

Course Information Sheet

BSc (Hons) Quantity Surveying

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

Quantity surveyors are in demand around the world, and can often move into top managerial posts. On this course you'll learn to provide strategic advice and services as construction projects are designed and developed.

Quantity surveyors look after the financial management of construction projects, from concept through to design, build, maintenance and disposal. They play a vital role in deciding whether projects are financially viable. They also provide consultancy services to clients: evaluating the economic feasibility of a project, development costs, procurement options, contractual arrangements and legal constraints.

Construction forms part of our wider environment, economy and society. You'll explore the scientific, social, legal, technical, ethical, economic and political aspects of the built environment. We'll help you understand issues such as value for money, health and safety and the environment.

Using industry-standard software you'll learn to measure and cost a range of construction projects. Guest lecturers will share their experiences and expertise with you, highlighting the latest ideas and issues in quantity surveying.

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 you measure your progress. Besides exams, this includes assignments, presentations, practical work and group work.

Fees

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

Additional Costs

General stationary and a calculator - £100

Modules

Core Modules

Year 1: Foundation in Engineering, Computing and Technology

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

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

In addition to these fundamental skills, Students will cover the subjects underpinning the technological disciplines. Fundamental mathematical skills will be covered, alongside pre-calculus, followed by an introduction to calculus and vector and matrix arithmetic. Students will also be introduced to Classical mechanics, and its application to real-world scenarios. Students will be introduced to the fundamentals of computer science, learning about the principles behind programming and applying them through a series of practical coding exercises. Students will undertake a multi-disciplinary group project as they learn about the collaborative nature of engineering, and design from a broader perspective of business.

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

- Interactive Learning Skills and Communication (ILSC)
- Information Communication Technology (ICT)
- Critical Thinking
- Maths for Scientists
- Maths for Engineers
- Physics for Engineers
- Fundamentals of Computing
- Engineering Design

Year 2: Construction Economics

Students will also gain an understanding of basic microeconomic and macroeconomic principles and how they impact on firms in the Built Environment. This allows students to develop an appreciation of the importance of the economy on the industry in which their careers are located. The learning experience combines formal lectures with workshops and tutorial discussion to provide a foundation of understanding. Students are also expected to read not only text material but also web-based source material to gain an appreciation of current issues and debates. Students should be able to demonstrate in their assessment that they have undertaken their own research following guidance from the module leader. The employability skills developed in this module are the ability to read and understand abstract concepts and to be able to write coherently about economic issues. Also students should be able to work independently.

Year 2: Professional Surveying Practice

The aim of this module is to provide an introduction to the roles and work of the Chartered Surveyor. The module will be delivered by the Course Leaders for Building Surveying (BS), and Quantity Surveying (QS). The module commences with an overview of the surveying professions. It will provide students with a general knowledge and understanding of the history and background of the surveying professions and the RICS, along with the types of organisations in which surveyors are employed. The roles of the surveyors will be explained, together with an outline of their main activities. The Module explores the roles and activities undertaken by the Chartered Surveyor throughout the development process. Teaching of the module will then be split into individual disciplines of Building Surveying, and Quantity Surveying, thus enabling students to gain basic knowledge and skills specific to their chosen discipline.

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: 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: Introduction to Civil Law and Legislation

This module introduces built environment students to the structure and processes of the English legal system, to the sources of the law, and to those basic legal concepts and skills which such students need to address more detailed legal issues in later modules. It is the essential foundation to the development of the legal skills necessary in the provision of sound advice to clients in a student's professional career. The module will focus in particular on the English Civil Law, as this is the branch of the law most relevant to students both in subsequent law modules and in professional careers after completing the surveying degree course. However, certain Criminal Law topics will be included where these are necessary to understand or draw a distinction between processes in the two branches of the law. The essential purpose of this module is to benefit students who may not have had the opportunity to study law previously. It will provide guidance to students on information, materials and sources to equip them with a basic understanding of the nature and structure of the English legal system, Parliament and law making, the court structure and precedent, legislation and case law, and legal terms and language. Students will be guided to legal sources and materials, and will be taught how to research law appropriate to their studies, using both published references and internet resources. A key aim of the module is to develop the students research skills, specifically in the field of legal issues affecting their work, together with their ability to analyse research material, and to marshal material and facts into cogent advice and reports. Whilst this introductory module will focus on the English law, it will provide an insight into the growing importance of the European context affecting English law

