different forms of writing used in public relations, advertising and marketing. The teaching and learning approach for this module varies from face to face tutorial to guide students in their work, online lectures to enhance their knowledge and technology
Publicity and Media Relations	The module outlines the role of a public relations practitioner as a media relations strategist in an organization. Students are introduced to the fundamentals of media practice, various techniques of media relations, methods of evaluating publicity outcomes, and understanding the various types of publicity collaterals for the press. The learning and teaching approach for the module combines face-to-face lecture with a blend of online and practical tutorial tasks where students get to role play, analyse case studies and present their ideas and within the group. There is regular review and feedback sessions for students to know about how they are progressing through the module and their level of attainment of the module learning outcomes.
Crisis Management	This module outlines the key responsibilities of public relations in the contemporary world by understanding the importance of managing crisis locally and internationally. It will introduce to the students the different types of crisis and offers a wide range of frameworks and methods to managing crisis. Due to the heavy frequency of crisis taking place in organisations and countries, this module will help students to differentiate between a crisis and

	an issue. At the end of the module, students are expected to create a crisis communication plan based on varieties of scenarios. The learning and teaching approach for the module will be a combination of face-to-face lecture with a blend of online and practical tutorial tasks where students get to analyse case studies and present their ideas, both online and in class.
International Public Relations	This module outlines the practice of Public Relations in an international context. It also introduces students to the nature of cross-cultural communication. Students are exposed to various public relations campaigns in order to explore the differences and similarities of campaigns from various countries. Issues of ethics as well as language (verbal and non-verbal) and global consultancy are covered in this module. The teaching and learning of this module is towards student-centred learning approach with the combination of lectures (online and face-to-face), research and field study as the mode of delivery.
Advertising Fundamentals	This module aims to provide students with the basic understanding of the history, development, scope, structure, and nature of the advertising industry as well as media trends and the process of creating an advertising campaign. Students will be exposed to the basic principles of integrated marketing communications, and its effects on and issues related to media industries. The teaching and learning approach for this module is a combination of guided learning and project-based learning. There will be in-class lectures, supported by additional online material and online tutorials. The tutorials are structured for students to be able to self-assess their knowledge of the topics covered in the classes.
Strategic Copywriting	This module is designed as a skill-based course focusing on the ideational aspects of advertising, specifically copywriting. The emphasis will be on strategy which involves research for information on product and consumer and the conveyance of the information through suitable forms of writing in the creation of persuasive ad copies for various media. The teaching and learning approach will be project-based, with lectures and guided tutorials exercises and instructions to assist students in accomplishing their assigned tasks. Students will learn to apply concepts to solve problems critically by collaborating in groups and working independently.
Corporate Identity and Branding Design	This module outlines the nature of modern branding through its history and case studies of successful brands. It focuses on the development of visual identity design for brands, primarily that of logo and packaging design. The teaching and learning approach will be studio-based, with lectures and tutorial or practical exercises designed around introducing, discussing, and implementing design concepts for branding. Regular critique sessions or progress checks with the lecturer will facilitate student learning as well as help to assess their progress through the semester. By looking at case studies and contemporary examples, students will be able to learn how branding has changed over time. Students will be assessed primarily through the assignments, where they will apply basic design concepts and knowledge of logo design trends to develop a visual identity for a brand, with emphasis on creating a unique logo design, and a distinctive and cohesive look across various brand collaterals (e.g. business cards, letterheads, social media account icons, product packaging, etc.).
Trends in New Media	This module provides students with a basic understanding of the history, nature, development, current trends, and future digital media practice. We design the module to help students comprehend the digital culture and explore the meanings of technical innovations in media, economics, politics and social life. Digital platforms and devices are profoundly affecting the way groups,

	institutions, businesses, communities and governments communicate. While studying the emerging technologies of the present, we also look forward to possible future developments and explore how new media could transform the nature and ethics of communication. The learning and teaching approach for the module will primarily be lecture-based. Simultaneously, tutorials are designed for students to engage with group discussions and group and individual activities, enabling them to deepen their understanding of the topics delivered during lectures. The module is supported by online lectures, discussions and other classroom activities.
Narrative Writing	This module will cultivate the students' ability to conceive story ideas from their original vision, research and further develop them, to finally write drafts in producing a short fiction script for the digital media. Students are introduced to the basic elements of narrative writing for the screen such as character, world of the story, dramatic events, conflict, dialogue, treatment, and format. The learning and teaching approach for the module will be discussion-based, with students engaging with vast ideas during the tutorial sessions and presenting their stories and thoughts individually. Regular review, feedback and critique sessions leading to the final draft of the script to assess progress and alignment to the learning outcomes in relation to the brief. Students will also work collaboratively to provide feedback on each other's scripts.
Audience Studies	This module introduces students to film art and film form with a particular emphasis on narrative filmmaking. Students will be exposed to the fundamentals and key concepts in film form and film style in developing their ability to evaluate and articulate filmic works. Students will also focus on key filmmakers and their key filmic works to understand what is special or significant about these works within the larger context of modern cinema. The teaching and learning approach for the module will primarily be lecture-based. Simultaneously, tutorials are designed for students to engage with group discussions, as well as group and individual activities, enabling them to deepen their understanding of the topics delivered during lectures. The module is supported by online classes, guided learning, discussions, and other classroom activities. Assignments are geared toward shaping students' research on textual analysis, particularly in the aesthetics and philosophical of film as a cinematic text.
Journalism Fundamentals	Students learn the foundations of journalism, significant contributions in history, essence of modern journalism, developments of past and present journalism in Malaysia through this module. Students are exposed to newsroom traditions, shifts and contemporary practices in global perspective from news gathering and reporting, investigations and experiences. The teaching and learning approach will be assignment-based, with lectures and guided tutorials exercises and instructions to assist students in accomplishing their assigned tasks. Students will learn to connect the concepts learned with the current standard practices in the field of journalism. Students will accomplish their assignments by collaborating in groups and working independently. There are regular face to face and online feedback sessions to gauge the progress of learning and the alignment of their learning to the learning outcomes stated in the brief leading to a final submission piece. The module is supported with a combination of lectures, tutorials and industry guest talk sessions when available and blended learning activities through online exercises to encourage self-directed learning. Online feedback would be provided to guide the students. Students will be assessed primarily based on assignments which provide them opportunities to explore the developments of the journalism field in both traditional and new media platforms.

Newsgathering and Writing	This course is aimed at acquainting students with the principles of news writing and putting them into practice. The course teaches students how to write a news story, attribute it to the news sources and learn how to conduct interviews and gather information. Students will also be exposed to various styles of hard news writing in Malaysia. The teaching and learning approach will be assignment-based, with lectures and guided tutorials exercises and instructions to assist students in accomplishing their assigned tasks. Students will learn to put into practice newsgathering techniques and various forms of news writing as part of their assignments.
Narrative Journalism	This course helps students to develop their narrative and feature writing skills and build their confidence in written communication and storytelling. It draws upon the discipline of writing for publication and links it with the rigours of feature writing conventions and creativity. The course components will enable the students to be informative, entertaining, and persuasive whilst observing media conventions of accuracy, brevity, and clarity. The teaching and learning approach will be assignment-based, with lectures and guided tutorials exercises and instructions to assist students in accomplishing their assigned tasks. Students will learn to put into practice various forms and styles of narrative writing for feature story pieces throughout the course.
Activism and the Media	This module aims to introduce students to the role that media practitioners such as journalists, public relations practitioners, social media influencers and ad campaigners in using the media to affect political, social, economical and cultural transformation in a local, regional and international context. The focus of this module will be to study and analyse the impact of various creative uses of media and communication tools by various groups, opinion leaders and interests to influence policy, shift mindsets and champion society causes. Students will get to study current theoretical debates around the use of media in activism and campaigning, through seminar debates of lectures and readings, role plays, group work, devising their own campaigns and by examining a campaign case study of their choosing. The teaching and learning approach will be assignment-based, with lectures and guided tutorials exercises and instructions to assist students in accomplishing their assigned tasks. Students will learn to connect the concepts learned with the current standard practices in the field of journalism.

SCHOOL OF HOSPITALITY, TOURISM & EVENTS

BACHELOR OF INTERNATIONAL HOSPITALITY MANAGEMENT (HONOURS)

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	HOS61304	Hotel Revenue Management	4	-
2	HOS61404	Hospitality Business Modeling and Simulation	4	-
3	HOS61504	Hotel Innovation Management	4	-
4	HOS61204	Hospitality Management and Leadership	4	-
5	HOS60704	Beverage Management	4	-
6	HOS61604	Luxury Brand Management	4	-
7	HOS62204	Service Quality Management in Hospitality	4	-
8	HOS60504	Hospitality Project Management	4	-
9	HOS60904	Convention and Sales Banquet	4	-

Module Name	Module Synopsis
Hotel Revenue Management	The discipline of revenue management combines data and operations research with strategy and understanding of today's customer. The study of revenue management must be analytical and detail orientated, yet capable of thinking strategically and managing the relationship with sales. This subject deals with the learning and understanding of the principles and elements of revenue management. Students will be exposed to the implementation of revenue management strategies. It also covers the area of performance analysis to allow students to assess the situation and to develop a suitable approach to better maximize an organisation's revenue.
Hospitality Business Modeling and Simulation	This subject comprises of a short term project, team management, and synthesis of the knowledge gained throughout the program.
Hotel Innovation Management	This course will provide an introduction to the key issues involved in the design of hotel premises and facilities, illustrated with examples drawn from the industry itself. It presents the basics of hotel layout, equipment/systems, project planning and design.
Hospitality Management and Leadership	This module covers the pertinent management functions of planning, organizing and controlling as well as human relations functions that are essential in hospitality management and these are: communication and decision making, conflict management, leadership and motivation. In introducing the module, the syllabus provides an overview of management in the hospitality industry specifically, its characteristics, career opportunities and important influencing trends. In addition, the role of service as well as critical and contemporary issues/challenges faced in managing and leading hospitality organizations are also examined.
Beverage Management	This class focuses on the basic understanding of alcoholic and non-alcoholic beverages which is found in the commercial world. Students will learn on classification, processes and identification of these beverages. Understanding the evolution of drinks and the commercialization of the beverage is studied.
Luxury Brand Management	The module will equip students of the programme with management, marketing and professional skills to work in the luxury goods and experiential luxury sectors. The module would comprise of factors that impact luxury brand management in tourism and hospitality management related businesses by providing an in-depth understanding of the debates on luxury in an historical and cross-cultural context, and offers a strong academic underpinning on theories of luxury and consumption.

