

**CURRICULUM STRUCTURE FOR
FOUNDATION IN SCIENCE AND TECHNOLOGY
UNIVERSITI MALAYSIA PAHANG**

Semester	Code	Course	Classification	Credit	Total Credit
1	UHP1013	Preparatory English	Common Core	3	15
	UQF1012	Talent Management	Common Core	2	
	FSM1015	Fundamental Mathematics	Core	5	
	FSP1015	Mechanics Physics	Core	5	
2	UHD1013/ UHC1013	Deutsch 1 or Mandarin 1	Common Core	3	18
	FSM1025	Essential Engineering Mathematics	Specialization	5	
	FSP1025	Electromagnetic Physics	Specialization	5	
	FSC1015	General Chemistry 1	Core	5	
3	UHD1023 /UHC1023	Deutsch 2 or Mandarin 2	Common Core	3	17
	UHK1012	Intercultural Communication	Common Core	2	
	FSD1012	Basics of Data Science	Specialization	2	
	FSC1025	General Chemistry 2	Core	5	
	FSK1015	ICT Programming and Logic Essentials	Common Core	5	
Total Credit					50

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO1	Students will be able to apply basic knowledge in science, technology, engineering and mathematics.
PEO2	Students will be able to do basic practical skills to solve related problems.
PEO3	Students will be able to integrate affective values in life

PROGRAMME LEARNING OUTCOMES (PLO)

PLO1	Utilize facts to describe and discuss concepts, principles and processes in a specific field of study.
PLO2	Apply fundamental principles in the field of study to identify and solve problems.
PLO3	Conduct academic activities such as collect, analyze, organize and process data/information to make conclusions individually or in groups.
PLO4	Communicate effectively, orally and in writing.
PLO5	Utilize basic digital technology applications to seek and process data related to a specific field of study.
PLO6	Search, interpret and use relevant information to pursue lifelong learning independently.

COURSE SYNOPSIS

UHP1013

PREPARATORY ENGLISH

The course primarily aims to equip students with enhanced communicative performance in academic settings. They will be exposed to listening and comprehending main points and supporting details on both concrete and abstract topics, particularly related to personal or professional interest when the delivery is clear. Additionally, students will be trained to discuss, offer suggestions to support ideas and evaluate opinions on challenging yet familiar topics. They will also be taught to write clear, straightforward texts. This course is defined within the CEFR high B1 to low B2 level.

UQF1012

Talent Management

This course aims to develop students who are able to apply soft skills in terms of basic practical skills, communication, life-long learning in order to promote a positive attitude and moral values. The course is implemented through students' involvement in faculty courses including activities, practices or tasks comprising of sports and games, clubs and societies, as well as uniform body.

UHD1013

Deutsch 1

This course enables the students to understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type. Students can introduce themselves and others and can ask and answer questions about personal details such as where they live, people they know and things they have. The students can interact in a simple way provided the other person talks slowly and clearly and is prepared to help.

UHC1013

Mandarin 1

This course aims to enable students to develop basic conversational skills in daily life about topics such as simple expressions in greeting, saying good-bye, expressing gratitude and making apologies, etc. Based on the syllabus of Chinese Proficiency Test, Hanyu Shuiping Kaoshi (HSK) Level 1, the students will learn Chinese Phonetics (Hanyu Pinyin System), 150 vocabularies and several Mandarin grammatical structures. Classroom

activities and assessment methods will include listening, speaking, reading and writing. The course is defined within the Common European Framework of References for Languages (CEFR) low-A1 to intermediate A1 or HSK Level 1.

UHD1023

Deutsch 2

This course enables the students to understand simple sentences and frequently used expressions related to daily practices (e.g. very basic personal and family information, shopping, local geography, employment, travelling, festivals, clothing, and German culture). The students can communicate in simple sentences and execute routine tasks requiring a simple and direct exchange of information on familiar matters. They can describe aspects of their background, immediate environment and matters in areas of immediate need in basic terms.

UHC1023

Mandarin 2

This course aims to enable students to develop conversational skills in a culturally appropriate manner about topics such as daily life, various information, education, working life, culture, personal emotion and experience expression. Based on the syllabus of Chinese Proficiency Test, Hanyu Shuiping Kaoshi (HSK) Level 2, the students will continue to practice the use of Chinese Phonetics (Hanyu Pinyin System). Students will learn stress of Chinese pronunciation, 300 vocabularies and frequently used Mandarin grammatical structures. Classroom activities and assessment methods will include listening, speaking, reading and writing. The course is defined within the Common European Framework of References for Languages (CEFR) intermediate A1 to low A2 or HSK Level 2.

UHK1012

Intercultural Communication

This course aims to develop student's communicative competence in spoken production and interaction with the purpose of improving their ability to interact with others in their personal and professional lives. The course begins with a focus on small talk topics such as day to day topics to enhance interpersonal communication and professional relationships. The course will also emphasis significant intercultural and

global topics such as world politics, climate change, national policy and educational reform to build students confidence for improved intrapersonal, interpersonal and intercultural communication.

FSM1015

Fundamental Mathematics

This course is designed to develop students' confidence with mathematical concepts and relationships and use of mathematics and techniques in a range of contexts specifically problem solving and abstract thinking. Topics covered are numbers, functions and polynomials, sequence and series, matrices, vector, limits and differentiation.

FSP1015

MECHANICS PHYSICS

The course covers the foundations of physics in which includes topics on units and measurements; kinematics in one dimension and two dimensions; dynamics; work and energy; linear momentum; circular motion; statics and torques; periodic motion and waves; deformation of solids; heat and thermodynamics.

FSM1025

ESSENTIAL ENGINEERING MATHEMATICS

This course will enable students to study the basic concepts of calculus and statistics. Topics include integrals, application of integration, differential equations, introduction to statistics and probability, random variables and statistical distributions with a strong emphasis on engineering application.

FSP1025

ELECTROMAGNETIC PHYSICS

The course covers the foundations of physics which includes topics on electric charges and forces; electric fields and potential; magnetic fields and forces; electromagnetic induction; direct current; alternating current; electromagnetic waves; geometric optics and wave optics.

FSC1015

GENERAL CHEMISTRY 1

This course emphasizes basic understanding of chemistry including theories and basic concepts. The basic concepts cover atoms,

atomic structure and the periodic table of elements which is often used in engineering, especially chemical and mechanical engineering. The course also focuses on the physical and chemical properties of materials. Properties of matter in gases, liquids and solids will be described. In addition, the reaction rate and the stability of matter in determining the direction the reaction will be explained. At the end of this course, students will master the theory, concepts and understandings of basic chemistry which is can be apply in engineering field.

FSD1012

BASICS OF DATA SCIENCE

Data science is an emerging field of study and requires a powerful combination of various disciplines namely mathematics, statistics, computer science and domain expertise. This course presents the essentials knowledge for data science including the definition, process, applications and issues. It also introduces computer software such as Microsoft Excel or R language for: data manipulation, graphing, simple loops and function and fundamental statistics.

FSC1025

GENERAL CHEMISTRY 2

This course is a continuation of the General Chemistry 1, which include the synthesis and reactions of selected functional groups in the field of organic chemistry. Polymer will be the conclusion of all these functional groups and their application in industry.

FSK1015

ICT PROGRAMMING AND LOGIC ESSENTIALS

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