Model No.12
Course Specifications
Engineering Economy and Financing

University : Benha university

Faculty : Shoubra Faculty of Engineering

Department offering the program: Mechanical Engineering Department
Department offering the course: Mechanical Engineering Department

1- Course Data

Course Code:	**Course Title**:	**Study Year:**
GEN292	Engineering Economy and Financing (Elective)	Second Year
Specialization:	Mechanical Production Engineering	

Teaching Hours: Lecture: 2 Tutorial/ Practical: 0

2- Course Aim

For students undertaking this course, the aims are to:

By the end of the course the students acquiring and understanding of:

1. Basic concepts of engineering economy, engineering economy applications and methods of financing the projects
2. Preparing and presenting an economic feasibility study.

3- Intended Learning Outcomes of Course (ILO'S)

a- Knowledge and Understanding

On completing this course, students will be able to:

a.1) Understand the principles of engineering economy and classification of costs. (A.1)

a.2) Define the present worth, future worth, rate of return and minimum attractive rate of return. (A.2)

a.3) List steps to choose among different alternatives. (A.3)

b- Intellectual Skills

At the end of this course, the students will be able to:

b.1) Compare between net present worth and future worth. (B.1)

b.2) Derive the algebraic relations for total cost, total revenue, manufacturing cost and break-even point. (B.7)

b.3) Solve the problem of equipment replacement, depreciation and taxes. (B14)

c- Professional Skills

On completing this course, the students are expected to be able to:

c.1) Use the algebraic relations to solve economic problems. (C.6)

c.2) Use the data table of discrete compound and interest rate of return to solve the economic problems. (C.5)

c.3) Prepare the plan for equipment replacement. (C.9)

d- General Skills

At the end of this course, the students will be able to:

d.1) Communicate effectively. (D.3)

d.2) Lead and motivate individuals. (D.6)

4- Course Contents

No.	Topics
1	Basic concepts
2	Annual compounding
3	Algebraic relationships
4	Discrete, periodic comou.
5	Continuous compounding
6	Equivalence
7	PW, FW, EUAS / EUAC
8	Net present value, rate of r.
9	Payback period, benefit c.
10	Choosing among alternate.
11	Equipment replacement
12	Depreciation and taxes
13	Economic feasibility study

5- Teaching and Learning Methods

5.1- Lectures
5.2- Class activity
5.3- Case study
5.4- Assignments / homework

6- Teaching and Learning Methods of Disables

Nothing .

7- Student Assessment

a- Student Assessment Methods

1	Five assignments to assess knowledge and intellectual skills.
2	Three quizzes to assess knowledge and intellectual skills.
3	Mid-term exam to assess knowledge, intellectual, professional and general skills.
4	Final exam to assess knowledge, intellectual, professional & general skills.

b- Assessment Schedule

No.	Assessment	Week
1	Assignments	2, 4, 7, 10,13
2	Quizzes	3, 6, 10
3	Mid-term exam	8
4	Final exam	16

c- Weighting of Assessments

Assessment	Weight
Mid Term Examination	10 %
Final Term Examination	80 %
Oral Examination	0 %
Practical Examination	0 %
Assignments and Quizzes	10 %
Other types of assessment	00 %
Total	100 %

8- List of References

a- Books

1- Course Notes prepared by instructor.

b- Essential Books (Text Books)

1. Jose A. Sepulveda, Willium E.Souder @ Byron S. Gottfried, "Engineering Economics", Mcgraw-Hill Book Company, NW, 1984.
2. H. G. Thuesen, W. J. Fabrycky and G. J. Tuesen, "Engineering Economy", Prentice-Hall, Inc., N.J, 1971.

c- Recommended Books

1. E. Paul DeGarmo, William G. Sullivan & James A. Bontadelli, "Engineering Economy", Macmillan publishing company, NW, 1990.

Course Coordinator: Dr. Mamdouh Mohamed Elsayed Soliman

Head of Department: Prof. Dr. Osama Ezzat Abdelatif

Model No.11A
Course Specifications: Engineering Economy and Financing

University: Benha university

Faculty : Shoubra Faculty of Engineering

Department offering the program: Mechanical Engineering Department

Department offering the course: Mechanical Engineering Department

Matrix of Knowledge and Skills of the course

No.	Topics	week	Basic Knowledge	Intellectual Skills	Professional Skills	General Skills
1	Basic concepts	1	a1	b1		
2	Annual compounding	2	a1,a2		c1	d1
3	Algebraic relationships	3	a1	b2	c1	d1
4	Discrete, periodic comou.	4		b2	c2	
5	Continuous compounding	5	a1		c2	d2
6	Equivalence	6	a1	b1		
7	PW, FW, EUAS / EUAC	7	a2	b1	1c,c2	d1,d2
8	Net present value, rate of r.	8	a2	b2	c2	
9	Payback period, benefit c.	9	a2	b3		
10	Choosing among alternate.	10	a2		c3	d1,d2
11	Equipment replacement	11	a3	b2,b3	c3	
12	Depreciation and taxes	12	a2,a3	b1,b3		d2
13	Economic feasibility study	13	a1,a2	b1		

Course Coordinator: Dr. Mamdouh Mohamed Elsayed Soliman

Head of Department: Prof. Dr. Osama Ezzat Abdelatif

Matrix of course aims and ILO's

Course Title: Engineering Economy and Financing **(**Elective)

Code: GEN292 **Lecture**: 2 **Tutorial/ Practical:** 0

Program on which the course is given: B.Sc. Mechanical Production Engineering

Major or minor element of program: Minor

Department offering the program: Mechanical Engineering Department

Department offering the course: Mechanical Engineering Department

Academic year / level: 2014-2015 Second Year / Second semester

Date of specifications approval: 2014

Course aims	a	b	c	d
1- Basic concepts of engineering economy, engineering economy applications and methods of financing the projects	a1 a3	b1 b2	c2 c3	d1
2- Preparing and presenting an economic feasibility study.	a2	b3	c1	d2

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