	The module would develop critical thinking and problem solving skills by understanding the theoretical approaches of luxury brands and to critically debate on luxury brands. It covers the fundamental knowledge and skills that can be directly applied in the practical work context.
Service Quality Management in Hospitality	The module will emphasize on the different concepts and dimensions of service quality management. The module would comprise of the factors that impact service quality in tourism and hospitality-related businesses, the role of service providers, and the method of measuring service quality. The module accentuates the service delivery system of the hospitality industry, which references a particular focus on service quality and other catering on different concepts and dimensions of service quality management. The module is expected to provide a detail understanding of service quality management in the hospitality and tourism industry, which is essential as this serves as a fundamental for quality service environment in the hospitality and tourism industry. The application of service quality in the operational activity will provide clear evidence of guest satisfaction, thus provide the industry with a competitive advantage. The learning and teaching approach for the module will be in flipped classroom-based alongside problem-based learning based; thus, presenting their ideas and thoughts within the group are incorporated. This module is supported by blended-learning and collaborative learning in order to achieve desired goals. The TIMES online platform will be used for providing tutorial notes and lecture slides. Besides, assignments are developed to provide a combination of field-based learning and project-based learning, supporting student's problem-solving skills and elevate thinking capacity. The service quality assessment includes understanding, developing, and executing empirical investigation using the service quality assessment scale. The hotel visitation group project involves hospitality establishment visitation and evaluating service delivery capacity and capability from mystery shopper's aspect of such.
Hospitality Project Management	The Hospitality Project Management of School Hospitality, Tourism and Events degree program allows students the opportunity to study the management of small businesses, start-ups and intrapreneurship. Through the course of study, students are prepared to start their own business as well as work for small businesses and start-up companies. Students also learn about intrapreneurship and how to lead change within organizations. Entrepreneurship is not solely about business skills or starting new ventures; it is a way of thinking and behaving relevant to all parts of society and the economy. Entrepreneurship education is a process which develops individuals' mindsets, behaviours, skills and capabilities and can be applied to create value in a range of contexts and environments from the public sector, charities, universities and social enterprises to corporate organisations and new venture start-ups. Entrepreneurial and enterprising graduates should be equipped to fulfil their potential and to create their own future. In this module, students are expected to: • Apply the major concepts, skills and values of business administration. • Communicate effectively to diverse audiences, purposes and situations through a variety of professional methods within business administration. • Use decision-support tools to resolve contemporary business issues using ethical business practices. • Identify the types of capital funding sources for start-up and existing businesses. • Develop a viable business plan. • Execute their business plan and review business operation.

	This module approach is supported by a combination of proportion of face-to-face and practical sessions enable students to learn from each other and students will work with business on a real life development project. This allows them to learn 'in' entrepreneurship and creating knowledge and as well as 'about' entrepreneurship. Student projects focus on: 1. Life-images of entrepreneurship – students visit the business and write the business concept; students write a report reflecting upon their learning from these 'live cases'. An entrepreneurial project – students can choose from: engaging in an entrepreneurial venture, developing their own business plan, or investigating a topic from an entrepreneurial perspective.
Convention & Banquet Sales	This module gives an insight into the Sales Catering and Convention services from a sales perspective in the Hospitality Industry. The aim is to enable students to understand and apply the concepts of sales & catering management principles and industry practices in the classroom practical environment. The learning and teaching approach for the module will be students engaging in practical role play during the class sessions. There will be opportunity for students to learn the Delphi Sales and Catering System – the world's leading sales and catering system. The technology-based skills acquired by students will give them the competitive advantage. This module is also supported by group assignment & presentation on hotel sales proposal in bidding for an event. There will be comments and reviews given in class for the practical tasks. The module is carried out by a combination of lectures, role play and in TIMES. There are various assessment approaches ranging from assessing the sales negotiation skills and knowledge among students to exploring the use of Delphi system.

BACHELOR OF INTERNATIONAL EVENTS MANAGEMENT (HONOURS)

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	EVT61104	Event Sponsorship and Funding	4	-
2	EVT61704	Sustainable Event Management	4	-
3	EVT60404	Events Project Management	4	-
5	EVT60904	Event and Tourism Risk Management	4	-
6	EVT60104	Exhibition Management	4	-
8	EVT60204	Events Operations	4	-
9	EVT60604	Events and Entertainment	4	-
10	EVT60704	Conventions and Meetings Management	4	-
11	EVT61204	Event Technology	4	-
12	TOU61704	Destination Geography and Analysis	4	-
13	TOU61304	Holistic Approach to Health and Wellness	4	-
14	TOU61804	Tourism Economics	4	-
15	TOU60304	Data and Media Analysis for Tourism	4	-
16	TOU60904	Sociology of Tourism	4	-
17	MPU3143	Bahasa Melayu Komunikasi 2	4	-
18	HOS60704	Beverage Management	4	-
19	HOS62204	Service Quality Management in Hospitality	4	-

Module Name	Module Synopsis
Event Sponsorship and Funding	The module introduces students to the various elements of sponsorship and fundraising related to the event industry. The module covers the importance of sponsorship as well as how sponsors can benefit from sponsorship. In addition, the module looks into the steps in preparing a sponsorship package and ways in developing a fundraising plan. The teaching and learning approach for this module focuses on student centered learning approach together with project based learning, where students will have to search for necessary information for the project and assignments. Throughout the semester, there will be a mixture of face to face and online guided learning through online lectures and tutorial. The assessment approach will be based on formative as well as summative approaches. Students will have to prepare a sponsorship proposal and fundraising plan where formative feedback will be provided during tutorial sessions and online consultations. In addition, there will be opportunity to approach potential sponsors for an assigned event.
Sustainable Event Management	Sustainability has emerged as an important events management concept, and successful events managers must be equipped with knowledge and understanding of various components related to sustainable event management. This module introduces global environmental issues and sustainability management in the events industry. It includes various components and elements related to sustainable events management, which would enable students to develop and manage environmentally sustainable events successfully. The learning and teaching approach for the module will encapsulate Authentic Learning when students examine and review environmentally sustainable components at various stages of an event. Additionally, students will undergo Problem-based Learning by developing a compelling proposal that recommend systems and best practices for implementation at sustainable

	events. The module is also supported by a combination of face-to-face and Blended Learning/e-Learning sessions, with materials accessible through TIMES. The module has a combination of two assignments and one group project. The assignments require students to recognise environmentally sustainable components for events, and then review these components at various stages of an event. The main project requires students to recommend and justify the implementation of environmentally sustainable components for an event of their design. Students will be guided through regular feedback and discussions as well as critiqued through peer and tutor formative assessment.
Events Project Management	This module will equip students with the skills and tools in event planning. It will focus on the development of an event proposal that covers the elements of planning, management, finance, operation, marketing, and sponsorship. In order to prepare the event proposal, students are required to negotiate with potential stakeholders, conduct a site inspection and some research based on the proposed event. Students will be advised to take into consideration the recommendation and opinion given by potential stakeholders. By doing so, students will be required to conduct a feasibility study, which is an analysis of the viability of an event idea. This analysis will help the students to answer essential questions related to their proposed event. Another part of this module will cover the communication skills that will be developed during a bidding session pertaining to the proposed event idea. The teaching and learning approach that will be used for this module mostly cover guided learning and project-based learning. Apart from that, students will be given an exercise pertaining to the real issue that has happened in the industry. This initiative will help students to have greater skills of analysis and synthesis that is applicable in the event industry.
Event and Tourism Risk Management	This module exposes the students to identify event risk factors inherent to any event and the strategies to manage those risks. It aims to equip students with theoretical insights of managing risk in event and tourism management. It incorporates holistic view of risk management that includes risk identification, assessment, control, prevention and solutions. This module requires students to complete both individual and group formative and summative assessments that are evaluated through the course of fourteen weeks. Pedagogy approach may include the focus on problem-based learning, action learning, and collaborative learning. Online quiz on TIMES will be conducted throughout the semester. A fair division of face-to-face sessions and e-learning discussions relating to the module assessments are prepared. At the end of the semester, it is anticipated that the students will be able to comprehend the essentials of event risk management and ultimately deliver a comprehensive plan to minimise, if not eliminate risk potentials. The module will adopt a personalized and collaborative learning and teaching approach where there will be a mixture of guided learning and project-based learning. Assessment tasks are designed to develop students' capability in comprehending risk management in the context of event and tourism. The tasks evaluate students' knowledge level in communication skills, entrepreneurism and critical thinking. This is delivered in presentation and analyses of case studies in tutorial sessions.
Exhibition Management	There is an increasing emphasis on the role that exhibitions play in economic, professional and educational development which promotes benefits in knowledge exchange, scientific research, technology transfer, networking and motivation. This module will: 1. enable students to build their skills and knowledge of exhibitions in the Meetings, Incentives, Conventions and Exhibitions (MICE) industry.