Year 2: The Built Environment Work Sector

This module is intended to support the development of understanding of the nature of the work sector in the broadest sense including the environments in which the sector operates, its performance within these contexts and factors that influence the operation of organisations. Students will cover the generic work together as a whole group focusing on the role of the professions in the built environment sector and opportunities for employment and career progression. The students will then split into different subject specialisms. Construction Management, Construction and Design, Building Surveying, Real Estate Management, Property and Surveying, Quantity Surveying students Students will examine man in his environment and his attempts to control the development of society politically, socially and economically through the medium of land use in both organic and planned terms from earliest civilisation to the present day. Multicultural perspectives and issues within Built Environment is discussed. The module introduces the student to the complications of the present day structure of the building and development industry including the roles of the leading participants and the development of the organisation by examining the historic growth of the systems up to the present day situation. Civil Engineering students Students will cover earthworks and groundwork techniques together with the principles and practice of earth-moving plant selection, safety, cycles and economics. Soil stabilisation techniques of dynamic consolidation, vibratory systems and grouting are also included as well as foundations suitable for these systems. In addition conventional piled foundations will be covered. Temporary and permanent support techniques, such as cofferdams; contiguous piling and diaphragm walls are discussed. Long-span low-rise and medium rise structures will be discussed in terms of material selection, construction methods, foundation types and the performance of

different of claddings.

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: 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 3: Management Practice

This module aims to facilitate the development of each individual student's knowledge and approach to management and to lay the foundations for the development of their approach to management. Management is a personal undertaking and every manager will manage differently based upon their knowledge, understanding, beliefs and experiences. The aim of this Module is to encourage each student to develop their own approach to management by establishing a solid foundation of management knowledge and practice; integrating these with their own values, experiences and goals, that will provide a basis for the life-long development of their management skills. The module focuses on developing the ability to apply theory to practice and to enable student's to develop practical approaches to managing in a built environment. The module uses case studies to demonstrate the application of concepts and principles. The module is based on a sound understanding of the theories and practice of management, reinforced by examples of best practice drawn from a wide range of organisations and industries, together with an appreciation of the context and constraints that influence organisations and management. The module will consider the main activities of management from an integrating perspective, together with identifying and developing the qualities required to be a successful manager, including leadership. The module adopts a „middle of the road" approach to management, establishing a central point of reference that will allow student's to critically evaluate alternative perspectives and theories in relation to each topic. Employability skills Students will acquire management skills and knowledge that will provide an essential element in their employability and career development. It will improve their analytical, problem-solving and communication skills, as well as developing their professional awareness and understanding of organisations.

Year 3: Construction Procurement

This module examines the process of procurement and tendering for construction works, analysing the decisions made

throughout the project life cycle which affect the commercial strategy used to procure the project. It considers traditional 'selective competitive tendering' procedures for the full range of contractual arrangements; the content and impact of published reports and legislation; and the development of team-working, partnering, PFI, PPP and other arrangements in the procurement process for construction works in the UK. The application of research and statistical analysis to bidding and marketing, and the concepts of risk and uncertainty throughout the process, are analysed in the context of deciding an appropriate commercial strategy for any particular project. The module will make extensive use of case studies to enable the student to analyse a variety of procurement options and select suitable procurement routes within given constraints. The module also includes an outline comparison of UK procedures with those in the EU and USA, considering their main features and differences.

Year 3: Quantification and Costing

This module intends to introduce an understanding and appreciation of the production of costs associated with a range of construction operations and projects. Students will therefore study the principles and methodology in the computation of construction costs throughout a project's life cycle, including relevant commercial factors and risk etc. This will involve identifying and assessing all direct and indirect costs related to construction works as well as an understanding of the factors required to be considered at tender adjudication. Students will also gain an understanding of the measurement and pricing of maintenance and repair work involved in the running and upkeep of buildings using the relevant measurement rules and recognised good practice. Students will also consider the use of Building Information Modelling within project development.

