

Course Information Sheet

BSc (Hons) Architectural Technology

Mode and course length – Full-Time (4 years)

Location – ARU Cambridge Campus

Awarding Body – Anglia Ruskin University. As a registered Higher Education provider Anglia Ruskin University is regulated by the Office for Students.

Overview

Location of study:

Level 3 – ARU Cambridge Campus

Level 4-6 – ARU Chelmsford Campus

Learn to turn a design concept into a completed building. Explore the principles of business management, which are vital for running a successful modern practice. Our course focuses on the link between building design and production, and gives you the technical understanding needed to bridge the two.

Architectural technology has four major themes: technology, design, management and practice. Our course will give you the skills you need to practise successfully in each area, along with a thorough understanding of scientific, technological and organisational principles.

Focusing on the relationships between materials, function, production and the environment, our course will help you to think about buildings in terms of 'buildability', sustainability and performance. You'll learn to appreciate detailed design and production information, including regulatory issues, and how they relate to procurement and contract administration. You'll also explore social, legal and economic considerations.

You'll cover business and management, professional practice and contract administration. This will prepare you to contribute to the running of a successful practice.

Site visits and study trips will develop your understanding of the sector and connect you with industry. You'll also learn to use practical and digital modelling and testing techniques to turn designs into reality. At our end-of-year Architecture and Planning Exhibition, you'll have the chance to display your work to the public.

Course Delivery

Our courses are delivered through teaching and learning methods which provide students with the widest possible exposure to a modern and innovative higher education experience.

These methods vary and could include attendance at lectures and seminars, undertaking laboratory exercises or work-based activities, practical work, performances, presentations, field trips, other relevant visits and e-learning through Canvas, our online learning management system.

Each course is divided into a number of 'modules' which focus on particular areas, each of which has a specific approach to its delivery. This information is published to students for each module they take via the Module Definition Form (MDF) and Canvas.

Assessment

Throughout the course, we'll use a range of assessment methods to help measure your progress. These reflect the diverse

range of skills that a successful architectural technologist needs. Besides exams, they include presentations, reports, portfolios and logbooks.

Fees

Information about your course fee including any annual fee increases or deposits (if required) can be found in your offer letter.

Additional Costs

Small model making tools, modelling materials , pens, pencils and printing - £150+

Large format printing and stationary - £150+

Contribution to field trip to a European city (subsidised) - £250

Building Site Safety boots - £30-50 (must be boots that cover the ankle)

Modules

Core Modules

Year 1: Foundation in Architecture

This module will provide students with the necessary skills to begin studying at level 4 in Architecture and related courses.

Students will be introduced to the core skills necessary to succeed in higher education, including researching and referencing appropriately, demonstrating appropriate ICT skills, and communicating effectively verbally and in writing.

Students will be introduced to practical art and design skills including developing skills of visual storytelling, image-making both in traditional and digital media, visual language and communication, formulating an independent creative response to a broad range of subject matter.

Students will also be introduced to the fundamentals of design from a creative perspective, and to some of the key ideas/movements dominating art, design and culture, during the past few centuries.

Students will work extensively in groups and collaboratively, with students from art and design, architecture and engineering pathways.

The module is made up of the following 8 constituent elements:

- Interactive Learning Skills and Communication (ILSC)
- Information Communication Technology (ICT)
- Creative Workshops 1
- Creative Workshops 2
- Approach to Design
- Critical and Contextual Studies
- Engineering Design
- Specialist Project

Year 2: History and Theory of Architecture (Introduction)

This module is designed to provide an introduction to Architectural History and Theory for students of Architecture and Architectural Technology as an integral part of a professional education. Through an understanding of the challenges faced, and modes of representation used in the past, students will begin to think critically about their own studio work. The module will begin by introducing students to Architecture as a visual language before rigorously accessing, in a chronological sequence, the major movements in western Architectural history spanning from Classical Greece to the present day. Each movement will be considered in its historical context. Students will be required to study historical and theoretical texts to aid their understanding of architecture as cultural expression. Typically each teaching session will begin with a group presentation to tutors and peers, where students will present, using PowerPoint or similar, their academic research and understanding of a specified topic. This will be followed by open discussion on issues raised and/or workshops to aid the development of students' critical skills. Each

seminar will be followed by a formal lecture where the subsequent topic will be introduced. Tutorials will also be given to the team presenting at the following session.

