

CEQS 2101	Construction Technology I	3 Credit Hours
Prerequisites	CECE 1100	
Goal	To introduce the student to building, their components, method and process of construction and detailing of works at site.	
Objectives	Outcomes	
<p>The course should enable the student to:</p> <ol style="list-style-type: none"> 1) Understand the building and their components. 2) Be acquainted with some building materials and their properties and uses 3) Comprehend the method and process of construction systems 4) Understand the function, design principles, method and process of construction and detailing of works at site. 	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1. Describe buildings and their components 2. List, define, and describe the uses of building materials and their properties 3. Identify and describe the function, design principles and process of construction and detailing of works at site for the following: Substructure, Frame, Walls, floors, Staircases, Doors and windows, Roofs and ceilings and Finishes 	



ACT
English Language Center
Course Outline
Technical Communication (ENGL 2100)
Credit Hours 3
Lecture Hours 3

1. Course Description

At the end of this course, the students will have learned to write on technical subjects for the practical needs of a special audience. They will also have learned to process information, objectively and persuasively, making use of information and communication technologies.

2. General Aims

- ♣ Develop clear and accurate written and oral presentation of business,
- ♣ technical and scientific information.
- ♣ Promote critical thinking, continuous self- assessment and peer review.
- ♣ Encourage independent research skills.
- ♣ Prepare students for their professional environment.

3. Learning Outcomes

At the end of the course, students should be able to:

- ♣ Analyze, synthesize, evaluate and interpret information and ideas.
- ♣ Write in a style appropriate to the technical purpose and audience.
- ♣ Identify and write various kinds of business and technical documents.
- ♣ Plan and manage writing projects in terms of drafting, designing, revising and editing documents.
- ♣ Write collaboratively, providing peers with constructive feedback on their work.
- ♣ Develop effective style and tone, following businesses and technical writing guidelines.
- ♣ Analyze charts, graphs, specifications, diagrams, etc. and respond orally and in writing.
- ♣ Design visually effective documents (e.g. layouts, formatting, incorporating graphics and visuals into documents)
- ♣ Prepare and deliver an effective mixed media presentation.

4. Resources

- a. McMurry, D.A. (2002). *Power Tools for Technical Communication*, Harcourt College Publishers.

Web sites

www.-unix.oit.umass.edu/~pwtc/tw/lonks.html
<http://techpubs.com/resources.html>
<http://garnet.indstate.edu/kliener/eng305t/lessons/04html>
<http://www.prenhall.com/pfiefer>
<http://www.english.vt.edu/~toomy/researcy.html>



5. Content Outline

- ♣ Written communication in a variety of formats (reports, business letters, memos, employment letters, resumes)
- ♣ Technical text such as definition, description, comparison, classification, instructions and cause and effect

- ♣ Making oral presentations.

6. Learning Activities

- ♣ Discussion: one-to-one, group
- ♣ Listen and take notes
- ♣ Speak to an audience
- ♣ Write formal reports, letters etc.
- ♣ Read and respond orally and in writing.

7. Assessment Outline

♣ Quizzes	5%
♣ Mid-semester Exam	20%
♣ Assignment (Report and Presentation) (Report 20% and Presentation 5%)	25%
♣ Final Exam	50%
TOTAL	100%



Final grades will be based on the following scale:

Letter Grade	Percentage Range	Grade Point
A	90-100	4.0
A-	85-89	3.7
B+	80-84	3.3
B	76-79	3.0
B-	73-75	2.7
C+	70-72	2.3
C	67-69	2.0
Major Requirement		
C-	60-66	1.7
Major Elective		
D	55-59	1.0
F	54 and below	0.0

8. Assessment Specifications

8.1 Quiz (5%)

There will be 1 quiz per semester. The quiz should be answered on the standard paper provided on a topic provided by the tutor. The approximate length of the quiz shall be 250 words, and written in 30 minutes of class time. Printed or electronic dictionaries can be used to minimize spelling mistakes.

