نموذج مواصفات المقرر

جامعة : الفيـــــوم **كلية : التربيـــــــــــة**

Relevant Program*: B.Sc. (Science & Education), Mathematics ,Basic Education*
Major or minor element of programmes : Major

Department offering the program: Educational Depts. + Math Department Faculty of Science
Department offering the course: Mathematics

Academic year / Level : Second Year (Second Term)

Date of specification approval : 20 / 10 / 2008

A- Basic Information

Title: Applied Mathematics (2) Code : ١٧٢٢٢ Mat

Credit Hours:--- Lecture: 4

Tutorial: 4 Practical: Total: ١١٢

B- Professional Information

1- Overall Aims of Course

To give a brief outline of the mechanics (static and dynamic).

Understand and learn the concept of virtual work, center of gravity, catenary, shearing force, two dimensional motions.

Apply the concepts of mechanics for solving some physical problems.

2- Intended Learning Outcomes of Course (ILOs)

A- Knowledge and understanding:

١- أ. Knowledge and understanding of: Rules of static laws.
٢-١.أ Knowledge and understanding of: Rules dynamic laws.

B- Intellectual Skills:

١-٣-ب Apply the concepts of mechanics for solving some physical problems

٢-٣-ب Apply the mechanics methods in calculus.

C- Professional and Practical Skills:

١-٢.ت Virtual work, principal of center of gravity, catenary, shearing force, two dimensional motion, simple harmonic motion.

٢- .ت using two dimensional motion in many applications.

D- General and Transferable Skills:

١-٢.ث Group working.

١-٣.ث Problem solving.

١-٥.ث Able to convey the meaning of the above concepts to others.

3- Contents:

Topic	No. of Hours	Lecture	Tutorial / Practical
1- Velocity and acceleration, Hook's law, virtual work.	**16**	**4**	**16**
2- Center of gravity by Integration, stability of equilibrium	**16**	**4**	**16**
3- Catenary, shearing stresses and bending moments.	**8**	**2**	**8**
4- Two dimensional motion: (Cartesian, Polar and tangential coordinates), projectiles.	**8**	**2**	**8**
5- Simple harmonic motion, motion in circle, canonical pendulum, motion of body with variable mass.	**8**	**2**	**8**

4- Teaching and Learning Methods:

4-1: Lectures.

4-2: Discussion sessions.

4-3: Research assignment.

5- Student Assessment Methods:

5-1: Written exam (mid-term) to assess the level of knowledge and understanding.

5-2: Class work (quizzes) to assess the level of Intellectual skills to discuss and solve some problems .

5-3: Written exam (at the end of term) to assess the ability to pass the Exam .

Assessment Schedule:

Assessment 1: Written exam (mid-term) Week 7

Assessment 2: Class work (quizzes) Week 4 - 8 - 12

Assessment 3: Written exam (at the end of term) Week at the end term.

Weighting of Assessments:

Mid-Term Examination	**30**	%
Final-Term Examination	**70**	%
Oral Examination		%
Practical Examination		%
Semester Work		%
Other Types of Assessment		%
Total:	100%	

Any formative only assessments: Homework

6- List of References:

6-1: Course Notes:

Course notes prepared by staff of math. Dept.

6-2: Essential Books (Text Books):

Dr.Bosana Mohamed: Applied Mathematics book

6-3: Recommended Books:

Mechanics Fundamental, By: Wood, McGraw-Hill, 1996.

6-4: Periodicals, Web Sites… etc:

http://www.eulc.edu.eg/eulc/libraries/index.aspx
www.eric.com
http://www.aghandoura.com/links.htm
http://www.almekbel.net/
http://mathworld.wolfram.com/http://www.math.niu.edu

http://www.mathforge.net/
http://www.numerical-recipes.com/
http://www.math.ubc.ca/people/faculty/cass/Euclid/byrne.html
http://ocw.mit.edu/OcwWeb/Mathematics/index.htm

7- Facilities Required for Teaching and Learning

Library contains new edition books with enough copies.

Data show

Computer Lab

Course Coordinator: Dr.Bosana Mohamed

Head of Department Prof. Kamal Ahmed El Dab

Date: / /