Instructor: Xiaohua Li
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Lecture Time: Tu & Th 11:30 a.m.-12:50 p.m. room B142 (section .001)
       MWF 10:30 a.m.-11:20 a.m. room D215 (section .002)
Instructor Office Hours: Open Office Policy. MWF, 11:30 a.m.-1:30 p.m. or by appointment

Supplemental Instruction TA Hours: will be posted in blackboard later

Required Textbook: Engineering Mechanics: Dynamics, 14th Edition,
       Pearson, 2015 R.C. Hibbeler
       ISBN-13: 978-0133915389

Course Description:
 3 hours. Basic theory of engineering mechanics, using calculus, involving the motion of particles, rigid bodies, and systems of particles; Newton's Laws; work and energy relationships; principles of impulse and momentum; application of kinetics and kinematics to the solution of engineering problems.

Prerequisite(s): MATH 1720 and ENGR/MEEN 2301.

Course Learning Outcomes (CLO):
 Upon successful completion of this course, students will:
 1. Express dynamic quantities as vectors in terms of Cartesian components, polar coordinates, and Normal-tangential coordinates.
 2. Compute mass moments of inertia for systems of particles and rigid bodies.
 3. Solve kinematic problems involving rectilinear and curvilinear motion of particles.
 4. Solve kinetic problems involving a system of particles using Newton's Second Law.
 5. Apply the principles of work and energy and conservation of energy to the solution of engineering problems involving particles and systems of particles.
 6. Apply the principles of impulse and momentum and conservation of momentum to the solution of engineering problems involving particles and systems of particles.
 7. Solve kinematic problems involving the translation and rotation of a rigid body.
 8. Solve kinematic problems involving general planar motion of a rigid body.

ABET Student Learning Outcomes (SO)
 a   Ability to apply mathematics, science and engineering principles.
 b   Ability to design and conduct experiments, analyze and interpret data.
 c   Ability to design a system, component, or process to meet desired needs.
 d   Ability to function on multidisciplinary teams.
 e   Ability to identify, formulate and solve engineering problems.
 f   Understanding of professional and ethical responsibility.
 g   Ability to communicate effectively.
 h   The broad education necessary to understand the impact of engineering solutions in a global and societal context.
 i   Recognition of the need for and an ability to engage in life-long learning.
 j   Knowledge of contemporary issues.
 k   Ability to use the techniques, skills and modern engineering tools necessary for engineering practice.

CLO	ABET Student Outcomes (SO)										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	X		X		X						
2	X		X		X						
3	X		X		X						
4	X		X		X						
5	X		X		X						
6	X		X		X						
7	X		X		X						
8	X		X		X						

Grades: Homework (10)   10% $\geq$ 90% A
    Quizzes (highest 3/5) 10%   80-89.9% B
    Exam 1 (Ch 12&13) 25%   70-79.9% C
    Exam 2 (Ch 14&15) 25%   60-69.9% D
    Final/Exam 3 (Ch 16) 25% $<$ 60% F
    Attendance (5 out of 6) 5%
    Total   100%

Homework Policy:

1. "**Homework Day**": the day new homework will be assigned (HW will be posted in Blackboard) and previous homework will be collected;
Section.001 (Tuesday/Thursday section): Thursday
Section.002 (MWF section): Friday
2. Homework should be turned in on the due day before the lecture starts. **NO late homework will be collected. Exceptions**: medical emergence (student and important ones), transportation/traffic emergency; religious holidays/duty, jury duty and military duty. **Documentary evidences** must be submitted.
3. Definition of "**late**": when class is over and instructor steps outside the classroom, homework turned in thereafter will be considered as "**late**" and will not be collected
4. Solutions to Homework will be posted in Blackboard after 11:20 am Friday
5. Having no textbook is not a valid excuse for not doing homework. It is the student's responsibility to acquire textbook for his/her study
6. Homework can be turned in earlier than the due day
7. Homework dropped in the instructor's departmental mailbox will NOT be collected
8. Homework slid through the door into the instructor's office will NOT be collected
9. Homework dropped in the "homework dropbox" in front of the department door will NOT be collected
10. Homework turned in other than the due day or outside classroom must be turned in to instructor either IN PERSON or through EMAIL.
11. If homework is turned in through email, it should be scanned (or pictured by a smart phone) and emailed to instructor before the class ends (12:50p.m. for section #1 and 11:20am for section #2)
12. Homework should be stapled. Instructor or TA will not be responsible for lost loose homework pages.

