DEPARTMENT OF ENGINEERING

ARCHITECTURE & CIVIL ENGINEERING

COURSE DESCRIPTION FOR DIPLOMA (CIVIL)

COURSE CODE	COURSE DESCRIPTION	CREDIT HOURS
CECE 2110N	**Applied Mechanics C:** The course provides a thorough understanding of the basic principles of the equilibrium of rigid bodies and its importance for the design and analysis of structures. Also a basic understanding of the structural responses of various simple structures subjected to static loads including trusses, frames, machines and beams. Provides an understanding of the internal forces in statically loaded simple structures and their relevance to the integrity and soundness of such structures. Assist students in understanding the principles of motion of particles and bodies. Train students to identify, formulate, and solve models in engineering design. Help students understand the importance of verification and validation of engineering computations through simple analytical models.	3
MATH 2100N	**Calculus II:** The course provides the student with further calculus and conceives multiple integration applications. The course enables the student to grasp various techniques of integration. Perceive the partial derivatives in dealing with functions of two and three variables. Conceive multiple integration, realize the mathematical model to formulate the governing differential equation of a problem and predict the solution under different sets of conditions	3
CECE 2240	**Design of Structure 1**: The course enables the student to establish design loads, understand the design code used for designing structures. Discuss the use of basic approaches and more unique methods to analyze structures by hand. Understand the design of components and complete structures from initial conceptual design to the final design. Identify the responsibility of the engineer to be ethical in dealing with others and in the presentation of results of analysis and design.	3
CELS 2100	**Engineering Surveying:** The course provides the student with basic principles of Surveying. The student will be able to develop the ability to observe and record angles and linear measurements. Understand the method of producing a plan from survey fieldwork. Gain an experience to work as a team member and cooperate and exchange ideas during fieldwork. Develop the skills and personal qualities necessary to use surveying instruments with confidence.	3
CECE 2250	**Final Year Project 1:** he course enables the student to integrate the various areas of knowledge he/she gained through the program and to consolidate personal confidence in working independently or an a team and improve his/her spirit of performance	3
PHIL 2200	**Formal Logic:** The course aims to develop the student's ability to think and function effectively, logically and analytically, effectively using oral and written communication. The student will be able to: apply analytical skills in problems solving, present a reasoned argument, function creatively in work environment and deal with people rationally.	3
CECE 2210	**Mechanics of Materials:** The course enables the student to understand physical properties of materials. Also the course enables the student to Analyse and design structural members subjected to tension, compression, torsion and bending using fundamental concepts of stress, strain, elastic behavior and inelastic behavior.	3
CECE 2220	**Theory of Structure 1:** The course provides the student with the basis for structural analysis to enable him/her to Identify, formulate and solve appropriate models to analyze the behavior of structures. Apply the moment and area methods, virtual work method, plane and space frame method, and deflection of plan frame method to analyze the behavior of determinate structures. Apply the slope deflection method and moment distribution method to analyze the behavior of indeterminate structures.	3
CECE	**Building Drawing:** The course enables the student to understand the basic principles of drafting and	3

2235	planning of buildings. It enables the student to develop AutoCAD skills for drawing building plans, elevation, section and building details	
ARCH 2120	**Materials & Method of Construction :** The course provides the student with the knowledge of on various systems and components of a building and the materials and its application used for the same. They students learn to handle different construction materials and techniques. They bare made able to identify building standards and codes. The students also perform experiments on materials and work in the team collaboratively.	3
PHIL 3108	**Business Ethics:** This course is to equip the student with highest ethical standards that will guide him/her through real life dilemmas. It also enables the student to understand the concept of value, Islamic and Omani values, appreciate and respect ethnic and cultural diversity.	3
ENGL 2100	**Technical Communication:** This course is designed to provide the learner with writing skills for academic and practical purposes. Speaking skills relevant to presentation and delivery are also targeted. Other skills namely reading and listening will be improved as a result of the focus on writing skill.	3

DEPARTMENT OF ENGINEERING

CIVIL & ARCHITECTURAL ENGINEERING

COURSE DESCRIPTION OF HIGHER DIPLOMA (CIVIL)

COURSE CODE	*COURSE DESCRIPTION*	CREDIT HOURS
CECE 3100	***Fluid Mechanics*** The course enables the student to understand the fluid properties, the stability concepts of floating bodies and their applications, hydrostatic force, Bernoulli's equation to find velocity or pressure for fluid, types of manometer and its applications.	3
ARCH 3120	**Materials & Methods of Construction II** The course enables the student to understand building envelope systems, building materials and assemblies, legal codes, standards and legal responsibilities. It enables the student to comprehend code compliance and technical documentation as it applies to building construction and assemblies and work collaboratively in group.	3
CECE 3121	**Theory of Structure II** The course enables the student to understand and apply complex structural analysis methods to predict and understand the behavior of structures. Flexibility method, stiffness method, influence lines, plastic analysis and yield line theory is studied by the student in this course.	3
CECE 3110	**Building Construction Estimating** The course introduces the student to the financial aspects of construction by acquainting him/her with issues such as cost estimation, risk analysis, bidding strategy, tender evaluation, and variation orders to enable him/her to view project as commercial undertaking. The student will be able to: Comprehend project costs estimating and analysis. Appreciate the risks and uncertainties associated with a project and how they are considered and mitigated. Understand bidding strategies and tender evaluation. Calculate the cost of labor, material and plant for a civil engineering project. Calculate the cost of subcontracts for a civil engineering project.	3
CECE 3241	**Design of Structures II** The course provides the student with the basic concept of structural steel design. The course enables the student to: Establish design loads (gravity, wind and seismic loads) based on building codes. Provide background information of design requirements. Develop the design of different elements of structures. Use the design codes in order to produce the final design of structures. Maintain ethics within the framework of professional conduct.	3
PHIL 3200	**Formal Arabic Communication** The course enables the student to: Develops the student's skills in writing and speaking and function their vocabulary. Acquire the skills for performing different types of presentations suited to different audiences and purposes.	3
MATH 3120	**Engineering Mathematics** The course enables the student to: Perceive the basic concepts and definitions of differential equations. Develop the skills of representing a real physical situation by means of differential equations through modeling approach. Recognize various types of differential equations. Apprehend the standard techniques for solving differential equations. Distinguish between the general solutions, particular solutions, complementary solutions, exact solution and approximation solutions and their proper interpretations	3