	2. help students identify and understand and fundamental elements for different types of exhibitions. 3. equip students to take on key positions in exhibition management to meet growing demands of the MICE industry. The learning and teaching approach for this module is Authentic Learning and Case-Based Learning as study trips are organised for students to experience exhibitions. Working in groups, students are required to observe and review real issues of exhibitions visited and, subsequently, design and plan towards the production of a proposed exhibition. Guidance and feedback shall be offered progressively throughout the assessments of learning outcomes, Question and Answer (Q&A) sessions during tutorials as well as through online group discussions. The module is delivered through a combination of face-to-face lectures and tutorials as well as blended learning through online quiz or games. Additionally, students are required to conduct self-directed learning through research and analysis or evaluation of observed scenarios. Comprehension of fundamentals shall be conducted continuously through online assessments (online quiz and games). Review of an exhibition floor layout and booth designs along with visitor activities offers learning through observations, retention, and replication. The group project offers students the opportunity to integrate their knowledge and experiences to develop a comprehensive proposal, which includes design, operational planning and marketing. The proposal shall be presented to an audience of peers and industry experts for critique and feedback as formative assessment.
Events Operations	The module equips students with the essential knowledge and skills in event coordination. The module covers the aspect of event operation tools such as timeline, manpower allocation, logistics, processes and dealing with external stakeholders. The students also will experience how to coordinate a real event from planning phase to the actual day of the event. The module will be conducted through online and face-to-face approach. For online approach, it will cover the theoretical components inclusive of online lectures, online videos, quizzes, discussions and forums meanwhile the-face-to face approach will be focusing on tutorials (on how to do it) and weekly meetings that monitor the progress of the event. The learning and teaching approach for the module will be inquiry-based learning and cooperative learning. There will be four assessments in this module, which are the event concept, event operations tools, VLOG and event coordination. Assessment 1 will measure students TGC2 (Problem solving, critical and creative thinking skills) where the students are required to think creatively on how to conceptualize an event experience for the event that they will organize. Research on information from multiple sources will help students to prepare for assessment 1. The second assessment is the event operation tools that requires the students to work in a department to produce their departmental plan inclusive of the production schedule and report. The students will achieve TGC 3 (communication skills) for this assessment. For assessment 3, students will be required to work in teams and coordinate the event according to the plan. Each member of the team will be assessed on their teamwork and leadership in organizing the event. The evaluation will be based on their performance from three perspectives, and they are the organizer, internal team and the supervisor. Students will develop TGC 6 (Social competencies) through this assessment. The last assessment is the VLOG that requires students to self-reflect on their performance based on their progression of assessment 2 and 3. This assessment will help them to achieve TGC 4 (lifelong learning). In order to ensure that the event is organized according to the plan, there will be regular meetings and consultation sessions with the lecturer, organizer and other

	stakeholders of the event. In the preliminary phase of event coordination, students will be required to do research and come out with the concept that meets the organizer's needs. The major project (assessment 2 and 3) involves teamwork, communication skills and organizational skills.
Events and Entertainment	The module introduces students to the events and entertainment industries, which covers a general aspect on the development of the events industry and the types of events available within the industry. The module will also look into the structure of the events industry and the relationship between events management and education as well as the various theories involved in events management. Another part of the module will emphasize on the significance on entertainment for events, entertainment management and music licensing. The module will adopt a personalized and collaborative learning and teaching approach where there will be a mixture of guided learning and project-based learning. Students will be guided through online lectures, face-to-face lectures and tutorials together with a series of online activities that helps to prepare students for the final written assessment. Students are required to conduct online information search to prepare for the face-to-face tutorial sessions and for preparation of assignments and project. The module has a combination or two group assignments and one group project. The assignments require students to evaluate the impacts of an event and to visit an event to assess the entertainment genre of the event. The main project requires students to present the structure of the event industry, event life cycle and uniqueness of events in an oral and written communication format.
Conventions and Meetings Management	This module emphasises on design and planning of meetings and conventions. Students are introduced to industry developments, key players and their roles, as well as essential components for them to plan and bid for meetings or conventions projects. The teaching and learning approach for the module will incorporate case-based learning, where students will visit a convention to identify issues and propose solutions. Group work will engage students in collaborative learning. Students will also undergo self-directed learning and authentic learning to create a successful proposal and bid by showcasing their entrepreneurial skills. Blended or e-learning lesson delivered through online quiz and games, will offer fundamental and theoretical information on major components in planning conventions or meetings. Online games and quizzes will generate frequent feedback, while face-to-face reviews will be given progressively through presentations and interactive (critique/debate) sessions aligned to learning outcomes. The group assignment will synthesize knowledge and creativity to produce a proposal of professional competence. The proposal shall be presented to an audience of peers or industry experts for critique and feedback as formative assessment.
Event Technology	The module covers the concept of events and technology which emphasize the various usage of technology in planning and coordination of events. Students will be introduced to the application, software and equipment that can be used for events. This module also looks into the innovative event technology trends in the events industry. The class will be conducted through online and face-to-face approach. For online platform, there will be online lectures, videos, quizzes and forums that cater for the theoretical component of the module meanwhile the face-to-face practical classes will enhance students' learning through activities, discussions and application of technological skills. The module has four assessments, which are digital event review, event technology proposal, digital event operation and self-reflective assignment. Assessment 1 Digital Event Review requires students to find a virtual/hybrid event and conduct a review on the usage of technology of the virtual/hybrid event individually. Assessment 2 Event Technology Proposal is a group project that requires students to develop an event technology concept in the form of a proposal that solves the challenges of the event industry.

	Assessment 3 Digital Event Operation requires students to demonstrate proficient and effective use of event technology applications to execute a digital event task individually. Assessment 4 is an individual Self-Reflective Assignment that requires students to prepare a reflective assignment based on their involvement in Assessment 2. This module incorporates the development of technological skills.
Holistic Approach to Health and Wellness	This module designed to educate and train university students using holistic theories and practicals to understand and reflect upon their general health and wellness. The module uses traditional holistic teachings (e.g., Ayurveda and yoga) to introduce techniques for students to improve and reflect upon their day-to day physical and mental wellness. This module, through the theoretical coupled with practical lessons, gives a foundation for students to use themselves as well as promote health and wellness amongst their peers. The module is an elective, comprises of 12 lectures with practicals introducing the concept of a holistic approach to health and wellness where the students are taught the theories and methods for maintaining a healthy lifestyle as well as reducing and minimising the effects of stress. Students are taught Ayurvedic concepts around the body constitution and impact of diet, and exercise. In tandem with traditional practical methods (e.g., yoga) for working with the physical and mental attributes. This serves to guide the students to develop a balanced way of life unique to their individual requirements. The module also serves to provide guidance for students to develop a more disciplined healthy daily routine including the purpose of behavioural and internal self-restraints for body weight management, posture modification, breathing exercises, concentration techniques, mindfulness and relaxation techniques. Throughout the module the students will appreciate the effects of the holistic methods on their health and wellness with the expectation they will continue to use the knowledge in their future undertakings.
Destination Geography and Analysis	This module is designed to give a global understanding of the world geography in terms of their tourism resources and potential. After being introduced to the basis of geography, students will implement their knowledge using geographical tools to draw maps and understand the notion of distance. Emphasis will be placed on the physical layout and characteristics of each region, enabling the students to get familiar with the different resources and the main transport network across continents as well as the leading tourist destinations in each region accordingly. The module identifies the tourist flows within and into the regions, as well as gives an overview of the main tourist attractions in each region. It also identifies the main factors of tourism development of the regions. This module gives the tourism student a basis of understanding of the relationship between tourism and geography. The teaching and learning approach is lecture and tutorial based, where lectures and tasks are given, after which discussions take place in groups. The major project involves the application of geographical knowledge and destination analysis tools to gauge the strengths and weaknesses of a tourism destination. Students will be given immediate feedback on their use of analytical tools in their presentation, which will be a formative assessment of their understanding of each chapter.
Tourism Economics	The specifications in tourism economics should encourage students to be inspired, moved and changed by following a broad, coherent, satisfying and worthwhile course of study and gain an insight into related sectors. It should prepare students to make informed decisions. This subject covers issues within microeconomics and macroeconomics. Students will consider the basic economic problem and how it affects the allocation of resources in competitive markets. The subject will cover how price is determined through the forces of demand and supply and how tourism firms compete in the market. The subject

	also covers the issues firms face: costs, revenues, profits, growth and productivity. It considers the impact that such factors have upon a business operating in a competitive market. Within the macroeconomic specification students will consider three of the main variables in the economy and how these are influenced by government policy. It covers the expenditure and revenue of government, including taxes, and the effects that these have on the economy. The subject will also cover the reasons for tourism international trade, exchange rate including the impacts of changes in the value on tourism activity. Globalization and its implications on tourism sector, at a local, national and global level are discussed.
Data and Media Analysis for Tourism	The course's conceptual content focuses on technology in Tourism and hospitality. The use of different media (online and printed) in tourism business, websites, online marketing techniques, e-commerce, innovative methods with which to gather, store, and utilise information on a tourism business's clientele, and how technology can be used to manage and deliver information. These are important in today's rapidly changing and somewhat converged business environment, the content is primarily a platform from which the students will learn skills that will serve them well in their future careers. The learning and teaching approach for the module will be immersive and problem-centred (problem and case-based Learning). Students will be required to provide solutions to the problems and cases given to them. The module is supported by a combination of online lectures and hands-on sessions. Additionally, industry experts will be invited to conduct a workshop and talk to enhance the analytic skills of the students. The main project will be data analytic for tourism enterprises on a small scale. The collected data should be an analysis based on current theories. This assessment help the students to strengthen their critical thinking and analysis skills. Moreover, it helps them to apply theories to practice.
Sociology of Tourism	This module introduces students to the tourism phenomenon from a sociological perspective. Students will be taught the various sociological stances concerning tourist behaviour. Moreover, various research methodologies will be examined and discussed in order to have an in-depth understanding of tourist behaviour. This module also exposes students to the idea that different cultural contexts influence people's behaviour on holiday, which is a crucial concept for students to understand how to manage effectively culturally diverse tourism businesses. The learning and teaching approach for the module will be immersive and problem-centred (problem and case-based Learning). Students will be required to actively participate in fieldworks and online activities designed for them. Additionally, sociologists will be invited for giving a talk to enhance the analytic skills of the students. The main project will be a sociological analysis of a destination based on a given theory. Few field works will be provided to give a live example of the current issues in tourism. The assessments will be based on the field trips and theoretical bases.
Bahasa Melayu Komunikasi 2	This module is designed for students to communicate in basic Bahasa Melayu that covers their daily life as international students in Malaysia. When students have the ability to master and communicate in Bahasa Melayu, this will ease their daily communication with local people in any kind of situations. Students are also able to interact, read and understand Bahasa Melayu with ease. In addition to that, students are also able to write a short essay using simple sentences related to their daily life.
Beverage Management	This class focuses on the basic understanding of alcoholic and non-alcoholic beverages which is found in the commercial world. Students will learn on classification, processes and identification of these beverages. Understanding the evolution of drinks and the commercialization of the beverage is studied.