8.2 Mid-semester Exam (20%)

Time: 1 hour

Content: One writing task of 300 words covering any topic covered up to the MSE. Refer to the delivery plan.

8.3 Final Exam (50%)

Time: 2 hours

Content: Q 1. A guided task based on an item that was taught during the course.

Q 2. Free writing. The nature of the task determines the length.

8.4 Assignment (25%)

Assignment shall be research-based and can be done by individual students or by a group. The outcome shall be a written report and an oral presentation.

The assignment should include the following:

1. *Secondary Research*: Literature review using books and the internet to discuss the research topic. The literature review should include student's own words, direct quotes, and paraphrasing of the information s/he has searched.

Written Report (20%)

- The report must consist of:
 - Title page (Cover page)
 - Introduction, Body, Conclusion, and Recommendation
 - References & Appendixes
- The Body of the report should be approximately 500 words. The Introduction, Conclusion and Recommendations sections are additional.
- An outline of the report is due 2 weeks after the topic is issued.
- The first draft is due 2 weeks after that.
- The final draft is due before their presentation.
- The reference list should include at least three sources.
- The report must be word-processed, double-spaced on *A4* paper with one inch margins and *size 12 Times New Roman or Arial* font.

Grade Criteria:

- A) Report (20%)
- B) Oral Presentation (5%)

See also the appendix on marking criteria

9. Course Policies

Attendance: Attendance and active participation in class activities are required. Irregular attendance will be dealt with according to item 75 in section 8 of the "College Bylaws for Technical Colleges" (Ministerial Order No. 72/2004). Students must have an official sick leave



from a government hospital or written, signed permission from the HoD/HoC. Three incidences of lateness (exceeding 5 minutes) will be considered one absence.

Late Assignment: For late submission of assignments, students need a legitimate reason and they need to inform the instructor in advance of the reason. Otherwise, assignments will be marked down by 5% (e.g. 80% will be 75%).

Plagiarism and Cheating: Plagiarism is the presentation of another person's work, words, or ideas as if they were one's own. It ranges from an entire assignment which is not the student's own work to specific passages within an assignment which are not the student's own work but taken from a source without acknowledgement. Students are responsible for ensuring that they understand and follow the principles of proper documentation and scholarship.

Cheating is usually understood as copying from another student. However, it also includes a student or a group of students, using or attempting to use unauthorized aids, assistance, material, or methods in assignment, reports, presentations and/or examinations. If an instructor determines that the student has cheated and /or plagiarized, the college will take punitive action and a grade of zero will be assigned for the affected assignment, report, presentation, or examination.



CEQS 2120	Construction Measurement 1	3 Credit Hours
Prerequisites:	MATH 1100	
Co requisite	CEQS 2101	
Goal	To introduce the student to measurement concepts and its relationship with cost and financial administration, the Standard Method of Measurement, and the measurement of some simple works	
Objectives	Outcomes	
<p>The course should enable the student to:</p> <ol style="list-style-type: none"> 1. Understand measurement and its relationship with cost and financial administration 2. Understand the Standard Method of Measurement and its application 3. Comprehend the process of preparing measurements of some construction works 4. Understand specifications and the process of writing them 	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1. Describe the basic concepts of measurement and its relationship with cost and cost control 2. Define and describe the Standard Method of Measurement, its content, and how it is applied in construction 3. Take off quantities and prepare measurements using drawings and specifications for the following: <ol style="list-style-type: none"> a. Surface, trench and pier hole excavation b. Foundation and simple concrete frame structure c. Concrete ground floors and upper floors d. Concrete staircases e. Walls and partitions f. Ceilings and ceiling finishes 4. Define specifications and the process of writing them 	

Class exercise should be done using plans of domestic buildings in Oman



CECE 2230	Building Drawing	3 Credit Hours
Prerequisites	CECE 1100	
Goal	To enable the student to understand and produce working drawings for buildings and building works manually as well as through AutoCAD	
Objectives	Outcomes	
<p>The course should enable the student to:</p> <ol style="list-style-type: none"> 2 Understand the basic principles of drafting and planning of buildings. 3 Developing AutoCAD skills for drawing building plans, elevation, section and details 	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1. Produce manually building drawings including site plans, floor plans, elevations, sections and details. 2. Produce through AutoCAD building drawings including site plans, floor plans, elevations, sections and details. 3. Produce manually and through AutoCAD building drawings for the following building works; Substructures, Frames, Walls, Floors, Staircases, Doors and windows, Roofs and ceilings, Long span roof, Temporary works and External works. 	



