BEng (Hons) Architectural Engineering

LSBU London South Bank University

ASU جامعة العلوم التطبيقية APPLIED SCIENCE UNIVERSITY

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Enquiry

Programme Details

Final Qualification	Language of Study	Mode of Study
BEng (Hons)	English	Full Time

Programme Structure

Study Period	Total Credit Hours	Number of Courses
4 Years	150 Credit Hours	49 Courses

Brief about the Programme

This programme is intended for undergraduate students who wish to study the discipline of Architectural Engineering to Honours degree level and who may wish to achieve professional status later.

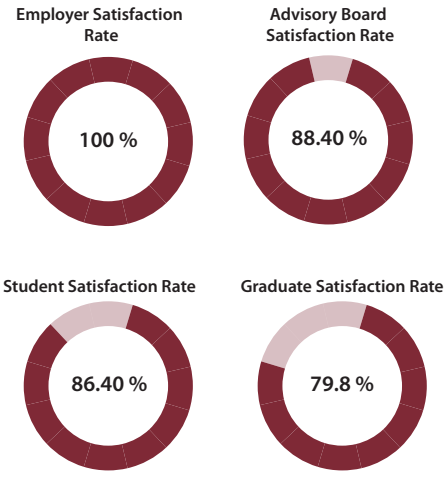
This programme is designed to embrace developments in the industry, in particular the Engineering Council UK (ECUK) Standard for Professional Engineering Competence (UK-SPEC). The programme leads to a dual award from Applied Science University (ASU Bahrain) and London South Bank University (LSBU-UK).

CIOB The Chartered Institute of Building

Aims of the Programme

1. Produce graduates committed to careers in the architectural engineering industry, with opportunities to work with a range of employers in various countries.
2. Equip graduates for postgraduate study and professional employment in architectural engineering, enabling them to become lifelong learners who recognise the societal value of the discipline.
3. Develop graduates with a strong breadth and depth of knowledge and understanding of key aspects of architectural engineering.
4. Enable graduates to acquire analytical, problem-solving, and subject-specific skills, and to develop the ability to evaluate evidence, arguments, and assumptions, reach sound judgments, and communicate effectively.
5. Provide graduates with the necessary academic qualification to enter advanced postgraduate studies as well as providing the necessary educational base to become a Chartered Engineer.

General Statistics



The first university in the Kingdom of Bahrain to achieve global accreditation from the British Quality Assurance Agency for Higher Education (QAA)

Rated 5 Stars in the QS Rating System

Ranked 30th in the QS Arab Region University Rankings 2026

Ranked 613 in the QS World University Rankings 2026

Ranked 301+ Worldwide in the Times Higher Education University Impact Rankings

Career Paths

1. Architectural Engineer
2. Structural Engineer
3. Building Services Engineer
4. BIM Specialist
5. Construction Project Manager
6. Sustainable Design Consultant
7. Urban Development Engineer
8. Design & Planning Engineer
9. Environmental Building Consultant
10. Facility Design Engineer

Entry Requirements

Foundation Level / Year 1

A Bahraini or GCC Secondary School (Scientific) Certificate with a minimum of 65% GPA* and 60% in Mathematics and 60% in English language or equivalent. Candidates with a lower GPA may also be admitted, subject to a satisfactory interview by the College.

IELTS Test Score of 4.5 or equivalent.

Direct Entry to Level 4 Year 2

Foundation Year Completion Certificate, or equivalent international qualifications which may typically include:

Advanced Level (A-Level) – BCC or equivalent in UCAS points including Mathematics and preferably a Science in either Chemistry or Physics

International Baccalaureate- IB 29 points

CBSE minimum of 65% with 70% in English

IELTS Test Score of 6.0 or equivalent.

