KOMAR UNIVERSITY OF SCIENCE AND TECHNOLOGY
(KUST)

Engineering Economy Course Syllabus			
Course Title	Engineering Economy		
Course Code	ENC 2203	**No. of Credits**	3
Department	all engineering departments	**College**	Engineering
Pre-requisites Course Code		**Co-requisites Course Code**	
Course Coordinator(s)	Hamid Farangis Zadeh		
Email	hamid.zadeh@komar.edu.iq	**IP No.**	
Other Course Teacher(s)/Tutor(s)			
Class Hours	Section 1: Sunday and Tuesday 09:30-11:00 Room 110 Section 2: Tuesday and Thursday 15:00-16:20 Room 208 Section 3: Monday and Wednesday 08:00-09:20 Room 208		
Office Hours	Thursday 08:00-10:00 (on the third floor, Room 308)		
Course Type	College Requirement		
Offer in Academic Year	Fall 2014		

COURSE DESCRIPTION

Topics covered in this course include: Foundations of Engineering Economy, principles of economic equivalence, how time and interest affect money, nominal and effective interest rates, present worth analysis, annual worth analysis, rate of return analysis, benefit/cost analysis and public sector projects, breakeven and payback analysis, replacement decisions, and depreciation methods.

COURSE OBJECTIVES

1) Introducing basic cost concepts and economic environment,
2) Getting familiar with basics of money/time relations,
3) Learning basic investment assessments,
4) Preparing students to analyze cost/revenue data,
5) Introducing economic analysis in the decision making,
6) Preparing students to apply computer to formulate/analyze economic state,
7) Learning calculation of economics of production, and,
8) Learning basics of applying costs to productivity measurement.

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COURSE LEARNING OUTCOMES

1) Understand the fundamentals of engineering economy and the basic principles of the time value of money (ABET **a** and **e**),
2) Draw the cash-flow diagrams (ABET **e**),
3) Identify and Compare different interest rates i.e., simple, compound, MARR, ROR, nominal and effective (ABET **a** and **e**),
4) Compute equivalent values for time based cash flows of varying complexities (ABET **a** and **e**),
5) Compare economic alternatives based on equivalent present worth, future worth, capitalized cost, payback period, annual worth values and Benefit cost ratios (ABET **a** and **e**),
6) Compute the internal rate of return and evaluate an economic alternative on the basis of IRR (ABET **a** and **e**),
7) Make analytical decisions by replacement and breakeven analysis of different projects/alternatives (ABET **a**),
8) Understand and compute depreciations related to machines/projects (ABET **a** and **e**),
9) Make and write financially prudent decisions and reports in everyday life (ABET **a** and **e**), and,
10) Apply Microsoft Excel to solve economic problems (ABET **k ***).

*****ABET criteria:

http://www.abet.org/uploadedFiles/Accreditation/Accreditation_Process/Accreditation_Documents/Current/eac-criteria-2012-2013.pdf

GUIDELINES ON GRADING POLICY

A	95-100%	**C**	70-74%
A-	94-90%	**C-**	65-69%
B+	87-89%	**D+**	60-64%
B	83-86%	**D**	55-59%
B-	80-82%	**D-**	50-54%
C+	75-79%	**F**	0-49%
W	Withdrawal	**I**	Incomplete

Note: Passing Grade is 65% and above

COURSE CONTENT

1) Introduction, Foundation of Engineering Economy,
2) How Time and Interest Affect Money,
3) Nominal and Effective Interest Rates,
4) Present Worth Analysis,
5) Annual Worth Analysis,
6) Rate of Return Analysis,
7) Benefit/Cost Analysis and Public Sector Projects,
8) Breakeven and Payback Analysis
9) Replacement and retention decision,
10) Effects of Inflation,
11) Estimating Costs, and,
12) Depreciation Methods.

CLASS REQUIREMENT

1) A scientific calculator, and,
2) Microsoft Excel (optional).

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COURSE TEACHING AND LEARNING ACTIVITIES

This course will carried out in 3 hours, 2 times lecture per week. The semester has 15-instructional weeks followed by one week of exam. Course instructor will:

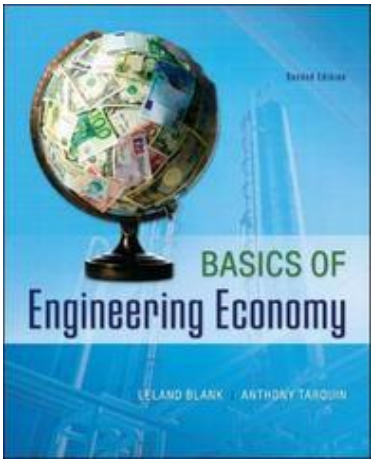
- Utilize power point presentation to present the course information.
- The board space to calculate problems with students.
- There will be in class group work, where student will do in class exercises and turn the assignment to the instructor.

