Semester: Summer 2016  

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<td>ENG</td>
<td>212</td>
<td>Analytical Mechanics (Dynamics)</td>
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II. **Prerequisite**: ENG 211 and concurrent enrollment in MAT 251.

III. **Course Catalog Description**:  
Resultant of forces; equilibrium of force systems; force acting on members of trusses, frames, and machines; friction; centroids; and moments of inertia.

IV. **Course Objectives**:  
- Determine and evaluate kinematics of particles.  
- Determine and evaluate kinematics of rigid bodies.  
- Apply Newton’s laws of motion to solve dynamics problems.  
- Evaluate applications involving work and kinetic energy.  
- Determine kinetics of rigid bodies.  
- Evaluate applications of three-dimensional dynamics of rigid bodies.  
- Evaluate applications involving vibration and time response.

**Weekly Coverage**

- Week 1: 12.2, 12.3, 12-4, 12.6, 12.7, 12.8, 12.9, 12.10  
- Week 2: 13.4, 13.5, 13.6, 14.3, 14.4-14.6, 15.2  
- Week 3: 15.3, 15.4, 15.7, 16.3, 16.4  
- Week 4: Exam #1 (12.2-16.4), 16.5, 16.6, 16.7, 17.1, 17.3  
- Week 5: 17.4, 17.5, 18.4  
- Week 6: 18.5, 19.2, 19.3  
- Week 7: 19.4-22.1, Exam #2 (16.6-22.1)
V. **Academic Integrity:**
Students and employees at Oakton Community College are required to demonstrate academic integrity and follow Oakton’s Code of Academic Conduct. This code prohibits:
- cheating,
- plagiarism (turning in work not written by you, or lacking proper citation),
- falsification and fabrication (lying or distorting the truth),
- helping others to cheat,
- unauthorized changes on official documents,
- pretending to be someone else or having someone else pretend to be you,
- making or accepting bribes, special favors, or threats, and
- any other behavior that violates academic integrity.

There are serious consequences to violations of the academic integrity policy. Oakton’s policies and procedures provide students a fair hearing if a complaint is made against you. If you are found to have violated the policy, the minimum penalty is failure on the assignment and, a disciplinary record will be established and kept on file in the office of the Vice President for Student Affairs for a period of 3 years.

Details of the Code of Academic Conduct can be found in the Student Handbook.

VI. **Methods of Instruction**
This is an online class. The Mastering site has a complete textbook (if you opt for ebook) with many example problems and a “Study Area” with video solutions, comprehension questions and additional solved problems. There are video solutions for most of the 1 point HW problems available at d2l.oakton.edu. You can also access our d2l page thru my.oakton.edu and clicking on “My Courses”.


Within Mastering, there are also video solutions (and solved problems) under "Study Area".

Most homework sets include “Fundamental Problems” for practice. These problems have partial solutions in the back of the book (ebook). Some problems have hints enabled so that progressive feedback is given to you after each incorrect attempt. Most homework assignments allow up to 6 attempts. There is a 10% late penalty per day past the due date with a maximum 50% penalty.

It is up to you, the student, to use these resources to master the concepts and be able to solve typical problems. The system is set-up so that student homework comments/questions entered within Mastering are sent directly to my email. You also have the option of emailing me your questions directly at any time.

We also have face-to-face tutoring available. Sometimes, it takes a week after the semester begins for the schedule to be posted. See [http://www.oakton.edu/studentservices/learning_center/tutoring/index.php](http://www.oakton.edu/studentservices/learning_center/tutoring/index.php) for periodic updates to Des Plaines and Skokie schedules. Call the tutoring phone number if there are any questions.
VII. **Course Practices Required:**

First of all, read assigned sections of chapters, paying particular attention to example problems within each section. Depending on your comprehension of the reading, I advise you to look at additional problems and video solutions to help clear up muddy points.

As you are looking at a solved problem, resist the temptation to look at (or hear) the solution before YOU have thought critically about and attempted the problem. Remember, during exam situations you will not have any of these aids available. Just you, your calculator and one side of an 8.5x11 piece of paper as a “formula sheet” (notice, I did not use the word “cheat”).

YOU ARE REQUIRED to have a notebook dedicated to this class in which you number each section and problem and show all the steps to solve the problem (and box in the answer). When using online materials it is tempting to work off the screen using only scratch sheets that are of no use when it comes time to review for an exam. If you go to the tutor, send me work electronically or make email arrangements to meet with me, an organized notebook WILL BE EXPECTED.

You will need to take a short video off your notebook for me so I can grade it. It counts as an assignment. Cell phone video as you turn pages is OK (you can get two pages in at a time if you hold the phone long way across). I will set-up a dropbox on d2l for these files.

