Module Title	Mathematics 1
Description	The module is designed to provide students with the mathematical knowledge and skills to support study of engineering and to provide the requirement for entry into the BEng courses at ASU. It is therefore a preparatory or foundation module building on the knowledge obtained at school.

Module Title	Intermediate English
Description	A 10 CAT module which runs for one semester of 15 weeks for three hours per week, It is the first credit English course which ASU undergraduate students are required to take. The course provides intensive practice in Upper Intermediate reading, oral presentations, writing, and note-taking. Academic and study skills are embedded in the course. The course develops students' English language and analytical skills in order to pursue a more advanced ASU academic English course and to cope with the literacy demands of specialised courses taught in English.

Module Title	Principles of Engineering
Description	The course develops the students' understanding of essential scientific principles for the study of engineering to degree level. It is designed to be accessible to students with a wide range of prior science specialisation. The course comprises two blocks of study. These blocks are common to all engineering disciplines and introduce the principles of measurement systems and units, thermal physics, mechanical and electrical principles, and engineering materials and their properties.

Module Title	Study Skills and Professional Practice
Description	This module provides an introduction to both Study and professional Skills and practice. The module introduces study skills considering both individual and team-working skills, it covers exam preparation, revision and question answering techniques. It introduces students to their own Personal Development Planning processes. It also enables students to develop and use appropriate safe working practices as will be expected in an engineering and industrial environment.

Module Title	Engineering Science 1
Description	This module covers scientific principles of physics and chemistry at a level between secondary school level and Advanced Level. It serves as a preparatory module for students intending to undertake engineering undergraduate degree courses in the University and introduces students to a range of skills required for the study of engineering.

Module Title	Laboratory and Workshop Skills
Description	This module is a mixture of workshop exercises and practical experiments and projects. Students work in small groups of 2-5 people depending on the task. The module also provide students with introduction to design skills and basic engineering drawing

Module Title	Engineering Science 2
Description	This module is aimed at extending the science knowledge of engineering students in preparation for continuing on their respective engineering degree. It covers general applied physical principles, including dynamics, statics, fluids, heat and energy.

Module Title	Computer Programming for Engineering
Description	This course introduces students with concepts of programming. This includes conditional, iterations and block structure. Structure programming and data-types will also be introduced and illustrated on typical and simple engineering problems.

Module Title	Mathematics 2
Description	The module is designed to provide students with the mathematical knowledge and skills necessary for transition to level 4 study of engineering subjects. Students will attend lectures and tutorial where worked exercises are under taken. Where possible, the statistical content will introduce the use of statistical packages and the presentation of real-life data sets. All students will keep a logbook of the problems tackled. Beside the 36 contact hours, students are encouraged to spend some time on their own to practise the mathematical concepts they learn during the lectures and solve extra problems.

Module Title	Constructing the Built Environment
Description	This module introduces students to design principles and processes specific to constructing the built environment. It will explore traditional and modern construction methods and understand how new methods and material can sustain the built environment.

Module Title	Advanced English
Description	A 10 CAT module which runs for one semester of 15 weeks for three hours per week. It is the second credit English course which ASU undergraduate students are required to take. The course provides intensive practice in Advanced level reading, oral presentations, writing, and listening. Academic and study skills are embedded in the course. This course aims to enhance students' English and analytical skills as a prerequisite for academic and professional success.

Module Title	Human Rights
Description	This course deals with the basic principles of human rights in terms of the definition of human rights and its scope and source, focusing on the provisions of the international law of human rights, which include the following international documents: a- Charter of the United Nations b- The Universal Declaration of Human Rights c- The International Covenant on Civil and Political Rights d- The International Covenant on Economic, Social and Cultural Rights e- Convention against Torture and Cruel, Inhumane Punishments. f- Protection Mechanisms and Constitutional Organisation of Public Rights and g- Freedom in the Kingdom of Bahrain

Module Title	History and Civilisation of Bahrain
Description	The aim of the module is to highlights the role of the Kingdom of Bahrain in its local, regional and international levels, through various historical eras, beginning with the Old Ages through the Islamic era, to the modern era. The module demonstrates the Arab and Islamic identity of the Kingdom of Bahrain, and the vital role played by the politically and culturally.

Module Title	Arabic Language
Description	The module runs for one semester of 15 weeks for three hours per week. The module provides intensive practice in reading, oral presentations, writing, and note-taking.

Module Title	Arabic Language for Non-Arabic Speakers
Description	The module runs for one semester of 15 weeks for three hours per week. This Arabic course is required to take by ASU undergraduate Engineering programme. The module provides intensive practice for beginners in reading, oral presentations, writing, and note-taking.