Service Quality Management in Hospitality	The module will emphasize on the different concepts and dimensions of service quality management. The module would comprise of the factors that impact service quality in tourism and hospitality-related businesses, the role of service providers, and the method of measuring service quality. The module accentuates the service delivery system of the hospitality industry, which references a particular focus on service quality and other catering on different concepts and dimensions of service quality management. The module is expected to provide a detail understanding of service quality management in the hospitality and tourism industry, which is essential as this serves as a fundamental for quality service environment in the hospitality and tourism industry. The application of service quality in the operational activity will provide clear evidence of guest satisfaction, thus provide the industry with a competitive advantage. The learning and teaching approach for the module will be in flipped classroom-based alongside problem-based learning based; thus, presenting their ideas and thoughts within the group are incorporated. This module is supported by blended-learning and collaborative learning in order to achieve desired goals. The TIMES online platform will be used for providing tutorial notes and lecture slides. Besides, assignments are developed to provide a combination of field-based learning and project-based learning, supporting student's problem-solving skills and elevate thinking capacity. The service quality assessment includes understanding, developing, and executing empirical investigation using the service quality assessment scale. The hotel visitation group project involves hospitality establishment visitation and evaluating service delivery capacity and capability from mystery shopper's aspect of such.

BACHELOR OF INTERNATIONAL TOURISM MANAGEMENT (HONOURS)

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	TOU60304	Data and Media Analysis for Tourism	4	-
2	TOU60904	Sociology of Tourism	4	-
3	TOU61804	Tourism Economics	4	-
4	EVT 60904	Event and Tourism Risk Management	4	-
5	TOU61304	Holistic Approach to Health and Wellness	4	-
6	TOU61704	Destination Geography and Analysis	4	-
7	MPU3143	Bahasa Melayu Komunikasi 2 (Malay Language)	3	-
8	TOU62104	Sustainable Tourism Development	4	-
9	TOU60504	Tourism Business Management	4	-
10	TOU61604	Leisure Attraction Management	4	-
11	TOU60704	Airline and Airport Management	4	-
12	TOU62004	Tourism Integrated Project	4	-
13	EVT61104	Event Sponsorship and Funding	4	-
14	EVT60404	Events Project Management	4	-
15	EVT60604	Events and Entertainment	4	-
16	EVT60704	Conventions and Meetings Management	4	-
17	HOS60704	Beverage Management	4	-
18	HOS62204	Service Quality Management in Hospitality	4	-

Module Name	Module Synopsis
Data and Media Analysis for Tourism	The course's conceptual content focuses on technology in Tourism and hospitality. The use of different media (online and printed) in tourism business, websites, online marketing techniques, e-commerce, innovative methods with which to gather, store, and utilise information on a tourism business's clientele, and how technology can be used to manage and deliver information. These are important in today's rapidly changing and somewhat converged business environment, the content is primarily a platform from which the students will learn skills that will serve them well in their future careers.The learning and teaching approach for the module will be immersive and problem-centred (problem and case-based Learning). Students will be required to provide solutions to the problems and cases given to them. The module is supported by a combination of online lectures and hands-on sessions. Additionally, industry experts will be invited to conduct a workshop and talk to enhance the analytic skills of the students. The main project will be data analytic for tourism enterprises on a small scale. The collected data should be an analysis based on current theories. This assessment help the students to strengthen their critical thinking and analysis skills. Moreover, it helps them to apply theories to practice.
Sociology of Tourism	This module introduces students to the tourism phenomenon from a sociological perspective. Students will be taught the various sociological stances concerning tourist behaviour. Moreover, various research methodologies will be examined and discussed in order to have an in-depth understanding of tourist behaviour. This module also exposes students to the idea that different cultural contexts influence people's behaviour on holiday, which is a crucial concept for students to understand how to manage effectively culturally diverse tourism businesses. The learning and teaching approach for the module will be immersive and problem-centred (problem and case-based Learning). Students will be required to actively participate in fieldworks and online activities designed for them. Additionally, sociologists

	will be invited for giving a talk to enhance the analytic skills of the students. The main project will be a sociological analysis of a destination based on a given theory. Few field works will be provided to give a live example of the current issues in tourism. The assessments will be based on the field trips and theoretical bases.
Tourism Economics	The specifications in tourism economics should encourage students to be inspired, moved and changed by following a broad, coherent, satisfying and worthwhile course of study and gain an insight into related sectors. It should prepare students to make informed decisions. This subject covers issues within microeconomics and macroeconomics. Students will consider the basic economic problem and how it affects the allocation of resources in competitive markets. The subject will cover how price is determined through the forces of demand and supply and how tourism firms compete in the market. The subject also covers the issues firms face: costs, revenues, profits, growth and productivity. It considers the impact that such factors have upon a business operating in a competitive market. Within the macroeconomic specification students will consider three of the main variables in the economy and how these are influenced by government policy. It covers the expenditure and revenue of government, including taxes, and the effects that these have on the economy. The subject will also cover the reasons for tourism international trade, exchange rate including the impacts of changes in the value on tourism activity. Globalization and its implications on tourism sector, at a local, national and global level are discussed.
Event and Tourism Risk Management	This module exposes the students to identify event risk factors inherent to any event and the strategies to manage those risks. It aims to equip students with theoretical insights of managing risk in event and tourism management. It incorporates holistic view of risk management that includes risk identification, assessment, control, prevention and solutions. This module requires students to complete both individual and group formative and summative assessments that are evaluated through the course of fourteen weeks. Pedagogy approach may include the focus on problem-based learning, action learning, and collaborative learning. Online quiz on TIMES will be conducted throughout the semester. A fair division of face-to-face sessions and e-learning discussions relating to the module assessments are prepared. At the end of the semester, it is anticipated that the students will be able to comprehend the essentials of event risk management and ultimately deliver a comprehensive plan to minimise, if not eliminate risk potentials. The module will adopt a personalized and collaborative learning and teaching approach where there will be a mixture of guided learning and project-based learning. Assessment tasks are designed to develop students' capability in comprehending risk management in the context of event and tourism. The tasks evaluates students' knowledge level in communication skills, entrepreneurism and critical thinking. This is delivered in presentation and analyses of case studies in tutorial sessions.
Holistic Approach to Health and Wellness	This module designed to educate and train university students using holistic theories and practicals to understand and reflect upon their general health and wellness. The module uses traditional holistic teachings (e.g. Ayurveda and yoga) to introduce techniques for students to improve and reflect upon their day-to day physical and mental wellness. This module, through the theoretical coupled with practical lessons, gives a foundation for students to use themselves as well as promote health and wellness amongst their peers. The module is an elective, comprises of 12 lectures with practicals introducing the concept of a holistic approach to health and wellness where the students are taught the theories and methods for maintaining a healthy lifestyle as well as reducing and minimising the effects of stress. Students are taught Ayurvedic concepts around the body constitution and impact of diet, and exercise. In tandem with traditional practical methods (e.g. yoga) for working

	with the physical and mental attributes. This serves to guide the students to develop a balanced way of life unique to their individual requirements. The module also serves to provide guidance for students to develop a more disciplined healthy daily routine including the purpose of behavioural and internal self-restraints for body weight management, posture modification, breathing exercises, concentration techniques, mindfulness and relaxation techniques. Throughout the module the students will appreciate the effects of the holistic methods on their health and wellness with the expectation they will continue to use the knowledge in their future undertakings.
Destination Geography and Analysis	This module is designed to give a global understanding of the world geography in terms of their tourism resources and potential. After being introduced to the basis of geography, students will implement their knowledge using geographical tools to draw maps and understand the notion of distance. Emphasis will be placed on the physical layout and characteristics of each region, enabling the students to get familiar with the different resources and the main transport network across continents as well as the leading tourist destinations in each region accordingly. The module identifies the tourist flows within and into the regions, as well as gives an overview of the main tourist attractions in each region. It also identifies the main factors of tourism development of the regions. This module gives the tourism student a basis of understanding of the relationship between tourism and geography. The teaching and learning approach is lecture and tutorial based, where lectures and tasks are given, after which discussions take place in groups. The major project involve the application of geographical knowledge and destination analysis tools to gauge the strengths and weaknesses of a tourism destination. Students will be given immediate feedback on their use of analytical tools in their presentation, which will be a formative assessment of their understanding of each chapter.
Bahasa Melayu Komunikasi 2 (Malay Language)	This module is designed for students to communicate in basic Bahasa Melayu that covers their daily life as international students in Malaysia. When students have the ability to master and communicate in Bahasa Melayu, this will ease their daily communication with local people in any kind of situations. Students are also able to interact, read and understand Bahasa Melayu with ease. In addition to that, students are also able to write a short essay using simple sentences related to their daily life.
Sustainable Tourism Development	The module introduces students to the concepts of sustainable development that can be integrated in tourism business environment. The module will also investigate the fundamental theories of sustainability, the three dimensions of sustainable development; social, economic, and environmental pillars. Another part of the module will emphasize on the development of Sustainable Development Goals (SDGs 2015-2030) within the scope of hospitality and tourism. Various indicators of sustainable tourism development that are used by UNWTO, top tourism destinations, and major tourism organizations to measure sustainability in a particular tourism entity will be also explored. The module will adopt a personalized and collaborative learning and teaching approach where there will be a mixture of guided learning and project-based learning. Students will be guided through online lectures, face-to-face lectures, and tutorials together with a series of online activities that helps to prepare students for the final written assessment. Students are required to conduct online information search to prepare for the face-to-face tutorial sessions and for preparation of assignments and project. The module has an individual assignment and a group project. The assignments require students to evaluate the impacts of sustainable development goals on hospitality and tourism industry. The main project requires students to present the potential

