Course Syllabus – Fall/First 2018 Engineering Mechanics (*12210281*)

Department of mechanical Engineering

Meetings: Su., Tue., Thu., 1-2 PM   **Room**: H108
Educationist: ME. Mohammad A. Shaikha   **Office:** E313
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Course description: This course is an introduction to learning and applying the principles required to solve engineering mechanics problems. Concepts will be applied in this course from previous courses you have taken in basic math and physics. The course addresses the modeling and analysis of static equilibrium problems with an emphasis on real world engineering applications and problem solving.

Course objective: to provide the student with a clear and thorough understanding of the theory and applications of engineering mechanics covering statics, mechanics, and dynamics. Most important to provide a means for developing the students' ability to formulate equilibrium equations.

Text books: - Meriam J.L and Kraige L.G., Engineering Mechanics, statics 7th edition, John Wiley & Sons, New York.

- Hibbeler R.C., Mechanics of Materials, 8th edition, prentice hall, upper saddle river, 2011

Grading Policy:

> **Two Exams @ 20%/each**
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> **Assignments : 15% (Quizzes)**
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> **Final Exam : 45 %**

Topics Covered & course outline:

Topic	WEEK	Reading
- Force systems: 2D force systems, Moment, and a couple system.	1, 2	Ch. 2 (Meriam)
- Free body diagrams and Equilibrium condition (2D)	3, 4, 5	Ch3. (Meriam)
- Exam I **- Distributed Forces: center of mass and centroids.**	6, 7	Ch. 5 (Meriam)
- External and internal forces, Beams, flexible cables.	8, 9	Ch. 5 (Meriam)
- Stress, Shear, and Strain	10, 11	Ch. 1, 2 (Hibbeler)
Exam II. **- Torsion, Bending, shear and bending diagrams.**	12, 13	Ch. 5, 6
- Mechanical Vibration	13, 14	Class Notes
- Review, project presentation	15	
- Final Exam	16	