Module Title	Engineering Practice and Design 1
Description	This module provides an introduction to engineering practice and design. Design activities, sustainable design principles, and transferable skills will be considered.

Module Title	Engineering Mathematics 1
Description	This module consolidates the mathematical skills that underpin the BEng engineering degrees.

Module Title	Architectural Engineering Design and Structures 1
Description	This module focuses on the principles and elements of Design. The module explains the fundamentals of the design process as an introduction to Architectural Design Engineering. Students are introduced to the principles and elements of design through a series of individual and group design activities through which they experience the implementation of different design elements and learn about different principles of design. This module gives the students a chance to understand and experiment with 2D and 3D compositions with specific design values and simple structures which will be taken forward in the second part of this module which is Architectural Engineering Design and Structures 2.

Module Title	Principles of Engineering Science 1
Description	This module develops the students' understanding of essential scientific principles for the study of engineering to degree level. It is designed to be accessible to students with a wide range of prior science specialisation. This module develops the students' understanding of methods for quantifying the forces between bodies. Forces that are responsible for maintaining equilibrium. This module is common to all engineering disciplines and introduce the principles of measurement

	systems, force and moment vector and traditional analysis, and forces in equilibrium.

Module Title	**CAD Graphics**
Description	Topics include intermediate CAD operations, editing drawings, constructing multi-view drawings, applying text, font, style commands, dimensioning, hatching, blocks, constructing 3D objects and modifying solid objects.

Module Title	**Integrated Design and Construction**
Description	The course provides insight into the design and construction processes based on integration. It is designed specifically to provide an overview of design and construction management skills, competencies and tasks.

Module Title	**Engineering Practice and Design 2**
Description	The module covers practical work, project management, health and safety and risk management, and transferable skills.

Module Title	**Engineering Mathematics 2**
Description	This module consolidates the mathematical skills that underpin the BEng engineering degrees.

Module Title	**Architectural Engineering Design and Structures 2**
Description	The aims of this module are to understand the relationship between the building architectural form; simple structure types and materials; present the simple environmental issues which should be considered during the design and construction of buildings; and to apply these issues on an architectural design problem; Resolution of structural issues, functional requirements, and form generation in one to two storey buildings

Module Title	**Principles of Engineering Science 2**
Description	This module develops the students' understanding of essential scientific principles for the study of engineering to degree level. It is designed to be accessible to students with a wide range of prior science specialisation. The module comprises two blocks of study. These blocks are common to all engineering disciplines and introduce mechanical and electrical principles, and engineering materials and their properties.

Module Title	**Building Technology**

Description	Building services engineers are responsible for the design, installation, and operation and monitoring of the mechanical, electrical and public health systems required for the safe, comfortable and environmentally friendly operation of modern buildings. This course covers all of these services and their management.

Module Title	**Building Environment Simulation and Analysis**
Description	This course aims to provide a general understanding of, and practical experience in computer modelling software systems which are used for simulating and predicting the environmental performance of buildings. A theoretical explanation of the processes simulated in the computer models; such as heat transfer, air flow and lighting; is followed by a description of individual software packages and practical workshops using each package.

Module Title	**Structural Design 1**
Description	Introduction to stress and deformation of basic structural materials subjected to axial, torsional, and bending and pressure loads. Plane stress, plane strain, and stress-strain laws. Applications of stress and deformation analysis to members subjected to centric, torsional, flexural, and combined loading. Introduction to theories of failure.

Module Title	**Advanced Engineering Mathematics**
Description	This module covers advanced undergraduate engineering mathematics.

Module Title	**Geotechnics 1**
Description	This module introduces to the students a number of simple concepts and models which are used to describe soil and its mechanical behaviour. Standard laboratory tests carried out and soil properties derived from the results.

Module Title	**Design Procedures for Architecture 1**
Description	Personal student architectural design project embracing design studio and technology studio against a defined brief.

Module Title	**AutoCAD-3D**
Description	The course covers key command revision, 3D viewing, viewports and coordinate systems, wire frame modelling, surface modelling and meshing, solid modelling, studio effects, materials and lighting, and Boolean operators.

Module Title	**Engineering management and economics**

Description	This module helps to prepare student for their future role as professional engineers in a number of ways. It includes: • detailed study of project planning techniques, including network techniques, with preparation for the students' individual projects • an overview of the business functions which interact with engineering • an introduction to Systems Thinking. A formal method for studying systems will be introduced. • An introduction to recruitment, retention and equal opportunities in employment • the use of published Standards in engineering • use of the BSI website to access national and international standards • an introduction to statistics and their use in managing engineering processes • an introduction to Quality Management, with particular reference to the ISO 9000 series • An introduction to European Directives and harmonised standards • Writing technical business reports, including the importance of acknowledging published sources and the use of formal methods for doing so.

