



A'Sharqiyah University

College of Engineering

Department of Civil and Construction Engineering

Bachelor of Science in Quantity Surveying and Commercial Management

Course Descriptions

University Requirements (12 CH)

ISLM101 Islamic Civilization (3 CH)

This course aims to introduce students to the concept of civilization, the composition and evolution factors, introduce them to the most important political and administrative systems and economic and social development in the Islamic civilization, and aims to the statement of contributions to Islamic civilization in other civilizations, especially the European civilization, also aims to publicize the importance of the site Oman and how to interact with other previous civilizations in different eras, and the factors that allowed it to be a centre of cultural divisions history.

ENGL101 English Communication Skills I (3 CH)

This course develops students' proficiency through grammar instruction and fluency exercises. While the emphasis of the class is on speaking and listening, there are also reading and writing exercises which reinforce the grammar and vocabulary students learn. Finally, students are required to participate in discussions regularly basis and give several presentations.

ENGL102 English Communication Skills II (3 CH)

This course further develops reading sub-skills, comprehension, and vocabulary. The texts are more demanding lexically and structurally than ENGL101 and are mainly literary. Written and oral activities require students to respond to these texts critically.

MNGT313 Entrepreneurship (3 CH)

This course is an introductory course in Entrepreneurship and Innovation. The course aims to expose students to business venturing and entrepreneurial activity. The students would apply knowledge and skills acquired during the course by developing and evaluating their business ideas. This course is an introductory entrepreneurship course that focuses on the vital role played by entrepreneurs and entrepreneurship in the 21st-century global economy. The process of successfully launching and growing an entrepreneurial venture by applying the entrepreneurial process is examined. The course integrates several different disciplines, ranging from sociology and psychology to economics, finance, marketing, and human resource management. It is a course that mixes theory with practice by applying principles, concepts, and frameworks to real-world situations

College Requirements (22 CH)

PHYS1001 Physics I (4 CH)

This course covers the basic concepts of Physics is fundamental for developing students' understanding of the more applied scientific disciplines such as Chemistry, Biology and other Applied Sciences. Physics 101 is an introductory Physics module focusing on basic principles and concepts in Physics. It is designed for students who will continue their undergraduate degree programs in Engineering and Applied Sciences.

ENGR201 Engineering Drawing (3 CH)

This course provides basic knowledge and skills of engineering drawing so that students can efficiently develop engineering plans and details. Main topics include freehand sketching, principles of orthographic projection, dimensioning, section, isometric and working drawings, 2D and 3D drawings using AutoCAD.

ENGR202 Technical Writing and Presentation (3 CH)

The objectives of this course are to develop engineering students' abilities to improve the communication skills and specialist language knowledge of engineers; to listen to and speak about engineering-related situations; to ask and answer important engineering-related questions; and to present engineering projects in an engaging and convincing format.

MATH2001 Mathematics (4 CH)

This course focuses on some essential goals, which are: apply differentiation and integration techniques, solve ordinary simple ordinary differential equations, perform operations on matrices, define the hyperbolic functions, evaluate the probability and the normal distribution, and use series to approximate functions.

ENGR4004 Engineering Economics (4 CH)

The objective of this course is to introduce the basic concepts of engineering economy and to demonstrate the importance of financial management and engineering decisions in financial project analysis. The topics covered includes an overview of financial accounting, time-value of money, risk in financial decisions, and book and tax depreciation.

ENGR1001 Mechanics of Materials (4 CH)

This course is one in a sequence of mechanics (engineering science) courses that form a foundational component of the engineering curriculum. it covers two-dimensional stresses and strains and deflections of statically determinate members subjected to axial, torsional and transverse loads, buckling of columns, Mohr circle, and stress transformation.

ENGR322 Summer Internship (0 CH)

This course is basically focused on practical and project based-training, research and development, communication and development skills, costing and safety awareness, exposure to data collection, troubleshooting, improvement, design and development of systems, and understanding on system operation as whole.

Program Requirements (85 CH)

CVEN2002 Civil Engineering Materials (4 CH)

This course introduces students to geology and its impact on the design and construction of civil engineering constructed facilities. Students will learn about the engineering elements of rocks and geologic processes from an engineering perspective.

CVEN2001 Construction Surveying (4 CH)

This course covers the basic measurement procedures and the use of surveying instruments. It introduces students to the principles and practices in measuring distance, elevation, and angles. Also, it includes the determination of areas and volumes, setting out of construction works, and introduction to GPS and GIS. The course has intensive fieldwork.

SURV201 Design Economics and Cost Planning (4 CH)

This course introduces students to knowledge and understanding of various aspects of economics and cost planning. It further encourages students in application of knowledge and understanding to the cost management of design development on a project through an individual assignment.

CNMN3007 Construction Technology I (4 CH)

This course prepares students with the knowledge and skills of construction technology so that they can be applied efficiently to construction of domestic buildings. This course is focused on students learning the key principles of construction technology including a description of the site, determination and description of the foundations and substructure, design and description of the structure of a domestic building of specific design, determination and description of the envelope of domestic buildings and other structures and a description of the methods used to construct domestic buildings and other structures.