Exams and Quizzes:
   (1) **Quizzes are open book and open notes.**
   (2) **Exams are closed book and closed notes with formula sheets.**
   (3) **Using Smart phone and/or Internet during the exam is prohibited.**
   (4) Formula sheets could be maximum 5 pages **on top of** instructor's handouts, A4 or letter size, both sides
   (5) **Student is responsible for preparing his/her own formula sheets**
   (6) Formula sheets could include anything **BUT**: **solutions of any kind/format** (numerical or symbolic) to homework problem or lecture/textbook examples. Student who failed to follow this rule will score zero in the exam and this cheating matter will be reported to MEE department and University.
   (7) Formula sheets must be turned in with the exam papers (in the case of formula sheets were not checked by the instructor during the exam). Student who failed to follow this rule will score zero in the exam and this cheating matter will be reported to MEE department and university
   (8) **There will be NO make-up quiz. Exceptions**: medical emergence (student and important ones), transportation/traffic emergency; religious holidays/duty, jury duty and military duty. **Documentary evidences** must be submitted.
   (9) **There will be NO make-up exam. Exceptions**: medical emergence (student and important ones), transportation/traffic emergency; religious holidays/duty, jury duty and military duty. **Documentary evidences** must be submitted.
   (10) All make-up quizzes and exams should be completed within one week after the regular quizzes and exams.

Disability Accommodations: If you need academic accommodations for disability you must have document which verifies the disability and makes you eligible for accommodations, then you can schedule an appointment with the instructor to make appropriate arrangements.

Academic Dishonesty:
There is a zero tolerance policy. Cheating of whatsoever will result in an automatic 'F' in this course and the matter will be turned over to the appropriate student disciplinary committee.

IMPORTANT EXAM DATES
Exam #1 (tentative; depends on when chapter 13 is finished; Covers Ch 12 & 13**):**
   For Section #1 (TuTh section): Feb. 21st, Tuesday
   For Section #2 (MWF section): Feb. 20th, Monday

Exam #2 (tentative; depends on when chapter 15 is finished; Covers Ch 14 & 15**):**
   For Section #1 (TuTh section): Apr. 4th, Tuesday
   For Section #2 (MWF section): Apr. 3rd, Monday

Exam #3 (UNT official final exam schedule, dates are fixed. Covers Ch 16**):**
   For Section #1 (TuTh section): May. 9th, Tuesday, 10:30 a.m.-12:30 p.m.
   For Section #2 (MWF section): May. 6th, Saturday, 8:00 a.m.-10:00 a.m.

January 16, 2017	MLK Day (no classes; university closed)
January 17, 2017	First Class Day
March 13-19, 2017	Spring Break (no classes)
May 3-4, 2017	Pre-finals Days
May 4, 2017	Last Class Day
May 5, 2017	Reading Day (no classes)
May 6-11, 2017	Finals

MEEN 2302.001/.002 Mechanics II (Dynamics)
Schedule Overview (Subject to change)