CEQS 2110	Building Services I	3 Credit Hours
Prerequisites:	PHYS 1200, CECE 1100	
Goal	To equip the student with an understanding of the basic systems of services within a building.	
Objectives	Outcomes	
<p>The course should enable the student to:</p> <ol style="list-style-type: none"> 1. Understand the basic services within a building and their systems 2. Comprehend the concepts of sound, acoustics and vibration 3. Understand the basic telecommunication systems in a building 	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1. Identify and describe the following <ol style="list-style-type: none"> a. Water supply b. Soil and waste pipe c. Gas installation systems d. Refuse collection and disposal systems e. Electrical installation f. Lighting g. Lightning protection h. Sound, acoustic and vibration i. Telephone system j. CATV k. Solar energy system l. Security system 	

The course should include site visits to provide the student with hands-on understanding of the topics.



CEQS 2202	Construction Technology II	3 Credit Hours
Prerequisites	CEQS 2101	
Goal	To introduce the student to method and process of construction and detailing of works at site for more complex buildings and method of demolition.	
Objectives	Outcomes	
<p>The course should enable the student to:</p> <ol style="list-style-type: none"> 1. Understand the function, design principles, method and process of construction and detailing of complex building components. 2. Be aware of construction planning and control 3. Understand Demolition and renovation works for buildings 	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1. Identify and describe the function, design principles and process of construction and detailing of works at site for the following: <ul style="list-style-type: none"> • Substructure work (Retaining walls and basements) • Long span roof • Pre-fabricated building • Pre-stressed concrete • Temporary works • External works • Built-in fitments 1. Identify the suitable method and process of construction and detailing of works for a given set of conditions 2. Identify and describe the processes and procedures of construction planning and control 3. Demolition and renovation works for buildings more than 4 story high and large floor area 	



CEQS 2221	Construction Measurement II	3 Credit Hours
Prerequisites:	CEQS 2120	
Goal	To equip the student with the ability to produce measurements of complex construction works	
Objectives	Outcomes	
<p>The course should enable the student to:</p> <p>Understand the process of preparing measurements for some complex construction works</p>	<p>The students should be able to:</p> <p>Apply mathematic principles Take off quantities and prepare measurements using drawings and specifications for the following:</p> <ol style="list-style-type: none"> 1. Basement and retaining walls Doors and windows Built-in fitments Long span roof Floor and wall finishes Demolitions and renovation works Mechanical and electrical works Electrical installation Air-conditioning Cold water installations Soil and waste pipe 	



CEQS 2211	Building Services II	3 Credit Hours
Prerequisites:	CEQS 2110	
Goal	To equip the student with an understanding of the advanced systems of services within a building.	
Objectives	Outcomes	
<p>The course should enable the student to:</p> <p>1. Understand the advanced services within a building and their systems</p>	<p>The students should be able to:</p> <p>1. Identify and describe the following systems and their functions:</p> <ul style="list-style-type: none"> a. Fire prevention and fire fighting systems b. Mechanical conveyors in building c. Ventilation and air-conditioning systems d. Building automation systems e. Sewage disposal systems <p>2. Identify where and how the systems are used</p>	

The course should include site visits to provide the student with hands-on understanding of the topics.