Year 2: IT and Communications

Students entering Higher Education will need specific study skills to enable them to maximise their learning potential and take advantage of opportunities available both in the academic setting and workplace. The module is intended to be both preparatory and supportive, building a strong foundation for learning and later development. Students will gain Information and Communication Technology (ICT) skills for information management and presentation purposes and will be encouraged to use contemporary ICT methods for research and for the production and presentation of reports, in a style suitable both for university coursework requirements and the commercial environment.

Year 2: Elements of Construction Design

This module is designed for students of construction, surveying and architecture to introduce them to some of the basic analytical concepts and processes involved in the design of structures. Students will develop analytical skills which will allow them to carry out basic structural calculations

Students will also be introduced to basic 2D drafting techniques using industry standard software. This will allow them to effectively interpret technical drawing and give them the skills which can be applied to their specialist discipline area in later modules. Skills in this medium are highly sought after in the construction industry. BIM will be introduced to the student and students will gain an appreciation of technology and the role of the designer in the construction process and have an understanding of the design process.

Year 2: Architecture and Planning Design Studio A

This module is designed for students of Architecture and Architectural Technology as an introduction to the creative processes embodied and the skills required within these related professions. The module complements the work undertaken in the associated module entitled; Architecture and Planning Design Studio B. Students will develop a range of graphic communication techniques, including freehand and technical drawing skills. The ability to understand and produce simple professional technical drawing will be refined, as well as developing an appreciation of the extent of information required in the process of planning, designing and constructing a building. The module will provide an introduction to and broadening of the basic concepts and techniques of architectural design applied to small scale buildings. Students will have the opportunity to investigate; space and form, materials, structure, construction and technology. Throughout this module drawing skills are developed and issues relating to scale, proportion and the human body are explored. The knowledge and skills required to successfully complete this module relate directly to the relevant professions. The module is project based with studio teaching and as such requires the student to develop the project work week on week over the entire trimester, in order that regular individual and group tutorials can occur. Students work individually and in interdisciplinary groups, reflecting the demands of the profession. There will be some formal lectures during the trimester; however teaching will be predominantly in the studio, where regular staff/student reviews and presentation will occur.

Year 2: Architecture and Planning Design Studio B

This module is designed for students of Architecture and Architectural Technology as an introduction to the creative processes embodied and the skills required within these related professions. The module complements the work undertaken in the associated module entitled; Architecture and Planning Design Studio A. Students will develop a range of graphic communication techniques, including freehand and technical drawing skills. The ability to understand and produce simple professional technical drawing will be refined, an appreciation of the extent of information required in the process of planning, designing and constructing a building will be developed. The module will provide an introduction to and broadening of the basic concepts and techniques of architectural design applied to small scale buildings and building elements. Students will have the opportunity to investigate; space and form, materials, structure, construction and technology. Throughout this module drawing skills are developed and issues relating to scale, proportion and the human body are explored. The knowledge and skills required to successfully complete this module relate directly to the relevant professions. The module is project based with studio teaching and as such requires the student to develop the project work week on week over the entire trimester. Students work individually and in interdisciplinary groups, reflecting the demands of the profession. There will be some formal lectures during the trimester; however teaching will be predominantly in the studio, where regular staff/student reviews and presentation will occur.

Year 2: Building Technology

This module is designed for students of construction, surveying and architecture with little and/or no prior knowledge of building construction, services and material properties. Students will learn the common materials and methods of construction of both new and traditional housing, by considering in turn each of the main elements of the buildings' structure. They will also study the requirements of the internal environment, so as to understand how services installations contribute to user comfort. Other basic aspects such as the personnel involved, health and safety requirements and specialised terminology will be illustrated as appropriate to support this.

Employability skills Students will acquire knowledge related to domestic construction and be able to justify why different materials are used in the built environment. As well as improving their intellectual skills they will also develop communication skills.