Week	Date	Lecture Topics
#1	Jan.16th - Jan.20th	**Overview of syllabus** **Ch.12.1-12.2: Rectilinear Motion**
#2	Jan.23rd - Jan.27th	**Ch.12.4-12.5: General Curvilinear Motion** **Ch.12.7: Curvilinear Motion: Normal and Tangential components**
#3	Jan.30th – Feb.3rd	**Ch.12.8: Curvilinear Motion: cylindrical/polar components** **Ch.12 Homework and Discussion session**
#4	Feb.6th – Feb.10th	**Ch.13.1-13.4 Equation of Motion: Rectangular Coordinates** **Ch.13.5 Equation of Motion: Normal and Tangential Coordinates**
#5	Feb.13rd – Feb.17th	**Ch.13.6 Equation of Motion: Cylindrical/polar Coordinates** **Ch.13 Homework and Discussion session**
#6	Feb.20th – Feb.24th	**Exam #1 for TTh Section: Feb. 21st, Tuesday, covers Ch 12 and 13** **Exam #1 for MWF Section: Feb. 20th, Monday, covers Ch 12 and 13** **Feb. 23rd, Thursday, Engineering Career Fair 10am-3pm. No Class (this is for TTh section only, no change for MWF section). Dress up and bring your resume**
#7	Feb.27th – Mar.3rd	**Ch.14.1-14.3 Work, Energy and Principle of Work and Energy** **Ch.14.4-14.6 Conservation of Energy**
#8	Mar.6th – Mar.10th	**Ch.15.1-Ch.15.2 Impulse and Momentum** **Ch.15.3 Conservation of linear Momentum for a System of Particles**
#9	Mar.13th – Mar.17th	**Spring Break. University closed. NO Classes/Lectures**
#10	Mar.20th – Mar.24th	**Ch.15.3 Conservation of linear Momentum: continue** **Ch.15.5 Angular Momentum, Principle of Angular Momentum**
#11	Mar.27th – Mar.31st	**Ch.15.7 Conservation of Angular Momentum** **Ch.15 Homework and Discussion session**
#12	April 3rd – April 7th	**Exam #2 for TTh Section: Apr. 4th, Tuesday, covers Ch 14 and 15** **Exam #2 for MWF Section: Apr. 3rd, Monday, covers Ch 14 and 15** **Ch.16.1-3 Planar Motion of a Rigid Body; Translation; Rotation about a fixed Axis;**
#13	April 10th – April 14th	**Ch.16.4 Absolute Motion analysis** **Ch.16.5: Relative motion Analysis: Velocity; Base point method**
#14	April 17th – April 21st	**Ch.16.5: Relative motion Analysis: Velocity; Instantaneous center** **Ch.16.5: Relative motion Analysis: Velocity; Instantaneous center**
#15	April 24th – April 28th	**Ch.16.5: Relative motion Analysis: Acceleration** **Ch.16.5: Relative motion Analysis: Acceleration; Comprehensive**
#16	May 1st – May 5th	**Ch. 16 Homework and Discussion session** **Pre-final days. Reviews lectures;**
#17	May 6th – May 11th	**Exam week**

Link for **Spring 2017 Final Exams** - Discovery Park
http://registrar.unt.edu/exams/final-exam-schedule/spring
Spring 2017 Final Exams - Discovery Park
Pre-finals days are Wednesday, May 3 - Thursday May 4.
Reading Day is May 5 and no classes will meet.

Saturday, May 6	
This class...	Has a final exam at this time...
All Saturday classes & All INET Classes with On Campus Finals	Contact Department
MWF 10:30 a.m.	**8:00 a.m. - 10:00 a.m.**
MWF 1:30 p.m.	10:30 a.m. - 12:30 p.m.
MWF 4:30 p.m.	1:30 p.m. - 3:30 p.m.
F 2:30 p.m. - 5:20 p.m.	1:30 p.m. - 3:30 p.m.
Monday, May 8	
This class...	Has a final exam at this time...
MWF 8:30 a.m.	8:00 a.m. - 10:00 a.m.
MWF 11:30 a.m.	10:30 a.m. - 12:30 p.m.
MWF 2:30 p.m.	1:30 p.m. - 3:30 p.m.
M 2:30 - 5:20 p.m.	1:30 p.m. - 3:30 p.m.
MW 2:30 p.m. - 3:50 p.m.	1:30 p.m. - 3:30 p.m.
Tuesday, May 9	
This class...	Has a final exam at this time...
TR 8:30 a.m.	8:00 a.m. - 10:00 a.m.
TR 11:30 a.m.	**10:30 a.m. - 12:30 p.m.**
TR 2:30 p.m.	1:30 p.m. - 3:30 p.m.
T 2:30 p.m. - 5:20 p.m.	1:30 p.m. - 3:30 p.m.
Wednesday, May 10	
This class...	Has a final exam at this time...
MWF 9:30 a.m.	8:00 a.m. - 10:00 a.m.
MWF 12:30 p.m.	10:30 a.m. - 12:30 p.m.
MWF 3:30 p.m.	1:30 p.m. - 3:30 p.m.
W 2:30 p.m. - 5:20 p.m.	1:30 p.m. - 3:30 p.m.
MW 4:00 p.m. - 5:20PM	1:30 p.m. - 3:30 p.m.
Thursday, May 11	
This class...	Has a final exam at this time...
TR 10:00 a.m.	8:00 a.m. - 10:00 a.m.
TR 1:00 p.m.	10:30 a.m. - 12:30 p.m.
TR 4:00 p.m.	1:30 p.m. - 3:30 p.m.
R 2:30 p.m. - 5:20 p.m.	1:30 p.m. - 3:30 p.m.

Document History: Dr. Xiaohua Li, 1/16/2017