	sustainable practices that tourism organizations can employ towards achieving 17 SDG's.
Tourism Business Management	The module focuses on the roles, responsibilities and functions of tour operators and travel agencies with an overview of the travel and tourism industry. This module comprises both of theoretical and hands on components that will equip students with relevant skills and techniques to address, advise as well as sell appropriate tourism products according to the needs to tourists. Students will identify and apply methods in preparing, planning and organizing tour and travel itineraries. They will also learn how to handle different groups of tourists during a tour in terms of learning and applying tour guiding skills. Authentic, Case-based, collaborative, problem-based, reciprocal and blended learnings will be applied throughout the module. Intrapersonal skills will be developed though this module as required them to organize a domestic trip. This allow students to acquire tour operating skills and techniques to manage tourists, create appropriate tour packages, planning the arrival of tourists and handling them during their stay at the destination and optimize guest's satisfaction by understanding the needs and wants of tourists.
Leisure Attraction Management	This module will equip students with the knowledge of spa, wellness, theme parks, nature, cultural, heritage, and leisure tourism in terms of recognising the different socio-cultural, geographical, economic, legal, environmental, organisational, technical as well as managerial aspects of nature, leisure-based tourism. This module exposes students to the theoretical and practical applications of the spa, wellness, theme parks, nature, culture, heritage and leisure as a recreational activity and business. It will cover the roles and functions of different tourism players in leisure tourism businesses, market segments and tourist behaviour, leisure-based products, leisure, cultural and heritage attractions, supplementary activities and success and failure of leisure attractions. The learning and teaching approach for the module will cover both theoretical and practical techniques which focuses on authentic learning (learning process through real-life situation and application of knowledge), collaborative learning (learning through teamwork), discovery learning (learning through problem-solving technique and experiences) and blended learning (a combination of both face- to- face and online learning). Guest speaker and video clips on leisure-related tourism also will be used as additional learning tools during lecture sessions to stimulate thought and discussion. There are regular review and feedback sessions leading to the classroom activities, individual and group projects to assess progress and alignment to the learning outcomes concerning the brief. The e-Learning or online learning approach will be conducted via various online platforms. Students can access to all learning materials, pre-recorded videos and tutorial or practical questions through these learning platforms. Students will be assessed on their knowledge and the synthesis of knowledge through short answer questions, assignments and/or projects and case study. Besides enhancing lifelong learning, the module also helps to develop the students' communication, problem-solving, social competencies, and personal competencies.
Airline and Airport Management	This module will introduce students to the fundamental knowledge of airport management and operations of global airlines. The teaching and learning approach used in this module includes lecture, discussion, use of videos on airline and airport operations that stimulate thought and discussion. Case studies will be discussed in class to engage students to think strategically and expose students to real-life practices of the commercial aviation industry. The lectures for this module will be delivered online via recordings for asynchronous learning. Tutorial sessions will be held to facilitate discussions and activities to enhance learning and understanding, as well as to develop critical thinking and communication skills. Students are expected to learn

	independently outside of class by doing their readings and research for tutorial sessions. Students will be assessed on their knowledge and the synthesis of knowledge through MCQ, short answer questions, and/or discussion questions. They will also be assessed on their ability to think critically and creatively in proposing possible solutions to problems faced by airlines. Apart from that, they will be tested on their ability to communicate ideas clearly and precisely in an engaging manner to the stakeholders.
Tourism Integrated Project	The module equips students with a practical part in tourism management. The module is designed to provide students with an opportunity to synthesize theoretical knowledge gained from various fields in tourism studies and to apply them in a practical environment. Students are free to select any project that in relevant to the industry. The project will expose students to the steps involved in project management. The project is carried out in three stages: pre-during-post. Each stage has different requirement and must be completed within a stipulated time frame. This module will require the students to have good teamwork, dynamic and collaborative based on the application of the management process. The learning and teaching approach for the module will cover both theoretical and practical techniques which focuses on authentic learning (learning process through real-life situation and application of knowledge), collaborative learning (learning through teamwork), discovery learning (learning through problem-solving technique and experiences) and blended learning (a combination of both face- to- face and online learning). There are regular review and feedback sessions leading to the classroom activities and group assignments to assess and alignment to the learning outcomes concerning the brief. The e-Learning or online learning approach will be conducted via various online platforms. Students can access to all learning materials, pre-recorded videos and tutorial or practical questions through these learning platforms. Students will be assessed on their knowledge and the synthesis of knowledge through progress assignments and presentation.
Event Sponsorship and Funding	The module introduces students to the various elements of sponsorship and fundraising related to the event industry. The module covers the importance of sponsorship as well as how sponsors can benefit from sponsorship. In addition, the module looks into the steps in preparing a sponsorship package and ways in developing a fundraising plan. The teaching and learning approach for this module focuses on student centered learning approach together with project based learning, where students will have to search for necessary information for the project and assignments. Throughout the semester, there will be a mixture of face to face and online guided learning through online lectures and tutorial. The assessment approach will be based on formative as well as summative approaches. Students will have to prepare a sponsorship proposal and fundraising plan where formative feedback will be provided during tutorial sessions and online consultations. In addition, there will be opportunity to approach potential sponsors for an assigned event.
Events Project Management	This module will equip students with the skills and tools in event planning. It will focus on the development of an event proposal that covers the elements of planning, management, finance, operation, marketing, and sponsorship. In order to prepare the event proposal, students are required to negotiate with potential stakeholders, conduct a site inspection and some research based on the proposed event. Students will be advised to take into consideration the recommendation and opinion given by potential stakeholders. By doing so, students will be required to conduct a feasibility study, which is an analysis of

	the viability of an event idea. This analysis will help the students to answer essential questions related to their proposed event. Another part of this module will cover the communication skills that will be developed during a bidding session pertaining to the proposed event idea. The teaching and learning approach that will be used for this module mostly cover guided learning and project-based learning. Apart from that, students will be given an exercise pertaining to the real issue that has happened in the industry. This initiative will help students to have greater skills of analysis and synthesis that is applicable in the event industry.
Events and Entertainment	The module introduces students to the events and entertainment industries, which covers a general aspect on the development of the events industry and the types of events available within the industry. The module will also look into the structure of the events industry and the relationship between events management and education as well as the various theories involved in events management. Another part of the module will emphasize on the significance on entertainment for events, entertainment management and music licensing. The module will adopt a personalized and collaborative learning and teaching approach where there will be a mixture of guided learning and project-based learning. Students will be guided through online lectures, face-to-face lectures and tutorials together with a series of online activities that helps to prepare students for the final written assessment. Students are required to conduct online information search to prepare for the face-to-face tutorial sessions and for preparation of assignments and project. The module has a combination or two group assignments and one group project. The assignments require students to evaluate the impacts of an event and to visit an event to assess the entertainment genre of the event. The main project requires students to present the structure of the event industry, event life cycle and uniqueness of events in an oral and written communication format.
Conventions and Meetings Management	This module emphasises on design and planning of meetings and conventions. Students are introduced to industry developments, key players and their roles, as well as essential components for them to plan and bid for meetings or conventions projects. The teaching and learning approach for the module will incorporate case-based learning, where students will visit a convention to identify issues and propose solutions. Group work will engage students in collaborative learning. Students will also undergo self-directed learning and authentic learning to create a successful proposal and bid by showcasing their entrepreneurial skills. Blended or e-learning lesson delivered through online quiz and games, will offer fundamental and theoretical information on major components in planning conventions or meetings. Online games and quizzes will generate frequent feedback, while face-to-face reviews will be given progressively through presentations and interactive (critique/debate) sessions aligned to learning outcomes. The group assignment will synthesize knowledge and creativity to produce a proposal of professional competence. The proposal shall be presented to an audience of peers or industry experts for critique and feedback as formative assessment.
Beverage Management	This class focuses on the basic understanding of alcoholic and non-alcoholic beverages which is found in the commercial world. Students will learn on classification, processes and identification of these beverages. Understanding the evolution of drinks and the commercialization of the beverage is studied.
Service Quality Management in Hospitality	The module will emphasize on the different concepts and dimensions of service quality management. The module would comprise of the factors that impact service quality in tourism and hospitality-related businesses, the role of service providers, and the method of measuring service quality. The module accentuates the service delivery system of the hospitality industry, which references a particular focus on service quality and other catering on different

	concepts and dimensions of service quality management. The module is expected to provide a detail understanding of service quality management in the hospitality and tourism industry, which is essential as this serves as a fundamental for quality service environment in the hospitality and tourism industry. The application of service quality in the operational activity will provide clear evidence of guest satisfaction, thus provide the industry with a competitive advantage. The learning and teaching approach for the module will be in flipped classroom-based alongside problem-based learning based; thus, presenting their ideas and thoughts within the group are incorporated. This module is supported by blended-learning and collaborative learning in order to achieve desired goals. The TIMES online platform will be used for providing tutorial notes and lecture slides. Besides, assignments are developed to provide a combination of field-based learning and project-based learning, supporting student's problem-solving skills and elevate thinking capacity. The service quality assessment includes understanding, developing, and executing empirical investigation using the service quality assessment scale. The hotel visitation group project involves hospitality establishment visitation and evaluating service delivery capacity and capability from mystery shopper's aspect of such.

