

IMPACT AFRICA EDUCATION FOUNDATION

IMPACT AFRICA TECHNICAL UNIVERSITY U.S.A

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DEPARTMENT OF ENGINEERING SCIENCE

Architectural Technology BSc (Hons) Core Course Outline

YEAR 1	YEAR 2	YEAR 3
Architectural Representation 1	Architectural Representation 2	Building Information Technology and Modelling
Building Technology 1	Building Technology 2	Integrated Project
Architectural Detailing	Building Economics and Project Management	Contract and Law
Sustainable Building Principles	Professional Practice	Technological and Environmental Innovation
Building Design 1	Building Design 2	Dissertation

Architectural Representation 1

This module deals with the visualisation and communication skills which involve digital and non-digital means of cognition, manipulation and construction representation. This module aims to develop in students the ability to problem solve to realise the design into built form through the generation of detailed design solutions that respond to familiar and unfamiliar situations. Students in this module develop technical drawing skills related to the technology of architecture to establish the fundamental link between design and technology.

Building Technology 1

This module explores Architecture and its place in the built environment with regard to technology and the environment. Studies shall involve the awareness of technological theories that inform the practice of Architectural technology as well as the knowledge of science of materials and structural components. The module shall introduce a range of concepts and intuitive levels of understanding in building science. Basic structural principles are also introduced as well as various strategies for dealing with static and dynamic forces in buildings.

Architectural Detailing

This course is intended to help students to have an initial understanding of architectural detailing, illustrating typical construction details, processes and concepts. Using a set of detail patterns such as Controlling Water, Providing Structural Support, Health and Safety, students will learn how to use codes, standards and conventional practices that are relevant for appropriate detailing solutions. The objectives of this course are: 1) To provide an introduction of architectural detailing through the investigation of different “detail patterns” regarding functions, constructability, aesthetics, 2) To deliver a general introduction to codes, standards and conventional drawing practices, c) To provide an essential graphic dictionary of materials, construction techniques, structural solutions and services typically used in the construction industry.

Sustainable Building Principles

Explores the principles of sustainable design and drivers of sustainability, together with awareness of ecological footprints, materials, embodied energy and processes of achieving sustainable design.

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Building Design 1

Focuses on the fundamental skills and knowledge in technical design, to develop an understanding of the framework within which design projects are realised in practice.

Year two

Architectural Representation 2

This module places emphasis upon digitally derived visualisation and graphic design using a variety of software platforms in order to provide students with a skill set that will enable them to confidently utilise a variety of software packages to achieve a set goal. Some of these skills involve computer rendering and animation, manipulation of images, diagramming, and project graphic layouts. Rendering of materials, mapping, lighting & environments shall be taught.

Building Technology 2

The aim of Building Technology 2 is to apply and extend basic knowledge of the themes of construction, structure and environment in the design and construction of buildings and develop a deeper understanding of how technical knowledge is an integral part of the design process. This module focuses upon the technical knowledge related to the construction of small to mid-scale framed buildings (residential) and the forces, which dictate their sophistication. A series of lectures and practical sessions, which document techniques and systems, focusing upon discrete subsets of construction structure and environmental strategy including building performance, shall be delivered and enhanced by the examination of precedents. The subject will be reinforced by projects and case study analysis. Practical sessions will allow students to experience the measurement and assessment of buildings. Assignments will be developed using digital visualisation and measurement tools, as well as analytical building performance modelling tools.

Building Economics and Project Management

This module introduces basic economic concepts, principles, and terminology that will enable built environment practitioners to understand, not only the working of the economy but also, more importantly, appreciate the inter-relationships between the construction sector and the wider economy. It will also enable built environment practitioners to make informed output and pricing decisions and have expert knowledge of the construction market together with the forces that shape it. This module also introduces students to the application of economics theories and concepts in project management, enabling the understanding of how project management skills and competencies can assist architectural technologists to address a wide range of practical management problems and questions encountered in the modern construction industry. Project delays, cost overruns, health and safety issues, and protracted disputes are some of the common features of the global construction industry. This module hopes to equip students with the skills to manage these problems.

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Professional Practice

Develop awareness and understanding of the relationship between professional practice, sustainable development and the UK government's scheme to achieve low/zero carbon buildings.

Building Design 2

Introduces design strategy issues related to site appraisal, planning policies and user requirements as applied to architectural design related to small/medium-scale buildings.

Year three (Level 6)

Building Information Technology and Modelling

Focuses on the capabilities required by the architectural technologists to operate effectively at different levels in the architectural design and construction process. It explores opportunities and methods to test detailed integrated design project delivered in the concurrent module.

Integrated Project

Develops architectural technology skills and support and consolidate core areas of the BSc programme through the medium of a design project for a low energy building which embraces sustainability characteristics.

Contract and Law

This module develops your knowledge and understanding of the general principles of contract law and its application to construction contracts. It further informs you about the key issues surrounding construction contracts, the role, obligations and responsibilities of the employer and the contractor.

Technological and Environmental Innovation

Develops skills in problem solving and innovative thinking associated with the built environment and sustainability issues in the national and global context