Year 2: Elementary Survey Skills

This module is intended to develop the necessary site related survey skills for students entering the construction industry. Students will gain both a theoretical understanding as well as hands-on practice in the use of both traditional and contemporary instruments in order to set-up and control the most common elements of construction.

Survey work is one of the most complete and satisfying disciplines involved in construction because it involves the application of theoretical knowledge to solve practical problems using tactile skills and common-sense in the field.

Following brief theoretical introductions and backed up by student managed pre-reading and preparation, much of the module content will be experienced out of doors. As time is limited and weather conditions unpredictable, students should be prepared to dress appropriately and attend all timetabled classes. There will be little if any time for repeat sessions or to catch up on missed experiences.

Students will be expected to display a hands-on competence in order to pass a number of practical tasks in the field as well as be able to perform the basic off-site calculations necessary to be able to prepare site/quality/survey documentation to satisfy specified tolerances and employer requirements. To quote a former student, "there's nowhere to hide and no-one gets a free ride".

The skills gained in this module are those which the most junior of site engineers and site managers will be expected to perform and are therefore of immeasurable value in employability terms.

Year 2: Construction Technology

This module introduces Architectural Technology students to general construction knowledge and practical skills required to evaluate and technically draw UK domestic scale buildings of average complexity. It explores the theory and practice of appraising the design and production of buildings their elements and constituent components in an integrated way through research and detailed technical drawing. Students will have the opportunity to explore and research buildings from both textbooks, journals and on site physical analysis in order to undertake a reverse science approach to learning. The module will also introduce knowledge and skills required within the designing of components, their performance specification, life-cycle, quality control, regulatory standards together with an appreciation of their on-site buildability and environmental impact. Research and tutorials, along with other taught modules, will enable students to develop the knowledge base required to undertake the detailed drawing aspects of the assignment. Detailed and scaled vertical sectional drawings will be undertaken to standard industry convention showing detailed interface assemblies with correct annotation, lineweights and hatching. The skills required to successfully complete this module are basic employability skills (Communication and Technical Drawing) for the architectural technologist and will help develop an awareness for industry-based roles in the architectural technology field.

Year 3: Environmental Building Performance

This module has been designed to give the students an insight into the scientific basis of the environmental performance and construction of buildings and their services. The main focus is on the introduction of modelling tools that can be used to simulate a building's performance and its effect on the environment. The main approach adopted is a scientific one, focusing on the analysis of a problem or set of problems, followed by the synthesis of a solution. Considerable emphasis is placed on the use of environmental criteria to assess a building's thermal, visual and aural performance. A number of scientific methods are explored

and there will be a limited amount of practical experiment-based work. Various technical solutions for lighting, heating, ventilation and air conditioning a building will be explored. The passive design features of a building are also explored.

Students will be introduced to standard methods of assessing and measuring the environmental performance of buildings, such as Passivhaus and BREEAM.

This module makes extensive use of Canvas to develop students understanding of the core module material and to provide formative assessment opportunities.

Year 3: Site Studies and Planning

The module has been designed to compliment the module entitled, Site Studies and Design, providing an understanding of the inseparable nature of the place and its context - a 'sense of place', and how this affects the design for new buildings and placemaking that are to contribute to the built environment. Apart from examining the influences of the primary elements that form the physical environment in its historic, present and future context, the relative legal and planning constraints that affect the built environment will be studied. Students will have the opportunity to survey, study, investigate and evaluate a site and will learn how to develop an ability to analyse and evaluate elements of townscape. In particular the design elements that contribute to urban form and place shaping will be explored. As part of this process, students will be expected to develop/enhance their drawing and sketching skills, providing an enhanced understanding of the place, spaces between buildings, and the urban environment. Design procedures and processes will be examined and a development brief/proposal will be developed to suit a particular site. The proposed development will be for a new building(s) and place within the context of the existing townscape. 'Sense of Place' will be explored with contextual investigations of design proposals. Planning policy and guidance and the way in which they are implemented will be explored. The importance and implications of environmental criteria and financial targets will also be considered. The module is project based with introductory lectures, site visits, and tutorial teaching. Students will work both in groups and individually. Joint staff and student critic and presentations occur. The knowledge and skills required to successfully complete this module are core employability skills for professionals engaged in architecture and architectural technology.