SCHOOL OF FOOD STUDIES AND GASTRONOMY

BACHELOR OF SCIENCE (HONOURS) IN CULINOLOGY

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	CUL63204	Food Packaging & Labelling	4	-
2	FSC61004	Food Safety and Quality Management	4	-
3	CUL63304	Aromatic Ingredients & Flavour Application	4	-
4	CUL62004	Sensory Evaluation of Food	4	-
5	CHM61004	Principles of Organic Chemistry	4	-

Module Name	Module Synopsis
Food Packaging & Labelling	This module covers important aspects of food packaging and labelling includes major types of packaging materials, packaging operations and technologies, food-package interactions and standards related to food packaging and labelling. The syllabus is designed to enable students to evaluate the packaging and labelling requirements for different food products and to create the new package prototype. In addition, this module provides the latest information about current issues and trends in food packaging and labelling.
Food Safety and Quality Management	This course embraces the implications of food safety and quality management against the framework of food authenticity and sustainability within an increasingly globalized food industry. Student will gain an in-depth understanding of regional, national, and international standards in regulatory processes, and the role of public institutions and policy makers in delivering safe, quality foods to consumers. In conclusion, student will acquire a knowledge of the design and management of safety and quality management systems based upon risk analysis, e.g. Hazard Analysis and Critical Control Point (HACCP), ISO 9001:2015 and private standards, all designed to meet the requirements of national and international legislation.
Aromatic Ingredients & Flavour Application	To provide an understanding to the origin of food flavors components, extraction methods, legislation and application in foods. Student would be able to apply the knowledge into their creations of food formulations.
Sensory Evaluation of Food	Sensory Evaluation of Food module provides concept of food quality with a particular focus on sensory evaluation elements. Students will expose to sensory techniques used in evaluating characteristics of food and consumer acceptance. This includes sensory perceptions, good sensory practices, a wide range of sensory test methods (discrimination, descriptive, affective test) and skills to design experiment (objective, hypothesis, variables, basic statistics used in sensory evaluation). The opportunity to integrate theory into practice will also be provided to students through practical class and a mini-project.
Principles of Organic Chemistry	The chemistry of organic molecules is an indispensable knowledge of Culinology®. This course emphasizes three main area of organic chemistry; structures and functional groups; mechanisms of chemical reaction; and the macromolecules. The first part prepares the students in the fundamental of basic chemistry. Part two discusses knowledge in the nomenclature of organic compounds through identification of functional groups, chemical reactions and the mechanisms of reactions engaged by different chemical functional groups. The last part re-emphasizes the relevance of organic chemistry to macromolecules of food. This course serves to equip the students with essential knowledge in organic sciences to further apply in the food product development.

BACHELOR OF CULINARY MANAGEMENT (HONOURS)

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	CUL61804	Food Media	4	-
2	CUL62504	Culinary Product Development	4	-
3	CUL62704	Food Safety and Sanitation	4	-
4	CUL62004	Sensory Evaluation of Food	4	-
5	CUL62804	Food Trends and Product Innovation	4	-

Module Name	Module Synopsis
Food Media	Bachelor of Culinary Management brings your passion for the food industry and media together to provide you with the skills necessary to succeed as a food product creator, developer, presenter, advertiser and marketer. In this culinary program, students will develop the skills and tools necessary to advertise and market their own food product or service through a focus on the entrepreneurial use of personalized branding and marketing. Students will also be able to identify the target market audience, design and deliver creative messages and negotiate for the appropriate media product to achieve the desired communication and presentation results. Using their creative skills and food knowledge, graduates will harness the power of the media to deliver messages to attract revenue-generating streams and opportunities. Program graduates will be equipped with the skills to identify and implement entrepreneurial opportunities in a food media -related field such as food image and brand specialist, freelance food writer, marketing specialist, food segment producer, and entertainment and lifestyle professional. To successfully complete the subject students are required to participate in class discussions, read the prescribed reading materials, complete the assigned assignments and attend the lectures
Culinary Product Development	The Module consists of culinary approaches to creating and producing food for RTE (Ready To Eat) operation management. Students will be able to develop own culinary product creation with a marketable and commercial value capacity. At the same time, while developing culinary product creation, the students will be exposed to the operations and management of a cook chilled and cook freeze food production system. Subsequently student will be execute entrepreneurship operation. Students will be exposed to consumer behavioral studies, marketing strategies and influencing how they could start up a food business with own developed product. Students are expected to run a food business at tiffin, with a new concept defined by them. The teaching and learning approach will be in an experiential learning approach. Mode of delivery is lecture, and Practical. The assessment approach is done with the industry standard in producing quality RTE food.
Food Safety and Sanitation	This module aimed at providing a fundamental of food microbiology, food borne illnesses, personal hygiene, safe food handling, kitchen safety, sanitation practices, sanitary design principles for facilities and equipment, food handlers' hygiene practices and correct procedures for cleaning and sanitizing in culinary management and hospitality management. The module learning outcome include demonstrating good hygiene practices regarding food handling and food preparations. Additionally, student will learn to apply proper cleaning and sanitizing steps in food preparations environment according to food safety standard. In conclusion, the module introduces the scientific principles behind food safety and sanitation practices as well as practical and effective methods students can implement in future food premises to assure safe foods for public health. Besides the inter-classroom

	teaching, students will be engaging in their own learning through knowledge from teaching materials such as, lectures notes, videos, and self -directed learning. Student also learn through different platform which included blended and e-learning via TIMes portal, eg. REWINDs. The assessment approaches are divided between summative and formative assessment based on the individual and group assignment. In summary, the module will be directed via personalised and collaborative learning and teaching approaches which focus on guided and self-directed learning. On the other hand, this module also incorporates immersive and problem centred learning and teaching approaches which drive by problem-based learning and case-based learning.
Sensory Evaluation of Food	Sensory Evaluation of Food module provides an overview of sensory science, including some human senses and how they are used in food sensory evaluation practices. Students will expose to various sensory analytical techniques used in evaluating characteristics of food and consumer acceptance. Interactive lectures and guided readings are used to facilitate communication between lecturer and students, and also to enhance students in comprehending the taught topics. Tutorials are designed to assist students to re-think the previous learning process for consolidating the key concepts. Hands-on practical sessions are used to supplement the lectures and to develop students' practical proficiency. The knowledge and skills obtained in this module equip students with a sound knowledge and skills to carry out relevant sensory evaluation of foods as well as the ability to discuss individual differences in perception. Students will be graded through their sensory lab test, sensory report writing, reflective writing and fi nal examination assessment tasks. Several formative assessments activities (quizzes, oral questioning, one-minute paper, self-assessment, hand in, pass out etc) will be carried out to build students' confidence, expectations and accelerate their achievements.
Food Trends and Product Innovation	The Module consists of Culinary and Food Trends relevant to the current Industry practices. The element of food product innovation is essential in developing future culinary innovators and enhancing the diversity of knowledge in food production automation for the future culinary managers. Students will learn the managerial approaches in an Innovation Team while developing innovative food product. The teaching and learning approach will be in an experiential learning approach. Mode of delivery is lecture, and Practical. The assessment approach is done with the industry standard in mind in producing innovative food product. The module will provide an integrated platform for students to Innovate culinary products suitable for current and future customer needs with focus on current and future culinary management issues related to the international food Industry.

BACHELOR OF PATISSERIE ARTS (HONOURS)

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	CUL62504	Culinary Product Development	4	-
2	CUL62704	Food Safety and Sanitation	4	-
3	CUL62004	Sensory Evaluation of Food	4	-
4	CUL64304	Asian Patisserie and Desserts	4	-

Module Name	Module Synopsis
Culinary Product Development	The Module consists of culinary approaches to creating and producing food for RTE (Ready To Eat) operation management. Students will be able to develop own culinary product creation with a marketable and commercial value capacity. At the same time, while developing culinary product creation, the students will be exposed to the operations and management of a cook chilled and cook freeze food production system. Subsequently student will be execute entrepreneurship operation. Students will be exposed to consumer behavioral studies, marketing strategies and influencing how they could start up a food business with own developed product. Students are expected to run a food business at tiffin, with a new concept defined by them. The teaching and learning approach will be in an experiential learning approach. Mode of delivery is lecture, and Practical. The assessment approach is done with the industry standard in producing quality RTE food.
Food Safety and Sanitation	This module aimed at providing a fundamental of food microbiology, food borne illnesses, personal hygiene, safe food handling, kitchen safety, sanitation practices, sanitary design principles for facilities and equipment, food handlers' hygiene practices and correct procedures for cleaning and sanitizing in culinary management and hospitality management. The module learning outcome include demonstrating good hygiene practices regarding food handling and food preparations. Additionally, student will learn to apply proper cleaning and sanitizing steps in food preparations environment according to food safety standard. In conclusion, the module introduces the scientific principles behind food safety and sanitation practices as well as practical and effective methods students can implement in future food premises to assure safe foods for public health. Besides the inter-classroom teaching, students will be engaging in their own learning through knowledge from teaching materials such as, lectures notes, videos, and self -directed learning. Student also learn through different platform which included blended and e-learning via TIMes portal, eg. REWINDs. The assessment approaches are divided between summative and formative assessment based on the individual and group assignment. In summary, the module will be directed via personalised and collaborative learning and teaching approaches which focus on guided and self-directed learning. On the other hand, this module also incorporates immersive and problem centred learning and teaching approaches which drive by problem-based learning and case-based learning.
Sensory Evaluation of Food	Sensory Evaluation of Food module provides an overview of sensory science, including some human senses and how they are used in food sensory evaluation practices. Students will expose to various sensory analytical techniques used in evaluating characteristics of food and consumer acceptance. Interactive lectures and guided readings are used to facilitate communication between lecturer and students, and also to enhance students in comprehending the taught topics. Tutorials are designed to assist students to re-think the previous learning process for consolidating the key concepts. Hands-on practical sessions are used to supplement the lectures and to

	develop students' practical proficiency. The knowledge and skills obtained in this module equip students with a sound knowledge and skills to carry out relevant sensory evaluation of foods as well as the ability to discuss individual differences in perception. Students will be graded through their sensory lab test, sensory report writing, reflective writing and final examination assessment tasks. Several formative assessments activities (quizzes, oral questioning, one-minute paper, self-assessment, hand in, pass out etc) will be carried out to build students' confidence, expectations and accelerate their achievements.
Asian Patisserie and Desserts	This module is an overview of the dessert and bread of throughout Asian continents focusing on South East Asian Countries. Emphasizing on the use of native ingredients and cooking techniques which define the originality of traditional recipes such as Malay, Chinese, Indian, Baba and Nyonya, etc.