Year 3: Quantity Surveying Practice 1

This Module is a problem-solving Module that takes typical scenarios and problems encountered during the construction process. It requires students to analyse and define problems, develop a range of standard and innovative solutions then provide professional advice to clients. Its focus is the application of theory to practice. The Module develops the knowledge and understanding gained from the study of other Modules, integrates this with additional knowledge from the Module to solve the problems encountered. Throughout the Module, emphasis is placed on the development and provision of professional, industry-standard solutions. Deliverables take the form of reports, documents, letters, etc. that provide useable information to clients. Considerable importance is placed upon the form and presentation of these written documents, and the professionalism that they communicate; often the only tangible output produced by professional surveyors. All written documents are expected to be produced to a professional standard. The aim of the Module is to enable students to develop their professional skills. It facilitates the development of the personal, interpersonal, professional practice and business skills that are essential to all quantity surveyors. It also develops student's cognizance of ethical issues, professional responsibilities, liabilities and rules of conduct.

Year 3: Construction Contract Law

This module seeks to develop the students' understanding of the legal context of their work and the practical context of this legal framework. Specifically within the context of construction contracts. It will develop skills within the framework of common law contracts and will equip students with the knowledge and analytical skills relevant to standard forms of construction contracts. Study will cover the essential features and principles of creating a legally enforceable contract and the principles of breach and remedies. For this the students will be required to apply the learning outcomes of previous law modules. Knowledge attained will be applied to the detailed study of the various provisions that should be contained within standard contracts used in the UK construction industry. Students will be required to analyse and draw comparisons between the provisions in the various standard forms of construction contract under a number of life-like scenarios. Implications of current legislation that may impact on the running and administration of construction projects will also be considered. Students will also explore the various methods of dispute resolution that may be available to the parties to a construction contract. The role of the Technology and Construction Court will also be considered, including the examination and analysis of recent rulings and judgements.

Year 3: Quantification and Measurement

This module intends to introduce an understanding and appreciation of quantification and measurement through the various stages of the development process of a building project. The module seeks to develop skills in interpreting drawn and written information and of presenting that material in appropriate quantified descriptive form to facilitate the analytical processes necessary for accurately assessing the cost of construction works. The content of the module will cover the knowledge, skills and competences necessary to quantify a range of construction and civil engineering work in accordance with the relevant standard forms of measurement from project initiation through to design completion. The students will be expected to interpret and apply the principles and rules contained within the appropriate measurement rules and demonstrate an understanding of the need to

quantify work at the various stages of design development.

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: 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: Environmental Services and Construction Technology

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 affect 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. This second level module is designed to give students a broad understanding of the way we build commercial and industrial buildings. It is intended to lead on from the study of domestic construction to considering the functional requirements of single-storey industrial sheds and multi-storey framed structures in concrete and steel. In addition, the affects 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 module is delivered by blended learning via VLE, so good access to the internet is essential. Assessment is by a series of online multi-choice questions and reports on the performance of buildings.

Year 4: Design Economics

This module is designed to provide a working knowledge of the factors that affect the economics of building design and the cost of buildings. It will provide the background necessary for offering advice to clients or the design team on matters concerning economy, cost or price at the various stages of the design process. The range of possible scenarios will be envisaged and a

'tool kit' of principles, concepts and technologies will be provided to allow a range of scenarios to be managed. The sources of data to assist the surveyor will be explored. Students will develop cost models from these. The module is relevant for a practitioner in a private practice or in construction as increasing amounts of design work is carried out by construction firms. This is largely a practical module and there will be opportunities to develop appropriate skills and techniques.

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.

Year 4: Quantity Surveying Practice 3

This Module is a problem-solving Module that takes typical scenarios and problems encountered during the construction process. It requires students to analyse and define problems, develop a range of standard and innovative solutions then provide professional advice to clients. Its focus is the application of theory to practice. The Module develops the knowledge and understanding gained from the study of other Modules, integrates this with additional knowledge from the Module to solve the problems encountered. Throughout the Module, emphasis is placed on the development and provision of professional, industry-standard solutions. Deliverables take the form of reports, documents, letters, etc. that provide useable information to clients. Considerable importance is placed upon the form and presentation of these written documents, and the professionalism that they communicate; often the only tangible output produced by professional surveyors. All written documents are expected to be produced to a professional standard. The aim of the Module is to enable students to develop their professional skills. It facilitates the development of the personal, interpersonal, professional practice and business skills that are essential to all quantity surveyors. It also develops student's cognizance of ethical issues, professional responsibilities, liabilities and rules of conduct.