Year 3: Design Procedures

The module provides the students with a theoretical and practical understanding of the nature and processes of the design of a building. It concentrates on practice management and multi-professional team working as well as the various processes and communications required in the realisation of a comprehensive design of a building of medium complexity. It focuses on the collation and presentation of design, technical and contractual information required for the professional planning and management of the design as well as the skills required in creating a building from inception to completion. The module is project based with studio teaching. Teaching will be by means of lectures and tutorials. Joint staff and student criticisms and presentations occur throughout the module. The module is designed to give students an opportunity to develop creative skills in urban architectural design. The relationship between social processes, buildings and architectural design is studied in a variety of ways from theoretical studies to site visits. The implications of building in the city are explored from the perception of the client, the builder and the public. Drawing and modelling skills are developed to give definition to creative thinking of a more theoretical nature. Alternative design solutions will be developed in groups and individually and the materiality of architecture will be explored. There will be an emphasis towards the urban narrative. However the design proposals must demonstrate a strategic structural and constructional rationale within viable economic restraints. Oral, as well as 2 and 3 dimensional presentation techniques will be developed related to the design solutions adapted.

Year 3: Advanced Construction Technology

This advanced technology module is designed to develop students' technical knowledge and the skills to apply that knowledge in the context of both new build and refurbishment work. The focus of this module leads on from domestic construction and provides a broad understanding of the way we build commercial and industrial buildings. The module will consider the functional requirements of single-storey industrial sheds and multi-storey framed structures in concrete and steel. In addition, the effects of the latest legislation in relation to fire and health & safety on the construction process are examined. A great deal of guidance is given to students on skill development. The application of Building Regulations and the associated Approved Documents to both commercial and industrial buildings will be explored. Students will compare different construction methods, and analyse suitable applications for each method. In particular, frames, cladding systems, internal walls, structural flooring and roofing will form key areas of the module.

Environmental performance is a central part of this module and students will investigate how to ensure high levels of

environmental performance through using insulation, maintaining airtightness and the installation of building services and controls. Students will have the opportunity to compare the installation requirements of natural and forced ventilation systems and different methods of heating and cooling commercial and industrial buildings. The provision of high quality IT and communications infrastructure systems will also be investigated.

Year 3: Site Studies and Design

The module has been designed to compliment the module entitled, Site Studies and Planning, providing students with an understanding the design of buildings, spaces and structures within their context and how this affects the design for new buildings within their setting, contributing to the built environment. Apart from examining the design of buildings and their fabric, the historic, present and future context will also be examined together with the relative legal and planning constraints that affect the built environment. Students will have the opportunity to survey, study, investigate and evaluate a site/building and will learn how to develop an ability to analyse and evaluate the elements of design and built form. In particular the design of buildings will be explored and how design affects setting. As part of this process, students will be expected to develop/enhance their drawing and sketching skills, providing an enhanced understanding of design analysis and the affect of design on the built/historic environment through visual media. Design procedures and processes will be examined in the context of design and a brief/proposal will be examined relative a particular site. A proposed alternative design will be for an element of a building/place within the context of the existing environment. Contextual investigations of design proposals will also be appraised. The analysis of design, planning policy and guidance and the way in which they are implemented will be explored. The importance and implications of environmental criteria will also be considered. The module is project based on studio engagement, site visits, and tutorial reviews. Students will work both in groups and individually. Joint staff and student critic and presentations occur. The knowledge and skills required to successfully complete this module are core employability skills for professionals engaged with architecture and architectural technology.

Year 3: Design Technology 1

The module provides the student with an understanding of the relationship between design and technology. The realisation of design into built form requires building technology. However, the technology has a very real influence on the generation of the design. Students will have the opportunity to explore technology strategically as well as to develop it in detailed solutions. The importance of economics in technical design will also be explored. An appreciation of materiality will be developed together with techniques of technical drawing. Rationalised building methods will be explored together with methods of specification. Detailed technical drawings will be produced together with technical reports including the rationale behind the drawings and their technical specification. The module is project based with studio teaching. Teaching will be by means of lectures and tutorials. Joint staff and student criticisms and presentations occur throughout the module. The knowledge and skills required to successfully complete this module are directly relevant to the employment environment. This module requires the student to develop the project work week by week over the entire trimester in order that regular individual and collective tutorials can occur. Students are encouraged to contribute by positive and constructive criticism of their own work and that of others.