CNMN3008 Construction Technology II (4 CH)

This course prepares students with the knowledge and skills of construction technology so that they can be applied efficiently to construction of industrial and commercial buildings. This course is focused on students learning the key principles of construction technology including a description of the site, determination and description of the foundations and substructure, design and description of the structure of industrial and commercial buildings, determination and description of the envelope of industrial and commercial buildings and other structures and a description of the methods used to construct industrial and commercial buildings and other structures.

SURV202 Standard Method of Measurement (3 CH)

This course shall contribute to the fundamental understanding of quantification and costing of building projects. It develops various skills in standard procedures for the preparation of bills of quantities for civil engineering works, the pricing, measurement of quantities of work and expression of quantities of work. It further contributes in understanding how the bill of quantities enables efficient tender preparation, interim valuations, valuing change and Final accounting to evaluate the value of work completed once the contract has been completed. This course hence develops a sound knowledge of theory and application of knowledge by applying principles, concepts and frameworks to real world situations.

CNMN3005 Contract Administration (4 CH)

The objective of this course is to improve construction contract administration by providing education related to the administration and enforcement of contract requirements during the construction phase of the project. It covers contractual process from pre-tender stage to taking over, an overview of various general conditions of contract as well as the pre-award issues, checklists of documents required, time charts and other tools of contracting, the role of the client's project manager/ Engineer in administering a construction contract, understanding of contract law, legislation and the specific forms that they have used.

CNMN3009 Construction Site Planning and Control (4 CH)

This course aims to equip the student to be able to: identify processes to implement a construction plan; to identify concepts and principles of site control, describe management decisions for a given site and conditions; and identify processes to manage the activities of subcontractors; identify potential construction hazards and risks; implement processes to deliver time, cost and quality objectives for a construction site; identify and review site procedures.

CNMN3002 Construction Safety (4 CH)

This course covers legislation, theory and practice relating to management of occupational safety and health in the construction industry. It examines basic elements of a safety and health program for design professionals and construction contractors including both national and international regulatory requirements.

CNMN3003 Construction Equipment (4 CH)

This course provides basic knowledge of construction equipment to students so that they can efficiently identify types and uses of construction equipment, select proper equipment for a given job, estimate its cost, schedule and plan its usage, and manage an equipment fleet.

SURV301 Quantification and Costing I (3 CH)

This course is an introductory course helps to develop a standard procedure for the preparation of bills of quantities for civil engineering works. The pricing, measurement of quantities of work and expression of quantities of work is set out in this course. It further demonstrates how the bill of quantities enables tenders to be prepared efficiently and to evaluate the value of work completed once the contract has been completed. It also introduces students to schedule of works, schedule of rates, provisional sums and Interim Valuations.

SURV302 Civil Engineering Standard Method of Measurement (3 CH)

This course aims to introduce the various trades within the construction process including refurbishment and civil engineering works and to develop an understanding of measurement skills and description and specification writing, also being able to produce Bill of Quantities. The course incorporates modern construction techniques and is now contract neutral in order to facilitate use across a variety of contract suites including with NEC, FIDIC and ICC.

SURV403 Quantification and Costing II (3 CH)

This course illustrates the application of the rules of measurement in all classes of Civil Engineering Standard Method of Measurement, and compare the different approaches required with specific contracts (e.g. NEC, FIDIC). It requires the students to develop a complete package of Quantity

estimation as per the rules laid down under the various work classifications and standard Bills of Quantities in the level of submission-ready contract of a real-life project as an individual assignment.

CNMN3004 Construction Law (4 CH)

This course prepares students with the basic knowledge and skills of construction contracts and professional-engineering ethics so that they can be applied efficiently in dealing with various legal issues pertaining to construction projects. The course firstly provides an overview of the judicial system, sources of law, and principles of law including law of contract, tort, labour law and the mechanisms available for disputes resolution. Secondly, it provides basics of contracting which form the legal framework for construction activities including skills, knowledge, and conceptual tools needed to successfully manage various types of construction projects.

SURV303 Procurement and Tendering (3 CH)

This course examines the tender process and how construction projects are procured. Tendering principles and the process of procurement selection will be investigated by analysing the various strategies within both the public and private sectors using case study building and infrastructure projects.

SURV404 Construction Commercial Management (3 CH)

This course involves developing knowledge and practical understanding of construction commercial management. It introduces commercial concepts related to construction management like producing and evaluating proposals, procurement, competitive bidding, pricing and bid evaluation, outsourcing, etc.

CNMN4002 Mechanical and Electrical Systems (4 CH)

This course is introducing the students to the mechanical, electrical, and plumbing systems in buildings to include basic design principles, conservation measures and green building practices

CNMN4004 Construction Accounting and Finance (4 CH)

This course prepares students with the basic knowledge and skills of construction accounting and finance so that they can be applied efficiently in operating profitable projects and corporations. It is the study of the principles of accounting and financial management of construction companies. It covers key topics of accounting systems, project profitability, cash flow management, and tools for making financial decisions.