SCHOOL OF LIBERAL ARTS & SOCIAL SCIENCES

BACHELOR OF PSYCHOLOGY (HONOURS)

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	PSY60204	Introduction to Psychology	4	-
2	PSY60304	Human Personality	4	-
3	PSY60404	Learning and Motivation	4	-
4	PSY60504	Biological Psychology	4	-
5	PSY60604	Development Psychology	4	-
6	PSY60704	Abnormal Psychology	4	PSY60304 PSY60204
7	PSY60804	Social Psychology	4	-
8	PSY61104	Cognitive Psychology	4	PSY62104
9	PSY61204	Psychological Tests and Measurements	4	-
10	PSY61604	Qualitative Methods	4	PSY60204 PSY62104
11	PSY61804	Cross-Cultural Psychology	4	-
13	PSY62204	Cyberpsychology	4	PSY60404 PSY60204
14	PSY62304	Philosophy and Theories of Psychotherapy	4	-
15	STA60404	Quantitative Methods 1	4	PSY60204 PSY62104
16	STA60504	Quantitative Methods 2	4	STA60404

Module Name	Module Synopsis
Introduction to Psychology	The module is designed to provide the students with an understanding of the basic concepts and general theoretical approaches of Psychology. It provides an informative background to the scientific study of human behaviour and mental processes.The learning and teaching approach for the module is a mixture of authentic and collaborative learning and teaching. These approaches allow the students to reflect the way knowledge will be used in real life, construct knowledge collaboratively, coach each other, and able to self-evaluate and self-reflect. Under the guided learning, teacher is proactive in facilitating learning for student needs, and involves motivating and guiding students to their learning outcomes.
Human Personality	The subject is designed to provide the students with an understanding of human personality. It will provide an informative background to the study of varying personality types in individuals and groups. The topics outlined will incorporate a broad conceptual framework of psychology and illustrative examples will be covered to provide key important analyses. Students will be given formative and summative assessments throughout the semester.
Learning and Motivation	The module is designed to provide students with an understanding of the principles of learning and motivation. Students will be exposed to the scientific study of learning and motivation from the various perspectives of the biopsychosocial model such as behaviorist perspective, cognitive perspective, social cognitivist perspective and biological perspective. This module will undertake the guided learning pedagogy with differentiated instruction strategy. Students also will be facilitated towards self-directed learning with weekly tutorial sessions where students will need to plan, engage in group discussions and present their ideas and thoughts

	after. The module is taught by a combination of face to face and online classes. By the end of the semester, students are expected to exhibit sound understanding of the subject matter and utilise the learned theories and concepts to develop strategies to overcome learning issues. These will be assessed using both formative assessment through project, presentation and reflective writing and summative assessment through the final examination.
Biological Psychology	The module is designed to provide the students with an understanding of Biological Psychology. It provides a broad conceptual framework of the brain structures, functions, and how the brain activities influence human behaviours. The learning and teaching approach for the module is a mixture of authentic and collaborative learning and teaching. These approaches allow the students to reflect the way knowledge will be used in real life. In addition, under the guided learning, teacher is proactive in facilitating learning for student needs, and involves motivating and guiding students to their learning outcomes, allowing students to construct knowledge collaboratively, coach each other, and to self-evaluate and self-reflect.
Developmental Psychology	This module is designed to introduce students the milestones of human development from conception to death. Students will learn theories of human development and be exposed to various research of Developmental Psychology. Students will eventually describe the physical, cognitive, and social growth of people with special attention to various cultural contexts of development and the rich diversity of individuals. The teaching and learning approach will be through the use of lectures, tutorials, case studies and field trips, coupled with directed and independent learning. Students are expected to integrate their personal experiences, knowledge of developmental psychology, and their observations of human development with the content of this module. In addition, discussions of the implications of parenting, education, and social policy-making will be carried out throughout the semester, so that they can apply course information into problems meaningfully.
Abnormal Psychology	The subject is designed to provide students with an understanding of abnormal psychology. It will provide an integrative understanding of the biological and psychological processes of mental disorders. A general overview of the interactions of human beings with their physical and social environments will be covered. The topics outlined will incorporate a broad conceptual framework of abnormal psychology and illustrative examples of psychological disorders. The learning and teaching approach for the module will be guided learning, problem-based, and case-based learning. The module is supported by a combination of face-to-face lectures and tutorials, and online activities. These approaches allow the students to reflect the way knowledge will be used in real life, able to evaluate and reflect, collaborate in decision making and problem solving, and understand how to engage in using strategic and deep approaches to learning as opposed to superficial approaches. It offers opportunities to perform research studies and encourage applications of concepts and theories.
Social Psychology	Social psychology is the scientific study of how people's thoughts, feelings and behaviors are influenced by the actual, imagined, or implied presence of others. This module introduces basic concepts, theories and research in Social Psychology. The learning and teaching approach for this module is a mixture of authentic, collaborative and project-based learning. These approaches would allow the students to reflect the way knowledge is applicable in real life as well as would enable

	them to conduct self-evaluation and self-reflection. . Students will be able to discuss social psychological issues and apply their knowledge through individual and group assignments which focus on meaningful, realistic, intriguing, and relevant topics. In addition, the assignments will provide opportunities for students to perform research and encourage applications of concepts and theories on everyday life issues. Social psychologists are interested in all aspects of personality and social interaction, exploring the influence of interpersonal and group relationships on human behaviors. Hence, this module will enable students to apply the content learnt, in order to improve their rational thinking, problem solving and decision making in everyday life.
Cognitive Psychology	The module is designed to provide the students with an understanding of cognitive development, its mechanisms and processes. It provides an informative background to the study of human mental processes or cognition. The learning and teaching approach for the module is a mixture of authentic, collaborative learning and teaching among learners and facilitator, and project-based learning. These approaches allow the students to reflect the way knowledge will be used in real life, able to self-evaluate and self-reflect, collaborate in decision making and problem solving, and understand how to engage in using strategic and deep approaches to learning as opposed to superficial approaches. They need to be able to apply their knowledge to new situations, together with the project-based learning which focuses on meaningful activity in realistic, intriguing, relevant learning occurs through participation in a challenging and motivating project. It offers opportunities to perform research studies and encourage applications of concepts and theories.
Psychological Tests and Measurements	This subject introduces students to basic measurement issues in assessment of individual differences. Students will learn to critically evaluate the psychometric properties and utilities of tests. Students will also learn about basic psychometric theories and relevant key concepts. The learning and teaching approach for the module will be guided learning, problem-based, and case-based learning. The module is supported by a combination of face-to-face lectures and tutorials, and online activities.
Qualitative Methods	The goal of the module is to introduce the basic concepts and philosophical paradigms of the qualitative research design in Psychology. The module will look into the various approaches in qualitative research, taking into account the validity, rationale and ethical considerations of each. Students will learn on how to conduct and analyse qualitative psychological research.
Cross-Cultural Psychology	This module is designed to equip students with contemporary theory and research on cross-cultural psychology and the methodological challenges faced when bringing a cultural level of analysis to human behaviour. It will provide a general overview of basic and complex psychological processes in the cross-cultural context. The topics outlined will incorporate research findings, theoretical framework and application based on these developments and illustrative examples will be covered to provide key concepts. Guided learning is the main approach of this module.
Cyberpsychology	The subject is designed to provide the students with an understanding of cyberpsychology, which involves examining the human-technology interaction. Students will be exposed to the theories and concepts used in cyberpsychology to understand human-technology interaction. The topics outlined will incorporate research findings and its applications, and theoretical frameworks of cyberpsychology. Guided learning and self-directed learning will be the main approach of this module, where the teacher is proactive in facilitating learning for student needs. It involves

	motivating and guiding students to their learning outcomes. Guided learning provides opportunity for differentiated instruction. Learning occurs in online sessions throughout the semester with certain face-to-face opportunities constantly available on/off campus (or outside the classroom). As part of the module's assessments, students are required to exercise their understanding on cyberpsychology by selecting and analysing the interaction of technology usage and psychological functioning or concepts. Students will be given formative and summative assessments throughout the semester.
Philosophy and Theories of Psychotherapy	This module will provide the students the opportunity to explore the theories and techniques of the major approaches to psychotherapy. It will provide a critical examination of these theories from a variety of perspectives. After successful completion of this course, students should have a basic knowledge of the theories and techniques of major psychotherapy approaches, an awareness of ethical issues associated with the field, an understanding of the different critiques that have been directed at mainstream therapeutic approaches, and a growing awareness of one's self and one's own therapeutic philosophy.
Quantitative Methods 1	The goal of this module is to introduce basic concepts and scientific methodologies in psychology. The module will look into the various designs of scientific research conducted in psychology whilst taking into account the validity, rationale and ethical considerations of each. Students will learn on how to conduct and evaluate psychological research. Emphasis will be placed on understanding traditional research methods, applying sound experimental techniques in order to produce interpretable and reproducible results, and evaluating published scientific claims. The pedagogy undertaken for this module is guided learning and and self-directed learning to strengthen student's foundation in research. The learning and teaching approach for the module will be lecture-based, with weekly tutorial sessions where students will engage in group discussions and present their ideas and thoughts. The module is taught by a combination of face to face and online classes. By the end of the semester, students are expected to know how to evaluate a research paper and develop a sound research proposal.
Quantitative Methods 2	This course introduces concepts and procedures related to the measurement and analysis of psychological variables. The main goal of this course is for students to understand the data of psychology and the appropriate selection and use of statistical tools to describe and evaluate results of psychological research. This course will also prepare you to understand research results presented in Psychology courses and to participate in research projects. The pedagogy undertaken for this module is guided learning and self-directed learning to strengthen student's foundation in research. The Learning and teaching approach for the module will be lecture-based, with weekly tutorial and consultation sessions where students will experience using data analysis software to analyse raw data and interpret it. The module is taught by a combination of face to face and online classes. By the end of the semester, students are expected to be able to identify accurately which type of analysis to use for a given research question. Students will also engage in data collection and analysis. These assessments will enable students to develop analytical and organizational skills along with the ability to present information coherently and accurately.