Year 4: Major Project (Surveying)

This module represents the culmination of each student's development through learning undertaken on their programme. It provides an opportunity for students to demonstrate their ability to undertake a substantial original study to investigate a subject, issue, or problem and to produce a usable outcome. Students carry out an original piece of work that may be either an expert study or a research study. Advice will be offered on choosing a research topic and producing a proposal in a briefing session delivered towards the end of the academic year prior to that in which students undertake the dissertation. The research will be undertaken under the supervision of an academic member of staff but the early part of the module in trimester one 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 academic year in which the module is studied. It is each student's responsibility to make contact with their tutor to arrange appointments. 10% of the marks for the dissertation/major project are for attendance and performance at these tutorials which must be recorded in an appendix to the dissertation. The module is in three parts. The proposal will identify the subject area, the aims of the study, the rationale for it, the method statement and an ethics statement and evaluation. Students are also required to identify a minimum of ten literature sources that will be used. The proposal is to be submitted early in semester one, the exact date being in the Study Guide. Proposals must be approved before a tutor is allocated and work proceeds with the study. 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 major project/dissertation 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 programme including initiative, self-motivation, time-management, analysis and

integration of data and information together with the organisational skills needed for such a large piece of work. The dissertation should be submitted in accordance with the date published in the Study Guide. Students will also identify their achievements and skills and provide a plan for progression via the production of a c.v. and exit plan, which must be submitted as an Appendix to the Dissertation.

Year 4: Quantity Surveying Practice 2

This Module is a problem-solving Module that takes typical scenarios and problems encountered during the construction process. It requires students to analyse and define problems, develop a range of standard and innovative solutions then provide professional advice to clients. Its focus is the application of theory to practice. The Module develops the knowledge and understanding gained from the study of other Modules, integrates this with additional knowledge from the Module to solve the problems encountered. Throughout the Module, emphasis is placed on the development and provision of professional, industry-standard solutions. Deliverables take the form of reports, documents, letters, etc. that provide useable information to clients. Considerable importance is placed upon the form and presentation of these written documents, and the professionalism that they communicate; often the only tangible output produced by professional surveyors. All written documents are expected to be produced to a professional standard. The aim of the Module is to enable students to develop their professional skills. It facilitates the development of the personal, interpersonal, professional practice and business skills that are essential to all quantity surveyors. It also develops student's cognizance of ethical issues, professional responsibilities, liabilities and rules of conduct.

Year 4: Commercial Management

This module seeks to develop the students' understanding of the commercial management function performed by quantity surveyors, particularly in a contractor position. It aims to develop an understanding of the procedural, legal and practice issues involved in all aspects of the commercial management of construction projects, together with the ability to apply these in a recognised commercial form. The Module will develop students' knowledge, analytical and problem-solving skills related to commercial management, together with their ability to produce professional quality advice and to communicate this effectively to clients. The Module will cover all the essential features of commercial management, including cost and financial management, cash flow, value engineering, procurement and management of sub-contractors, dispute resolution, Throughout the Module, emphasis is placed on the development and provision of professional, industry- standard solutions. Workshops will analyse and examine a wide range of commercial management scenarios and situations with a view to establishing the principles involved, alternative methods available and the selection of preferred courses of action. Considerable importance is placed upon the form, presentation and usability of the documents used to communicate advice and information, and the professionalism that they communicate.

Year 4: Risk and Value Management

This module is designed to introduce the student to the Risk and Value Management process. The module will enable the student to distinguish between risk and uncertainty and the influence these issues may have on the technological, managerial and financial aspects of the project life cycle. The student will be introduced to Value Engineering techniques along with the concept of Value management workshops and how these can be used throughout the project life cycle, case studies will be used to enhance the understanding of the student along with identifying the key issues relating to the use of Value Engineering throughout the project life cycle. The student will be introduced to the concept and use of the risk management workshop, and how these workshops are used to identify and distribute project risks to members of the project team throughout the project life cycle. The module is of a practical nature using case studies to enhance the student experience and provide a greater understanding and appreciation of Risk and Value over the project life cycle.