CECE 3230	**Geotechnical Engineering I** The course introduces the student to the principles of soil mechanics. It enables the student to: Provide a general introduction to Geotechnical Engineering with emphasis on fundamental aspects and role within the civil engineering. Provide a background of theoretical procedures in Geotechnical Engineering. Provide understanding on physical testing of soils.	3
CECE 3201	**Hydraulics** The course aims to impart the students with a basic knowledge of Hydraulics. The student will be able to understand fluid properties, know the stability concepts of floating bodies and their applications. Know the Bernoulli equation to find velocity or pressure for fluid. Calculate the fluid properties such as density, specific weight and viscosity. Calculate the pressure at any point by using manometers.	3
CECE 3200	**Environmental Engineering** The course enables the students to understand the different elements of the Environment and how they interact, the chemistry and biochemistry concepts that support environmental engineering, quality of water and wastewater treatment. The student also understands the function of unit treatment processes. Students study water distribution and wastewater collection systems and the procedure of designing wastewater treatment process. They understand the effects of human activities on the environment.	3
ENGL 3100	**Public Speaking** The course enables the student to: Understand the basic principles of public speaking. Acquire the skills for performing different types of presentations suited to different audiences and purposes. Understand the principles of informative speaking and persuasive speaking. Be acquainted with the analysis of speeches. Observe, analyze, critique, and provide feedback on developing speech forms. Perform an introductory speech, a demonstration speech, an informative speech, a persuasive speech, and a special occasion speech.	3
CECE 3350	**Higher Diploma Project** The course enables the student to: Integrate the various areas of knowledge he/she gained through the program. Consolidate personal confidence in working independently or an a team and improve his/her spirit of performance	3

DEPARTMENT OF ENGINEERING

ARCHITECTURE & CIVIL ENGINEERING

COURSE DESCRIPTION FOR BACCALAUREATE (CIVIL)

COURSE CODE	COURSE DESCRIPTION	CREDIT HOURS
CECE 4244	**Advanced RC design** The course enables the student to: Understand behavior and design aspects of more complex reinforced concrete structures. Understand basic concept of pre-stressed concrete members under normal and unusual loads such as wind and earthquake.	3
CECE 4210	**Environmental Engineering** The course enables the student to: Understand the different elements of the environment and how they interact. Understand the function of unit treatment processes. Perceive water distribution and wastewater collection systems. Know the procedure of designing wastewater treatment technology.	3
CECE 4110	**Highway and Transportation Engineering** The course enables the student to: Understand transportation system and vehicle characteristics. Realize traffic data measurement and interpretation, traffic flow model and traffic control of highway transportation system. Grasp the traffic operations that relate to traffic flow and highway capacity. Evaluate appropriate solutions for highway design and traffic engineering problems.	3
PHIL 4100	**Oman Civilization** The course enables the student to: Understand the geography of Oman. Be familiar with the significance of Omani civilization during pre- and post-Islam eras. Understand Islamic civilization, its development, and its supporting factors.	3
CECE 4002	**Foundation Engineering** The course enables the student to understand the applications of Geotechnical Engineering in the design of footings, retaining walls and in the assessment of stability of slopes. It also enables the student to understand types of deep foundations and theirdesign principles.	3
MATH 3101	**Statistics & Probability** The course enables the student to: Understand the essential laws and principles governing the topics of probability and statistics. Grasp the basic concepts and ideas involved in probability and statistics. Conceive how to apply statistical methods and probability theory in practical situations.	3
CECE 4230	**Pollution & Environmental Control** The course enables the student to understand the air quality standards, the concept of meteorology, the sources of pollution & its reduction techniques and acquaint with pollution control equipments	3
CECE 4122	**Theory of Structure 2** The course enables the student to: Identify, formulate and solve appropriate models to analyze the behavior of structures. Analyze structures using the following methods. Influence lines for beams and statically determinate frames. Utilize structural analysis software to analyze structures	3
CECE 4254	**Final Year Project 3** The course enables the student to: Integrate the various areas of knowledge he/she gained through the program. Consolidate personal confidence in working independently or an a team and improve his/her spirit of performance	3

CECE 4270	**Project Management** The course enables the student to: Understand the concepts of project management. Grasp the concepts of organization in the construction industry. Be familiar with project planning and scheduling and cost management. Be abreast of new developments in the construction industry and contract procedures.	3