Year 3: Modelling Sustainable Architecture

This module has been designed to give students an insight into some of the issues and design processes associated with the design of sustainable architecture. Students will have the opportunity to work as a member of a design team working on a number of modelling tools to simulate the environmental performance of buildings. The module is based of the Building Research Establishment's BREEAM approach to the design of responsible architecture; considering the effects a building has on local resources and global warming. Aspects of heating and electrical energy use, pollution, occupancy comfort, transport, and embodied energy are investigated and combined to produce a building design that will have the minimum impact on the natural world. The work focuses on low energy low impact passive design solutions to environmental problems. Both the passive and active design features are explored and exploited to produce an environmentally friendly building design. It is strongly recommended that you have studied the module Environmental Services and Construction Technology in which much of the background theory and concepts are introduced, before attempting this module. The module is delivered by blended learning via LMS, so good access to the internet is essential.

Year 3: Architectural CAD

This module is intended to give students and built environment practitioners an appreciation of the growing importance of advanced three-dimensional Computer Aided Design (CAD) and Building Information Modelling (BIM). It will give hands-on

training in some of the most up-to-date software complying with the latest British and European Standards. Many companies are now realising the benefits of developing a "single model" of individual building projects within their CAD environment. This allows them to generate working drawings from the model - plans, sections and elevations - and to coordinate the construction in a 3D environment. They can then develop and refine the model over the life of the building, not only through the design and construction phases but also into the management phase. This leads to an increased level of data re-use and resolution of cross-disciplinary design and coordination issues at a much earlier stage. Recent developments in software have allowed building geometry to be represented by intelligent "objects", making the goal of a single model environment all the more attainable. Instead of drawing a wall as a series of lines and inserting a graphic symbol to represent a door, this new technology allows users to draw 3D walls directly and to insert a component such as a door, which will automatically create a structural opening in the wall. In this module, intelligent object-orientated design methods will be employed to create a virtual building model. Students will gain an appreciation of the substantial benefits such systems can offer in terms of client visualisation and design flexibility.

Year 4: Project Evaluation and Development

The module provides the student with the opportunity to explore the various issues that need to be evaluated when considering a building development from inception until final completion and retention and / or disposal of the building. The context and content of this module integrates knowledge and skills obtained from previous management and design modules. It examines them in a holistic manner and explores their complex inter-relationships. Issues related to the client, the site, planning, financial appraisal, design technology, legal, health and safety and environment will all be examined within a theoretical and practical framework. The module develops the student's ability to comprehend the totality and implications of the development process and to make reasoned value judgements as to its potential feasibility. This is achieved by a detailed examination of local planning policies for the site coupled with a financial analysis of the proposed scheme by use of traditional and modern forms of valuation techniques. The module also focuses on project appraisal, pre construction processes, construction and post construction processes, marketing disposal and evaluation. The module is project based with studio teaching which is undertaken by various strategies such as formal group lectures, group seminars and individual tutorials. Site visits are arranged where appropriate to underpin student knowledge and understanding of practical issues. Joint staff and student criticisms and presentations occur throughout the delivery. Employability skills Students will assess a site for future development opportunities in a manner that satisfies a potential client's need in terms of financial reward, design, procurement, management and cost in use or final disposal of the completed project. Students will improve their communication skills both in terms of report writing and oral presentations to their peers and tutors. Analytical skills will be developed through employment of financial appraisal and risk management strategies.