COURSE ASSESSMENT TOOLS

Assessment Tool	Description	Weight
Home Work	The HW will be conducted during the semester; each HW will be given as scheduled and posted on Moodle (ABET **a, e,** and **k**).	**10%**
Quizzes	Quizzes are scheduled as shown in the semester schedule. Students will take 4 quizzes; all quiz grades will be counted toward your final grade (ABET **a** and **e**).	**10%**
Tests	Two tests will be conducted during the semester and each worth 10% of the final grade. The tests will include multiple-choice questions, True/False, short answers, and problem solving (ABET **a** and **e**).	**20%**
Mid-term Exam	The students should find the mid-term exam easer because it will be similar to the cases studied during the semester, but more updated (ABET **a** and **e**).	**30%**
Final Exam	The final exam will be designed to cover all the students' learning outcomes for this course. It will be a closed book exam and no materials are allowed except the one that will be given by the instructor (ABET **a** and **e**).	**30%**

Textbooks:

Blank, Leland P. E., Tarquin, Anthony, *Basics of Engineering Economy*, 2nd ed., McGraw-Hill, 2013.



References:

1) G. J. Thuesen and W. J. Fabrycky, *Engineering Economy*, 9th ed., Prentice Hall, 2000,
2) Newman, Donald G., Eschenbach, Ted G., and Lavelle, Jerome P., *Engineering Economic Analysis*, 9th ed., Oxford University Press, 2012,
3) Blank, Leland P. E., Tarquin, Anthony, *Engineering Economy*, 7th ed., McGraw-Hill, 2008.

COURSE POLICY *(including plagiarism, academic honesty, attendance etc)*

KUST Academic Policy

http://sar.komar.edu.iq/files/Student%20hand%20Book%202013.pdf

Attendance:

- Students are expected to attend all lectures and must attend all examinations, quizzes.
- There is no make-up work for students who miss classes without official permission.
- Student must arrange with the faculty to make-up the missed class.
- Students are subject to the regulation and policies mentioned in the KUST Student Handbook.
- KUST guidelines for lateness are as follows: Three occasions of lateness count as one absence. (You can be considered late the first minute of the lecture time).

GUIDELINES FOR SUCCESS

1. Work both independently and in groups of your study of peers, who can help you understanding the course material.
2. Pay a full attention in the class when your instructor explain the lesson, if you understand 70% directly from the instructor, then the 30% will be just practice exercises.
3. Understanding more than memorizing will help you a lot in passing exams.
4. Working many problems beyond the assigned homework will help mastering.
5. Ask a question when something is not clear.
6. Finally, attend every lecture and getting missed material is your responsibility.

E-MAILETIQUETTEOF COMMUNICATION

Please note the following in regards to e-mail communication:

1. It is your responsibility to update your Komar-email address daily for course updates. Faculty will not be able to contact you if you fail to have an email address and you could potentially miss important information about the course.
2. Email will only be answered if it comes from Komar-email address. Faculty will not respond to unprofessional email addresses.
3. Mail should have a subject heading which reflects the content of the message.
4. Your message should begin with an appropriate salutation, including the name of the person being addressed, and end with thanks followed by your full name of the sender.
5. Emails that do not follow the above guidelines, or are written in an unprofessional and / or disrespectful manner as well as anonymous emails will not be addressed.
6. Failure to check e-mail or Moodle may result in you missing important assignments and subsequently affect your grade.

CELL PHONES

All cell phones and beepers are expected to be switched to vibrating mode if available and turned off completely if this feature is not an option. Disruption of class due to beepers or a cell phone will not be tolerated and the student will be asked to leave class. All other electronic equipment that the faculty member deems not essential to the provision of academic learning is prohibited from being used in class.

REVISIONTO THE SYLLABUS

This syllabus is subject to change. It is the duty of the instructor to inform students of changes in a timely fashion after approval of Quality Assurance Office (QAO).

Course calendar: Please check the academic calendar for 2014/2015
http://komar.edu.iq/wp-content/uploads/2014/01/f12.jpg

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***Note: any attempt from your side for rescheduling any of the quizzes, exam or even homework is not accepted**

Week	Dates	Topics (Chapters)	Course Discussion
1	14-18 SEP	Introduction Foundation of Engineering Economy	
2	21-25 SEP	How Time and Interest Affect Money	
3	28 SEP - 2 OCT	Nominal and Effective Interest Rates	HW 1
4	12-16 OCT	Present Worth Analysis	Quiz 1
5	19-23 OCT	Present Worth Analysis	HW 2
6	26-30 OCT	Annual Worth Analysis	Test 1
7	2-6 NOV	Rate of Return Analysis	
8-13 Nov 2014 Mid-term Exam: Chapters 1, 2, 3, 4, and 5			
8	16-20 NOV	Rate of Return Analysis	Quiz 2
9	23-27 NOV	Benefit/Cost Analysis and Public Sector Projects	
10	30 NOV-4 DEC	Breakeven and Payback Analysis	HW 3
11	7-11 DEC	Replacement and Retention Decision	Quiz 3
12	14-18 DEC	Effects of Inflation	Test 2
13	21-25 DEC	Estimating Costs	HW 4
14	4-8 JAN 2015	Depreciation Methods	Quiz 4
15	11-15 JAN	Review Week	
17-22 Jan 2014 Final Exam			