Study Plan

Year	Semester 1	Module Codes	Credit Hours	Semester 2	Module Codes	Credit Hours	Level	
1	Engineering Science 1	ASU_S_ES1	3 hrs. (10 CAT)	Engineering Science 2	ASU_S_ES2	3 hrs. (10 CAT)	S	Core
	Intermediate English	ASU_S_IEN	3 hrs. (10 CAT)	Advanced English	ASU_S_AEN	3 hrs. (10 CAT)	S	Core
	Mathematics 1	ASU_S_MA1	3 hrs. (10 CAT)	Mathematics 2	ASU_S_MA2	3 hrs. (10 CAT)	S	Core
	Principles of Engineering	ASU_S_POE	3 hrs. (10 CAT)	Constructing the Built Environment	ASU_S_CBE	3 hrs. (10 CAT)	S	Core
	Laboratory and Workshop Skills	ASU_S_LWS	3 hrs. (10 CAT)	Study Skills and Professional Practice	ASU_S_SSP	3 hrs. (10 CAT)	S	Core
				Computer Programming for Engineering	ASU_S_CPE	3 hrs. (10 CAT)	S	Core
Summer	Human Rights				ASU_S_HUR	3 hrs. (10 CAT)	S	Core
	Bahrain Civilisation and History				ASU_S_BCH	3 hrs. (10 CAT)	S	HEC req.
	Arabic Language				ASU_S_ALA	3 hrs. (10 CAT)	S	HEC req.
	Arabic Language for Non-Arabic Speakers				ASU_S_ALN			
Total			**50**			**90**		**140**
2	Engineering Practice and Design 1	ASU_4_EP1	3 hrs. (10 CAT)	Engineering Practice and Design 2	ASU_4_EP2	3 hrs. (10 CAT)	4	Core
	Engineering Mathematics 1	ASU_4_EM1	3 hrs. (10 CAT)	Engineering Mathematics 2	ASU_4_EM2	3 hrs. (10 CAT)	4	Core
	Integrated Design and Construction	ASU_4_IDC	3 hrs. (10 CAT)	Building Technology	ASU_4_BDT	3 hrs. (10 CAT)	4	Core
	Architectural Engineering Design and Structures 1	ASU_4_AE1	3 hrs. (10 CAT)	Architectural Engineering Design and Structures 2	ASU_4_AE2	3 hrs. (10 CAT)	4	Core
	Principles of Engineering Science 1	ASU_4_PE1	3 hrs. (10 CAT)	Principles of Engineering Science 2	ASU_4_PE2	3 hrs. (10 CAT)	4	Core
	CAD Graphics	ASU_4_CAD	3 hrs. (10 CAT)	Building Environment Simulation and Analysis	ASU_4_BSA	3 hrs. (10 CAT)	4	Core
Total			**60**			**60**		**120**
3	Structural Design 1	ASU_5_SD1	3 hrs. (10 CAT)	Structural Design 2	ASU_5_SD2	3 hrs. (10 CAT)	5	Core
	Advanced Engineering Mathematics	ASU_5_AEM	3 hrs. (10 CAT)	Building Information Modelling	ASU_5_BIM	3 hrs. (10 CAT)	5	Core
	Geotechnics 1	ASU_5_GT1	3 hrs. (10 CAT)	Engineering Ethics	ASU_5_EET	3 hrs. (10 CAT)	5	Core
	Design Procedures for Architecture 1	ASU_5_DA1	3 hrs. (10 CAT)	Design Procedures for Architecture 2	ASU_5_DA2	3 hrs. (10 CAT)	5	Core
	AutoCAD-3D	ASU_5_A3D	3 hrs. (10 CAT)	Architectural Engineering Field Studies	ASU_5_AFS	3 hrs. (10 CAT)	5	Core
	Engineering Management and Economics	ASU_5_EME	3 hrs. (10 CAT)					
Summer	Internship				ASU_5_ITS	3 hrs. (10 CAT)	5	Core
Total			**60**			**60**		**120**
4	Project 1	ASU_6_PR1	3 hrs. (10 CAT)	Project 2	ASU_6_PR2	3 hrs. (10 CAT)	6	Core
	Structural Design and Analysis 1	ASU_6_SA1	3 hrs. (10 CAT)	Structural Design and Analysis 2	ASU_6_SA2	3 hrs. (10 CAT)	6	Core
	Engineering Research Methods	ASU_6_ERM	3 hrs. (10 CAT)	Geotechnics 2	ASU_6_GT2	3 hrs. (10 CAT)	6	Core
	Energy Conservation in Buildings	ASU_6_ECB	3 hrs. (10 CAT)	Innovation, Enterprise and Management	ASU_6_IEM	3 hrs. (10 CAT)	6	Core
	Thermodynamics for Buildings	ASU_6_TDB	3 hrs. (10 CAT)	Design project	ASU_6_DPR	6 hrs. (20 CAT)	6	Core
	Forensic Engineering and Conservation	ASU_6_FEC	3 hrs. (10 CAT)					
Total			**60**			**60**		**120**
Total 150 credit hours including HEC requirements								