Module Title	**Structural Design 2**
Description	This module develops students' practice with structural engineering, provides an introduction to structural concepts, as well as an overview of specific techniques for analysing **determinate** structures, trusses, beams, and frames.

Module Title	**Building Information Modelling**
Description	This module introduces the concepts of Building Information Modelling (BIM) through the development of architectural 3D models on industry standard parametric CAD systems. It covers the practical competence of architectural modelling and provides exposure on co-ordinating building information models.

Module Title	**Engineering Ethics**
Description	This course introduces the theory and the practice of engineering ethics using a multi-disciplinary and cross-cultural approach. Theory includes ethics and philosophy of engineering. Historical cases are taken primarily from the scholarly literatures on engineering ethics, and hypothetical cases are written by students. Each student will write a story by selecting an ancestor or mythic hero as a substitute for a

	character in a historical case. Students will compare these cases and recommend action.

Module Title	**Design Procedures for Architecture 2**
Description	Personal student architectural design project embracing design studio and technology studio against a defined brief.

Module Title	**Architectural Engineering Field Studies**
Description	This is substantially a project based learning module. It seeks to bring together construction and materials needed for design, surveying for execution, and some geology. It emphasises the link between materials and site geological properties and their relationship with design and execution. There will be a block week devoted to a Construction type activity and others including geological and site visits. Multimedia support will feature in the delivery.

Module Title	**Internship**
Description	This course provides the students with an opportunity to experience the industrial world and be part of a team working on real world project. The University assists each students to find the most suitable industry.

Module Title	**Project 1**
Description	To plan, execute, review and report upon a piece of project work related to the BEng course being followed by the student. A Module Guide for the project is augmented by 4 lectures.

Module Title	**Structural Design and Analysis 1**
Description	This module offers the knowledge and skills of reinforced concrete design to Eurocodes, analysis of structural form and ability in design in both qualitative and quantitative directions.

Module Title	**Engineering Research Methods**
Description	The module studies the scope and significance of engineering research. It introduces students to the various aspects of engineering research; its types, tools and methods and students will learn how to apply research techniques into real world situations. The module covers topics such as the identification of a topic by the student, proposition of hypothesis, formulation of research inquiries, development of literature review, select research design and methodologies. Additionally students will learn data collection

	techniques; primary and secondary data with application to specific problems, scaling and research instrument design and sampling design.

Module Title	**Energy Conservation in Building**
Description	This course will provide students with the ability to quantify the energy available from sun, wind, sea or river, or the earth for a given application at a given site. Students will develop the skills to understand and analyse the potential and limitations of the available energy conversion devices and exercise basic engineering judgment in their application.

Module Title	**Thermodynamics for Buildings**
Description	This module provides students with relevant the principles of heat transfer, fluid flow and thermodynamics for application to buildings and their engineering systems.

Module Title	**Forensic Engineering and Conservation**
Description	This module uses mainly case studies to develop the principles design by looking at the influence of failures on the evolution of professional practice. It teaches students an understanding of holistic design applications, conservation, and the role of regulations. It teaches, develops and assesses observational, deductive, creative and communications skills.

Module Title	**Project 2**
Description	To plan, execute, review and report upon a piece of project work related to the BEng course being followed by the student. A Module Guide for the project is augmented by 4 lectures.

Module Title	**Structural Design and Analysis 2**
Description	This module offers the knowledge and skills of steel design to Eurocodes, analysis of structural form and ability in design in both qualitative and quantitative directions.

Module Title	**Geotechnics 2**
Description	This Module is intended to provide an understanding to the application of theory to the analysis and design of geotechnical structures.

Module Title	Innovation, Enterprise and Management
Description	The module is intended to be practical, with students developing some appropriate ideas of their own in such a way that they become practical, profitable propositions. Students will practice ways of finding ideas, testing those ideas and developing them, and will write their own business strategies, risk assessments and scenario testing so that demonstrate the commercial viability of their ideas. One of the assignments will require students – working in groups, typically to adopt a concept and develop it such that it could be commercially viable and sustainable. This might be a product or a service (such as consultancy or contract management). Topics students will experience will include intellectual property, market research, market placement, advertising and finance. They will be expected to reflect on what they can contribute towards a group.

Module Title	Design Project
Description	Main architectural design project embracing design studio and technology studio against a defined brief.