BACHELOR OF PERFORMING ARTS (HONOURS)

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	VSA63904	Introduction to Acting	4	-
2	VSA62304	Fundamentals of Choir Performance	4	-
3	VSA62404	Fundamentals Mechanics of Filmmaking	4	-
4	LAS60304	Introduction to Dance and Creative Processes	4	-
5	LAS60704	Introduction to Creative Writing	4	-

Module Name	Module Synopsis
Introduction to Acting	This module introduces the fundamentals of acting for the stage, screen and as a foundation to write academically on the subject. Students will be introduced to the main components of acting; the body, voice and speech, and text analysis. At the end of the course, students should be able to utilize acting fundamentals for practical work on stage or screen. They should also be able to analyse and comment on stage and screen performances, orally and in writing. The students in this module will be assessed on their on-going practical assessments, and a final written report on a selected stage/ screen performance.
Fundamentals of Choir Performance	In this module students will demonstrate proficiency reading music using standard notation and performing pieces that illustrate a variety of genres, skills, and techniques including augmentation and diminution, pitch, meter, rhythm, tone, expression and dynamics, and articulation and diction. Students will also explore musical samples via listening to enhance the ability to identify and describe elements in music specifically. Audio and Video materials are accessible via TIMeS where students are encouraged to apply self-learning activities. Flip classroom are widely applied in this module to utilise learning times in class where practical activities will be conducted with face-to-face guidance by the lecturer. Students will be assessed through a variety of methods including writing assignment, online quizzes, group performance and practical tasks in clas as well as online. The learning and teaching approach will utilise teacher demonstration of singing techniques, which students will explore individually, and in groups. This free elective modules does not required pre requisite module of prior knowledge in music, hence students are required to apply self-learning method and strategy throughout this course.
Fundamentals Mechanics of Filmmaking	In this module students will be introduced to the world of filmmaking from the foundational standpoints which revolves around the basics of film history, genre, and technique. This in turn will give them a wider perspective into the world of performing arts and enrich them with the skillsets of critical and creative thinking, understanding the basic connection between film and the culture that produced it and have a basic working knowledge of critical theory. Students will be assessed through group presentations and a short film production.
Introduction to Dance and Creative Processes	The Introduction to Dance and Creative Processes is a practical module to introduce students to the basic skills of dance. Students will experience and explore in practical dance classes ranging from western dance disciplines of ballet, contemporary dance, jazz dance, to the diverse Malaysian cultural dances; rehearsal, performing skill, dance composition and it's relation to other artistic disciplines.

	This practical course will focus on nurturing confidence, concentration, creativity, ensemble collaboration, physicality, rehearsal skills, sensory and public performance ability. Students will be assessed through a variety of methods including studio works, group presentation and reflective journal. The learning and teaching approach will utilise teacher demonstration of dancing techniques which students will explore individually, with partners and in groups.
Introduction to Creative Writing	Introduction to Creative Writing is a writing workshop. This module involved writing, editing, revising, critical reading and critical discourse and discussion. Students will work independently on their writing, but are expected to read and discuss their work with their fellow students. Students will develop the confidence in writing their own and be able to be discerning enough to be critical of others' work in a way that is constructive and beneficial to their own writing as well. The lecturer's role is to facilitate as well as teach students the skills and discipline of writing.

SCHOOL OF EDUCATION

BACHELOR OF EDUCATION (HONOURS)

Common Core

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	EDU60704	Philosophy and Curriculum Design	4	-
2	EDU60904	Learning, Assessment and Feedback	4	-
3	RES61204	The Reflective Practitioner: Teachers Investigate Their Work	4	-

Primary Education Specialisation

No	Module Code	Module Name	Credit Hours	Pre-Requisite
1	EDE60304	Teaching Language Arts	4 Credits	-
2	EDM60204	Measurement and Geometry	4 Credits	-
3	EDS60204	Science - Energy and Interactions	4 Credits	-
4	EDS60304	Nature of Science	4 Credits	-

Module Name	Module Synopsis
Philosophy and Curriculum Design	This module examines some major philosophical ideas that influence primary school education. These ideas extend from the Western secular tradition to Eastern perspectives. Looking through the lens of these ideas, questions such as “What is education?”, “What does it mean to be an “educated” person?”, “What factors distinguish a “good” from a “bad education?” and a few others will be explored. One key intent is to enable the students to develop a personal educational philosophy. Another is to set the stage for exploring the notion of curriculum and ultimately figure out its design in a deep way. One important purpose for doing this is to enable students to have a firm grasp of what a school curriculum is all about, in particular its centrality in shaping student learning. Towards this end, the course will also discuss the various meanings of curriculum, its foundations, the approaches to curriculum, design principles and the widely used models used in designing it as well as the standards that have been employed to benchmark and judge its quality. To illustrate with a real-world example, one example of a curriculum in use will also be analysed. The teaching approach will focus on personalised and collaborative learning and teaching with emphasis given to guided learning approach. This module is delivered via face-to-face, online and blended learning modes.
Learning, Assessment and Feedback	The course focuses on the relationship between learning, assessment and feedback. It will first explore the nature learning, the major theories advanced to account for how it happens and the domains involved. The analysis will then be linked to assessment, subsequently extended to include the principles, standards, procedures and practice of good assessment. In the mix too will be the key assessment concepts and the pivotal issues of validity, reliability, fairness and usability, and the critical roles played by assessment in supporting, enhancing and sustaining learning. The role dimension will then become the springboard to explore the different approaches to assessment –

	of, for and as learning – and their connections to effective learning and teaching. Also in connection with role dimension, the course will also focus on the critical roles of feedback, the importance of diversity of assessment processes and instruments (vis-à-vis traditional and alternative assessment), transparency and explicitness of assessment criteria and scoring as well as contemporary issues in assessment. The teaching approach will focus on personalised and collaborative learning and teaching with emphasis given to guided learning approach. This module is delivered via face-to-face, online and blended learning modes.
The Reflective Practitioner: Teachers Investigate Their Work	This is the first of the two modules that focuses on research on teaching and learning practices. Students will be introduced to action research design and practice and learn a range of research methods to develop their capacity to conduct small-scale action research to address a problem in a teaching context. Having this capacity will enable the students to systematically examine and gain deeper insights into the complexity of teaching and learning, and develop as reflective practitioners and researchers. Topics that will be covered in this module include the selection, framing and justification of a research problem, review of literature, different methods used in research, the process of data collection and analysis, developing and writing a research proposal, and ethical issues in action research. Students will get to be involved in self-directed, project-based and collaborative learning. This module is delivered via face-to-face, online and blended learning modes, where students get to work independently and also in groups.
Teaching Language Arts	This module introduces students to incorporating language arts in teaching English Language in primary schools. Integrating the language arts means that the elements of literacy are developed and taught with a set of common experiences and using pieces of authentic literature. It exposes students to the aims of integrating the language arts in primary school English Language. It also analyses how the learning environment, that is, the classroom is organised based on the different genres of language arts. Students will learn the criteria for selecting fiction and non-fiction in relation to prose, poetry, drama, songs and biographies for the English Language classroom. Students will also learn to design activities and assessment tasks based on genres related to the language arts. This module is delivered via face-to-face, online and blended learning modes.
Measurement and Geometry	This module introduces students to measurement and geometry in primary school mathematics. It exposes students to the aims of teaching measurement and geometry in primary school mathematics, the key ideas and concepts in measurement and geometry at primary level, and the notion of geometrical thinking. It also analyses the organisation of contents in measurement and geometry in the primary mathematics curriculum and research on the learning of measurement and geometry at the primary level. Students will also learn how to solve and design problems related to measurement and geometry at primary level taking into consideration the mathematical thinking and processes involved in the context of learning to be competent at teaching measurement and geometry in primary school. This module is delivered via face-to-face, online, and blended learning modes. Lectures, tutorials, discussions and independent learning modes will be used to facilitate discussions. Both guided (synchronous and asynchronous) sessions will be offered to ensure optimal engagement and learning opportunities.

Science - Energy and Interactions	This module introduces students to the themes of energy, forces and interactions in the primary science subject. It exposes students to the aims of teaching energy, forces and interactions in primary school and what are energy, forces and interactions at primary level. It also discusses the organization of energy, forces and interactions in primary science curriculum and research on the learning of these three themes at primary level. Students will also learn how to solve problems related to energy, forces and interactions at primary level to be competent at teaching them in primary school. This module is delivered via face-to-face, online, and blended learning modes. Lectures, tutorials, consultation sessions and independent learning are conducted to facilitate student learning. Students will also be supported with resources such as research articles and technological tools. Students will be assessed in terms of domain knowledge and 21st century skills, including communication and collaborative skills.
Nature of Science	This module introduces students to the nature of science and its importance to be literate in science. It also exposes students to the stands of philosophers about the scientific inquiry and the scientific enterprise. Students will analyse the nature of science in the context of primary science education standards and the role of teachers in imparting the sound understanding on nature of science to their future students will also be discussed. This module will also expose the students to the prevalent misconceptions on the nature of science so that they can be competent at teaching science in school. This module will be conducted 100% online, including but not limited to Google Classroom as the learning management system. Synchronous lectures, tutorials, discussions and independent learning modes will be used to facilitate discussions. Both guided (synchronous and asynchronous) sessions will be offered to ensure optimal engagement. The assessments of this course focus on students' critical and reflective thinking.