Mathematics 1 (ASU_S_MA1)

The module is designed to provide students with the mathematical knowledge and skills to support their engineering study and the requirement for entry into the BEng programmes at ASU. Therefore, it is a preparatory or foundation module building on the knowledge obtained at school.

Intermediate English (ASU_S_IEN)

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

Principles of Engineering (ASU_S_POE)

The module develops the students' understanding of essential scientific principles for studying engineering to the degree level. It is designed to be accessible to students with a wide range of prior science specialisations. The module 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.

Study Skills and Professional Practice (ASU_S_SSP)

This module introduces 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 expected in an engineering and industrial environment.

Engineering Science 1 (ASU_S_ES1)

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 programmes at the University and introduces students to a range of skills required for the study of engineering.

Laboratory and Workshop Skills (ASU_S_LWS)

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 provides students with an introduction to design skills and basic engineering drawing.

Engineering Science 2 (ASU_S_ES2)

This module is aimed at extending the science knowledge of engineering students in preparation for continuing their respective engineering degrees. It covers general applied physical principles, including dynamics, statics, fluids, heat and energy.

Computer Programming for Engineering (ASU_S_CPE)

This module introduces students to concepts of programming. This includes conditional, iterations and block structure. Structured programming and data types will also be introduced and illustrated on typical and simple engineering problems.

Mathematics 2 (ASU_S_MA2)

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 tutorials where mathematical exercises are undertaken. 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.

Besides 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.

Constructing the Built Environment (ASU_S_CBE)

This module introduces students to design principles and processes specific to constructing the built environment. It will explore traditional and modern construction methods, and students will understand how new methods and materials can sustain the built environment.

Advanced English (ASU_S_AEN)

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

Human Rights (ASU_S_HUR)

This module 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

Bahrain Civilisation and History (ASU_S_BCH)

The aim of the module is to highlight 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 they play politically and culturally.

Arabic Language (ASU_S_ALA)

The module runs for one semester of 7 weeks (Summer Semester). The module provides intensive practice in reading, oral presentations, writing, and note taking.

Arabic Language for Non-Arabic Speakers (ASU_S_ALN)

The module runs for one semester of 7 weeks (Summer Semester). This Arabic module is required to be taken by non-Arabic speaking students in ASU undergraduate Engineering programmes. The module provides intensive practice for beginners in reading, oral presentations, writing, and note taking.

Engineering Practice and Design 1 (ASU_4_EP1)

This module introduces engineering practice and design. Design activities, sustainable design principles, and transferable skills will be considered.

Engineering Mathematics 1 (ASU_4_EM1)

This module consolidates the mathematical skills that underpin the BEng engineering degrees.

Architectural Engineering Design and Structures 1 (ASU_4_AE1)

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 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, Architectural Engineering Design and Structures 2.

Principles of Engineering Science 1 (ASU_4_PE1)

This module develops the students' understanding of essential scientific principles for the study of engineering to the degree level. It is designed to be accessible to students with a wide range of prior science specialisations.

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 introduces the principles of measurement systems, force and moment vector and traditional analysis, and forces in equilibrium.

CAD Graphics (ASU_4_CAD)

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.

Integrated Design and Construction (ASU_4_IDC)

The module 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.

Engineering Practice and Design 2 (ASU_4_EP2)

The module covers practical work, project management, health and safety and risk management, and transferable skills.

Engineering Mathematics 2 (ASU_4_EM2)

This module consolidates the mathematical skills that underpin the BEng engineering degrees.

Architectural Engineering Design and Structures 2 (ASU_4_AE2)

The aims of this module are to understand the relationship between the building architectural form; simple structure types, and materials; present simple environmental issues which should be considered during the design and construction of buildings; and apply these issues to an architectural design problem; resolution of structural issues, functional requirements, and form generation in one to two-storey buildings.