ENGR4002 Engineering Project Management (4 CH)

This course prepares students to build their skills in areas of Project Management. It includes training on MS Project 2013/Primavera P6. Main topics cover organizational structure on a project, roles and responsibilities of project manager, the components of time management, purpose of activity definition and sequencing, different diagramming techniques, factors affecting activity duration, estimating activity duration, usage of mathematical analysis techniques for schedule development, schedule control, and the importance of schedule adherence.

CNMN4005 Building Information modelling (4 CH)

This course is the study of the fundamentals of Building Information Modelling (BIM). In this course, students will learn BIM's use in the industry (by different disciplines), examine geometry, spatial

relationships, building information, quantities and properties of building components, and understand the benefit and improvement areas BIM offers.

CNMN4007 Sustainable Construction (4 CH)

This course prepares students with the fundamentals and principles of sustainable construction. It provides information on technical requirements of the LEED Green Building Rating System for New Construction & Major Renovations (LEED-NC). Additionally, it provides an understanding of how LEED is being used nationally throughout the design and construction industries to define various levels of sustainable project design; the resources available for successfully achieving LEED project certifications.

SURV4007 Risk and Value Management (4 CH)

This course provides an understanding of the processes and techniques for identification, analysis and management of risks and uncertainties inherent in major projects. The course also develops the students' skills so that they may be effective quantity surveyors, commercial managers or project managers and contribute to improved project performance in terms of meeting client's primary project objectives of cost, time, quality, environmental sustainability, and health and safety.

CNMN4001 Research Project (4 CH)

This course is for students to demonstrate, synthesize, and apply their knowledge in quantity surveying and commercial management through the development of a set of application-specific modules for a construction project. Students work individually or in groups under close supervision of faculty members. The aim is to prepare the student for professional quantity surveying and commercial management practice. The course involves research, a literature review, data collection, analysis and production of a research report and presentation.

University Electives (Choose three courses of 12 CH)

CVEN4007 Environmental Engineering (4 CH)

This course teaches environmental science from engineering approach. It covers an introduction to environmental engineering, water pollution, air pollution, soil contamination, hazardous and solid waste.

ENEN4001 Renewable Energy (4 CH)

In this course, students will receive an overview of underlying technological principles of renewable energy including solar energy, biomass, hydro, wind, wave tidal and geothermal energy sources. Students will gain an understanding of some techniques involved in the analysis of economics of renewable energy.

SURV4005 Property Valuation (4 CH)

This course develops student's knowledge in applying valuation methodologies to commercial, retail, industrial and specialized properties. Concepts of property investment analysis for property development are also introduced.

SURV4006 Project Finance (4 CH)

This course aims to develop an understanding of the main sources of finance for major projects and the relevant products associated with project finance. The course also provides an understanding of the processes and techniques used to evaluate the bankability of major projects and for raising project finance in both the public and private sectors in the UK and overseas markets.

ENEN4002 Solid Waste Management (4 CH)

This course focuses on key engineering and technical aspects and it provides detailed knowledge and skills in the management, treatment, disposal and recycling options for solid wastes. It covers the nature and environmental effects of solid wastes and sludge including hazardous wastes, engineering management principles, practices, and techniques for management of solid and sludge wastes, solid waste generation, storage, collection and transport processing, resource recovery and disposal, administration of solid waste management, and health and safety considerations.

COEN5087 GIS Applications in Civil Engineering (4 CH)

This course prepares students with the basic knowledge and skills of Geographic Information System so that they can be applied efficiently in civil, construction and environment engineering. Main topics cover an introduction to GIS, spatial data structures, map projections and coordinate systems, raster and vector spatial data models, topology and relational query, selecting and editing features, feature proximity, containment, intersection, spatial joins, overlays, buffers, geo-processing, image processing, supervised and unsupervised classification, and image rectification.

PHIL2001 Professional Ethics (4 CH)

This course is an introduction to the ethical issues related with professional life. It informs students what a profession is and what it means to act professionally. This course enhances students to identify and analyse ethical issues and dilemmas associated with work and also enable them to reach a reasoned conclusion. Topics include basic understanding of ethical concepts and theories; professions and professionals; ethical decision-making process; ethical issues related with healthcare, business, technology, industry and environmental issues.

OJTR406 Industrial Internship I (0CH)

This course is an internship course in which students need to spend two semesters in the industry of related fields. This internship course provides ASU's students with the opportunity to obtain experience in a typical work environment. Students will gain exposure to various aspects of general practices along with valuable industry experiences. This process will allow students to apply the theoretical knowledge in a professional work environment. This internship course is also intended to enhance the students' skills, competences, and employment prospects.

OJTR407 Industrial Internship II (0 CH)