PHIL 2108	Business Ethics	3 Credit Hours
Prerequisites:	None	
Goal	To equip the student with the highest ethical standards that will guide him/her through real life dilemmas.	
Objectives	Outcomes	
<p>The course should enable the student to:</p> <ol style="list-style-type: none"> 1. Understand the concept of value 2. Understand Islamic and Omani values 3. Understand, appreciate and respect ethnic and cultural diversity 4. Gain the highest work ethics 	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1. Define the concept of values 2. Define how values develop 3. Understand the effects of religion and society on values 4. Understand the effects of Islamic and Omani values on work ethics 5. Define the concept of ethnic and cultural diversity 6. Understand the importance of ethnic and cultural diversity for society and the world 7. Work with people from different ethnicities/cultures 8. Function in a moral and ethical manner in his/her life 	



CELS 2100	Engineering Surveying	3 Credit Hours
Prerequisites:	PHYS 1200	
Goal	To provide the student with basic principles of Surveying	
Objectives	Outcomes	
<p>The course should enable the student to:</p> <ol style="list-style-type: none"> 1. Provide an introduction to and understanding of the principles and procedures used in elementary surveying 2. Develop the ability to observe and record angles and linear measurements 3. Understand the method of producing a plan from survey field work 4. Gain an experience to work as a team member and cooperate and exchange ideas during fieldwork. 5. Develop the skills and personal qualities necessary to use surveying instrument with confidence 	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1. Apply the knowledge and understanding gained in real practice 2. Carry out basic surveying work 3. Use the surveying instruments in field with confidence in elementary surveying 4. Observe and record the angles and linear measurements 5. Produce a plan from survey fieldwork data 	



CERE 2201	RENEWABLE ENERGY IN CONSTRUCTION	Credit Hours	3
Prerequisites	Physics II	Co requisites	None
Goal	To enable the student to understand the sources of energy and use of renewable energy for building design for optimum use of natural resources.		
Objectives	Outcomes		
<p>The course should enable the student to:</p> <ol style="list-style-type: none"> 1. Understand the existing sources of energy, their use for human consumption and future repercussions. 2. Understand the concept of renewable energy and its importance for built environment in Oman. 3. Understand sources of renewable energy to be used in buildings, their relevance and adoptability for buildings in Oman. 4. Understand installation, operation and maintenance of sources of renewable energy in design of buildings in Oman. 5. Acquire basic knowledge about energy efficient buildings and ecological building design. 	<ol style="list-style-type: none"> 1. Discuss and review the current sources of energy, environmental sustainability and interrelations among energy, environment and society. 2. Evaluate different sources of clean renewable energy; solar, wind, wave, tidal, ocean thermal energy, geothermal, biomass and ethanol fuel. 3. Explain sustainable design and green building strategies and their implementation into mainstream construction practices. 4. Identify and explain energy efficient and recycled materials, system and technologies for their use in construction. 5. Explain passive design of buildings in Oman for minimal use of conventional non-renewable sources of energy. 6. Demonstrate application of solar energy in buildings; explain different types of solar thermal systems available in Oman. 7. Perform installation, orientation and operation of solar panels, PV systems in buildings and other structures. 8. Evaluate and compare the utilization of conventional energy and solar energy, bring out comparison in the form of energy audit. 9. Demonstrate and explain concept of using wind energy in buildings, discuss different types of wind turbines. 10. Perform installation, orientation and operation of wind turbines in buildings. 11. Explain basic requirements to achieve energy efficient building and ecological building design. 		



CEQS 2399	Diploma Project	3 Credit Hours
Prerequisites:	CEQS 2202, CEQS2221	
Goal	To expose each student to the situation where he/she works individually or in a team in a project in the field of quantity surveying	
Objectives	Outcomes	
<p>The course should enable the student to:</p> <ol style="list-style-type: none"> 1. Integrate the various areas of knowledge he/she gained through the program 2. Consolidate personal confidence in working independently or in a team and improve his/her spirit of performance 	<p>The students should be able to:</p> <ol style="list-style-type: none"> 1. Demonstrate communication effectiveness through oral presentations and written reports 2. Present the results of work in a seminar and submit a properly written and edited final report 3. Manage his/her time to achieve a time-constrained target 4. Prepare a Bill of Quantities for a small project 5. Present his/her findings and defend his/her quantity estimates 	