Principles of Engineering Science 2 (ASU_4_PE2)

This module develops the students' understanding of essential scientific principles for studying engineering to the degree level. It is designed to be accessible to students with a wide range of prior science specialisations. 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.

Building Technology (ASU_4_BDT)

Building services engineers are responsible for designing, installing, operating and monitoring the mechanical, electrical and public health systems required for the safe, comfortable and environmentally friendly operation of modern buildings. This module covers all of these services and their management.

Building Environment Simulation and Analysis (ASU_4_BSA)

This module aims to provide a general understanding and practical experience in computer modelling software systems for simulating and predicting the environmental performance of buildings. A theoretical explanation of the processes simulated in the computer models, such as heat transfer, airflow and lighting, is followed by a description of individual software packages and practical workshops using each package.

Structural Design 1 (ASU_5_SD1)

Introduction to stress and deformation of basic structural materials subjected to axial, torsional, 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.

Advanced Engineering Mathematics (ASU_5_AEM)

This module covers advanced undergraduate engineering mathematics.

Geotechnics 1 (ASU_5_GT1)

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 are carried out, and soil properties are derived from the results.

Design Procedures for Architecture 1 (ASU_5_DA1)

Personal student architectural design project embracing design studio and technology studio against a defined brief.

AutoCAD-3D (ASU_5_A3D)

The module 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.

Engineering Management and Economics (ASU_5_EME)

This module helps to prepare students for their future roles as professional engineers in a number of ways. It includes:

- detailed study of project planning techniques, including network techniques, with preparation for the student's 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.

Structural Design 2 (ASU_5_SD2)

This module develops students' practice with structural engineering, introduces structural concepts, and provides an overview of specific techniques for analysing determinate structures, trusses, beams, and frames.

Building Information Modelling (ASU_5_BIM)

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 to coordinating building information models.

Engineering Ethics (ASU_5_EET)

This module introduces the theory and the practice of engineering ethics using a multi-disciplinary and cross-cultural approach. The theory includes ethics and the philosophy of engineering. Historical cases are taken primarily from the scholarly literature 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.

Design Procedures for Architecture 2 (ASU_5_DA2)

Personal student architectural design project embracing design studio and technology studio against a defined brief.

Architectural Engineering Field Studies (ASU_5_AFS)

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.

Internship (ASU_5_ITS)

This module provides the students with an opportunity to experience the industrial world and be part of a team working on real-world projects. The University assists each student in finding the most suitable industry.

Project 1 (ASU_6_PR1)

To plan, execute, review and report upon a piece of project work related to the BEng programme being followed by the student. A Module Guide for the project is augmented by four lectures.

Structural Design and Analysis 1 (ASU_6_SA1)

This module offers the knowledge and skills of reinforced concrete design to Eurocodes, analysis of structural form and the ability to design in both qualitative and quantitative directions.

Engineering Research Methods (ASU_6_ERM)

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 to 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, and 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.

Energy Conservation in Building (ASU_6_ECB)

This module will provide students with the ability to quantify the energy available from the sun, wind, sea or river, or 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.

Thermodynamics for Buildings (ASU_6_TDB)

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

Forensic Engineering and Conservation (ASU_6_FEC)

This module uses mainly case studies to develop the principles design by looking at the influence of failures on the evolution of the 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.

Project 2 (ASU_6_PR2)

To plan, execute, review and report upon a piece of project work related to the BEng programme being followed by the student. A Module Guide for the project is augmented by four lectures.

Structural Design and Analysis 2 (ASU_6_SA2)

This module offers the knowledge and skills of steel design to Eurocodes, analysis of structural form and the ability to design in both qualitative and quantitative directions.

Geotechnics 2 (ASU_6_GT2)

This module is intended to provide an understanding of the application of theory to the analysis and design of geotechnical structures.

Innovation, Enterprise and Management (ASU_6_IEM)

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 they demonstrate the commercial viability of their ideas. One of the assignments will require students – to work 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).

Students will experience topics addressing intellectual property, market research, market placement, advertising and finance. They will be expected to reflect on what they can contribute to a group.

Design Project (ASU_6_DPR)

Main architectural design project embracing design studio and technology studio against a defined brief.