Arab Academy for Science & Technology and Maritime Transport
College of Engineering & Technology

Department of Basic and Applied Science
Smart Village Campus

BA141 Mechanics 1 Fall 2013

Course Outline

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Objective:	• Introduce students to understand the basics of statics equilibrium of particle and rigid body. • Recognize equilibrium conditions and objectives. • Identify different types of support and its reactions. • Use free bodies diagrams and vector analyses to determine the sum of the forces. • Explain the concepts of friction.
Text:	R.C Hibbeler "Engineering Mechanics Statics" 13th. Edition, Prentice Hall, 2013.
Grading:	Evaluating system 1- Quiz 1 5th week 10 marks 2- 7th Week Exam 20 marks 3- Quiz 2 10th week 5 marks 4- 12th Week Exam 15 marks 5- Pre- Final (Year work) 10 marks 6- Final Exam 40 marks Total 100 marks

Week of		E V E N T	
1	Sept.22nd	**Lecture**	Rectangular Component of a Force (Two-Dimensions) Page: 32-39 Examples : 2.5, 2.6, 2.7
		Tutorial	Problems : F2.8, F2.10, F2.12, 2.32, 2.33, 2.40
2	Sept.29th	**Lecture**	Rectangular Component of a Force (Three-Dimensions) Page:43-55 Examples : 2.8, 2.9, 2.11
		Tutorial	Problems : F2.15, F2.17, 2.61, 2.62, 2.75, 2.76
3	Oct.6th	**Lecture**	Equilibrium of a Particle (Springs & Cables) (Two-Dimensions) Page: 85-100 Examples : 3.1, 3.2, 3.3, 3.4
		Tutorial	Problems : F3.1,F3.5,3.1,3.4,3.11,3.12,3.15, 3.18, 3.20,3.41
	Oct.13th	**Holiday**	**Al-Adha Feast**
4	Oct.20th	**Lecture**	Equilibrium of a Particle (Springs & Cables) (Three-Dimension) Page: 103-111 Examples : 3.5,3.7,3.8
		Tutorial	Problems : F3.8,F3.10,F3.11,3.43,3.44,3.47,3.61
5	Oct.27th	**Lecture**	Moment of a Force Page:117-120 and 129-136 Examples : 4.1, 4.2, 4.5, 4.6
		Tutorial	Problems : F4.1,F4.5,F4.9,4.4,4.8,4.9,4.10+ **Quiz No. 1 (10 marks)**
6	Nov.3rd	**Lecture**	Equilibrium of Rigid Body Page.: 199-207 and 216-235 F.B.D & Unknowns (1,2,3,4,5,6,8,10) Examples : 5.1, 5.5, 5.7, 5.9
		Tutorial	Problems : F5.1,F5.3,F5.6,5.10,5.12,5.18,5.31
7	Nov.10th	**Lecture**	**Seventh Exam (20 marks)**
		Tutorial	Discussion about the 7th Exam
8	Nov.17th	**Lecture**	Truss – Method of Joint Page: 263-271 and 275-278 Examples : 6.1, 6.3
		Tutorial	Problems : F6.2, F6.5,F6.6,6.4,6.6,6.14,6.16
9	Nov.24th	**Lecture**	Truss – Method of Section Page: 280-288 Examples : 6.5, 6.6
		Tutorial	Problems : F6.8,F6.11,6.27,6.29,6.32,6.36
10	Dec.1st	**Lecture**	Frames Page: 294-319 Examples : 6 .9,6.16,6.20
		Tutorial	Problems : F6.14,F6.16,6.69,6.82,6.83+ **Quiz No. 2 (5 marks)**
11	Dec.8th	**Lecture**	Friction. Page: 387-402 Examples : 8.1, 8.3
		Tutorial	Problems : F8.1, F8.2
12	Dec.15th	**Lecture**	**Twelfth Exam (15 marks)**
		Tutorial	Discussion about 12th Exam
13	Dec.22nd	**Lecture**	Mass Moment of Inertia (Thin Circular Disk-Thin Plate-Slender Rod)+(Parallel Axis Theorem–Composite Bodies) Page: 549-557 Examples : 10.12,10.13 (a)
		Tutorial	Problems : 10.102,10.103
14	Dec.29th	**Lecture**	Revision
		Tutorial	Revision
15	Jan.5th	**Lecture**	Revision
		Tutorial	Revision
16	Jan.12th	**Final Exam**	

Good Luck