Year 4: Architectural Technologies Research Project

This module represents the research culmination of each student's development through previous learning undertaken on their course. It provides an opportunity for students to demonstrate their ability to undertake a meaningful study and investigate an Architectural Technology subject, issue, or problem and to produce a usable outcome that can be incorporated into practice. Advice can be offered around choosing a research topic and producing a proposal during a briefing session delivered towards the end of the academic year prior to that in which students undertake their Major Design Project. The research will be carried out under the supervision of an academic member of staff – however, the early part of the module is also supported by taught classroom sessions. These taught sessions enable students to develop research and study skills in respect of reviewing and analysing literature, developing a research question, collecting, presenting and analysing data, and managing the research process. In addition to the taught sessions, a minimum of four supervision tutorials will take place during the trimester in which the module is studied. It is each student's responsibility to make contact with their tutor to arrange appointments. The proposal will identify the subject area, the aims of the study, the rationale for it, and the method statement. Students are also required to identify a minimum of 6 literature sources that will be used. The proposal is to be submitted early in the module, the exact date being in the Module Guide. Proposals must be approved before a tutor is allocated and before students proceeds with the research. Where proposals are not approved, students will be counselled and required to re-submit the proposal to the required standard. Advice will be provided regarding the writing of the proposal. The research project requires students to demonstrate analytical, deductive, investigative and written communication skills in relation to their chosen subject. Students will deploy a wide range of skills that they have developed during their course, including initiative, self-motivation, time-management, analysis and integration of data and information together with the organisational skills needed for such a piece of work. The research should be submitted in accordance with the date published in the Module Guide.

Year 4: Dissertation/Major Design Project (Arch Tech)

This Module recognises Architectural Technology, the technology of architecture, as an essential function routed in design and a major influence on the project process, building performance and building construction. It's primary aim is to develop Architectural Technology students as future design professionals responsible for ensuring that design solutions result in buildings and structures that are constructed economically and perform efficiently and effectively within the context of user needs and environmental, regulatory and budgetary requirements taking account of the fundamental link between design and the technological, environmental, cultural, economic and social parameters. An elemental approach to architectural technological design will be examined in an integrated way within the context of a student led Major Design Project and Strategic Report. The module develops knowledge base and practical skills, acquired in previous module learning, to evaluate client requirements, architectural design & synthesise technological solutions for medium complexity buildings. It explores the theory and practice of appraising, selecting and justifying the design and production of buildings and their constituent components. The interface between the major elements of construction, such as the roof, walls and floors will be critically examined, especially within the strategic framework referred to above. The skills required in the design of components, their specification and their production will be developed, together with an appreciation of their manufacture on-site buildability and lifecycle performance in use. The skills required to successfully complete this module are central employability skills for the architectural technologist. Continual development throughout the year is required to acquire these skills and consequently the module is project based with studio teaching. Learning support will be by means of lectures, site visits, seminars and tutorials of both design drawings and models. Joint staff and student critiques and presentations occur throughout the module and student preparation, design development and regular attendance are vital to achieving a meaningful learning experience leading to successful learning outcomes. Module delivery will be via periodic lectures and studio tutorials – where a student managed studio environment is expected to be maintained. Student's work must clearly demonstrate: - Architectural Design Development and Technology Integration - Technical performance - Integrated health and safety - Environmental Sustainability - Buildability in construction detailing - Evidence of life-cycle cost and assessment - Innovation - Integration of building fabric, structures and services - Inclusive Design considerations

Year 4: Conversion and Adaptation of Buildings

The key aim of studies in this module will be to develop an understanding of user needs in relation to economic re-use of existing buildings by extending, adapting, altering and conserving buildings. This module has been designed to enable students to use a typical building to demonstrate principles and criteria to be applied to achieve a holistic approach to the future treatment of a building over its whole life-cycle; enhancement and/or conservation of built environment; appropriate and creative technology and specialist economic appraisals. Students complete an in-depth case study either individually or as a group. The student will need to be aware of the concepts of extension, conversion and adaptation of existing buildings, and maximisation of economic viability of buildings together to enhance user needs, modern design concepts, landscaping, environmental and green issues together with low energy issues and sustainability. Students will need to study aspects of architectural periods and types of building including components and materials of construction commonly used in the types of building under study and life-cycle options. It will be important for students to acquire a range of analytical skills to enable them to measure existing and proposed building performance from a number of standpoints and be in a position to select a range of re-use options which can be employed by a building owner. Ancillary to this aim will be the acquisition of a critical awareness of the construction options available to a building owner seeking to maximise the economic viability of a building and be aware from detailed reading and research how new works, alteration and adaptation can enhance use of an existing building.

Year 4: Construction Technology and Innovation

This module has been designed for stage 3 students, so as to capitalise on previous technology modules. It will consist of a series of lectures together with structured tutorial sessions. The lectures will focus on a particular topic whilst the tutorial sessions will be used to allow the students to work in small groups. These tutorial meetings will be formally conducted within accepted procedures, and their content will be properly recorded in minutes. In the lecture sessions the focus will be on current construction issues and trends of a technological nature. Methods of special construction will be critically reviewed. The module culminates in a formal presentation, during which the students are encouraged to use a variety of illustrative methods to support their work. This is backed up by written proposals containing elements of both group and individual work. Employability skills Students will acquire knowledge related to current construction issues and special forms of construction. They will also demonstrate an understanding of alternative forms of construction. The module will improve their communication, team building and intellectual skills as well as developing professional awareness.

Year 4: Technological Building Analysis

This module develops the students underpinning knowledge and practical skills required to evaluate and analyse technological design approaches for historic and contemporary buildings of medium complexity. It explores the theory and practice of appraising, selecting and justifying the design and production of buildings their elements and constituent components. An elemental approach to technological analysis will be examined in an integrated way. Students will have the opportunity to explore and research buildings from both textbooks, journals and on site physical analysis in order to undertake a reverse science approach to learning. The relationship between the major elements of construction such as the roof, walls and floors will be critically examined through sketching, report writing and technical drawing, especially within a strategic framework related to structure, environmental services, fabric and sustainability. The module will also cover knowledge and skills required within the designing of components, their performance specification, life-cycle and cost analysis, production processes, quality control, and associated trades , together with an appreciation of their on-site buildability and raw material extraction, molecular characteristics and environmental impact. The skills required to successfully complete this module are central employability skills (Communication, Decision making, Problem solving, Working with others) for the architectural technologist and will help develop an appreciation for industry-based roles in the architectural technology field.

Optional Modules

(Subject to availability)

Year 4: Professionalism, Values and Ethics

Built Environments affect and concern everyone in society. Built Environment is both a public and private matter. All facets of Built Environment - ecological, aesthetic, technological, economic, historical etc - need to be evaluated in terms of values and ethics, so that what is 'good' and 'right' can be judged. The conceptual basis of value-systems and ethics is debated. This module relates mainly modern - but some older - building scenarios to some ways of values/ethics analysis and thought. There is much emphasis on discussion, in which students' own views are welcome and can be tested against both theory and the experiences of others. Building scenarios such as special projects (eg those related to the Olympics or to the millennium), development plans for areas such as Chelmsford, and historical conservation, are subjected to scrutiny: who is doing this, why, for whose benefit, to whose disadvantage? This scrutiny is in terms of ecological, aesthetic, technological, economic, historical and similar factors. Justification of choices made in planning, architecture and design are discussed in terms of goals, actions and outcomes. Underlying values/ethics are explored: is what is being done 'good' or 'right' in terms of practical results, fundamental principles, or other objective criteria? This leads on to developing one's own views on Built Environment values/ethics, both as a person and as a future professional.

Year 4: Project Management

This module is designed to develop the students' knowledge of basic management theories, and to demonstrate their relevance and application in the planning, organisation and control of construction projects. Students will be encouraged to research appropriate theories, skills and competencies related to the life cycle of a project from the client's conceptual vision, through the project identification and definition stages, applying appropriate project implementation, execution and control processes to effect successful closure of a project. The module aims to change the students vision from a contract administration viewpoint to the broader perspective required in the project management approach. For many students this will involve standing back from their everyday role on a project, and to consider the holistic integrated nature of the project management role on a construction project. Thus, whilst recognising the value of many of the skills acquired by students in the contract administration modules, the module will develop the specialist techniques which question the usual functional and organisational boundaries. Students will be encouraged to develop an appreciation of the strategic relevance of project management, and the unique features of project management which distinguish it from other forms of management. Students will be required to research and develop operational techniques used in the planning, scheduling and control of projects to demonstrate that they understand the processes and mechanisms necessary to ensure the effective delivery of the project objectives.