VIII. **Required Instructional Material (Note: there are two options below—read carefully)**

Note: if you took statics last semester and purchased the combined edition (statics and dynamics), you are all set for the spring semester. No additional purchase is necessary.

For those of you who did not take statics with me last semester or did not purchase the combined edition, go to: [http://www.masteringengineering.com/site/register/new-students.html](http://www.masteringengineering.com/site/register/new-students.html) and select: *No, I need to purchase access online now.* (or Yes, if you bought an unused access card for the exact same book)

then select:

*Hibbeler, Dynamics, 14/e*

You then have a choice of including the etext or not. The price with the etext is ~$110 for dynamics only; the price without the etext ~$60 for dynamics only. You will need a credit card. Read this [FAQ](http://www.masteringengineering.com/site/register/new-students.html) before you decide.

Course ID #: MEKOTOWSKI46841

If you do not get the etext, you will only have access to assigned homework problems. You could supplement with a used (even older) edition of the Hibbeler book. You SHOULD have a book and is should ship quickly. The graphics and example problems are invaluable.

Register for MasteringEngineering as soon as you are able. Some assignments are posted ahead of time. Let me know if you get caught up and need more unlocked. Note the due dates and pacing of
assignments. Getting off to a good start by scheduling your study time is CRITICAL to your success in this class.

When you register for Mastering, make sure and USE YOUR GOOD EMAIL as I will be sending messages from within the system and it is in your best interest to check your email for announcements, hints and clarifying comments.

In the beginning, I will send out information to your Oakton email account. You will not receive this information until you activate your account or specify an alternate email: http://www.oakton.edu/about/officesanddepartments/info_tech/resources/my_email/index.php

IX. **Methods of Evaluating Student Progress:**
Achievement of course objectives by the students is determined from the submitted homework and the exams. Overall grade will be comprised of:

1. Two (2) exams will account for 70% of the grade. You must take these exams within the dates shown below. Online students must take them at one of Oakton’s testing or a previously approved alternate site. See more below.
2. Homework will account for 30% of the grade and is essential to getting exam points. Homework deadlines are listed within the MasteringEngineering system. Remember that your three notebook check-in’s count as homework assignments.

Note: some homework assignments will take longer than others. WORK AHEAD SO YOU HAVE A BUFFER against late HW. There is a 10% per day penalty for late HW. After 5 days, you can still earn up to 50% for the assignment.

X. **Other Course Information:**
If you have a documented learning, psychological, or physical disability you may be entitled to reasonable academic accommodations or services. To request accommodations or services, contact the Access and Disability Resource Center at the Des Plaines or Skokie campus. All students are expected to fulfill essential course requirements. The College will not waive any essential skill or requirement of a course or degree program.

Consider participating in activities and events sponsored by the Center for Promoting STEM (Science, Technology, Engineering and Math). The program offers speakers and opportunities to explore careers through research and project experience in STEM. Information is available online at http://www.oakton.edu/cp-stem. I also recommend contacting Gloria Liu (glorial@oakton.edu, 847-635-1738) for more information.

For general online information:
http://www.oakton.edu/academics/distance_online_learning/student_resources/five-steps/index.php

For engineering program information:
http://www.oakton.edu/academics/academic_departments/engineering/
See the OCC calendar for important deadlines (start date, drop date and holidays when the college might be closed). Homework deadlines are posted within MasteringEngineering and are subject to “tweaking”, in which case you will be notified via an announcement posted within Mastering and an email. Again, use your good email when you register (and check it regularly) or you will miss out on announcements. The dates to take exams are:

- exam1 - Ch 12/13/14a/b/15/16.4 online 7/6
- exam2 - Ch 16.5/17/18/19/22 online 7/27

You will be given 2 hours to complete each exam

Online students should book these testing dates with their approved site as soon as possible. See more information below.

Testing for Online students only:
Local students can take exams on either one of Oakton’s two campuses (no prearrangements necessary):
http://www.oakton.edu/studentservices/learning_center/testing/make_up/index.php
http://www.oakton.edu/about/ourlocations/campus_maps/index.php

Students requiring out-of-district testing must read the Guidelines for Testing Off Campus, and submit a Test Proctoring Request form as soon as possible at the beginning of each term to initiate the process. Your instructor does not need to know what your arrangements are. I will assume that you have taken care of this ahead of time.

I look forward to working with you to learn this material and getting to know you (hard to do for online students, I know). Get off to a good start and schedule your time to do homework. The rule of thumb for a college course: for every one credit hour, put in 2-3 hours of homework weekly. That is assuming this is a 16 week course. For summer sessions, since the time is halved, the workload must be doubled. So for this 3 credit hour course, schedule 12-18 hours of homework per week. Remember, there are no shortcuts. You have to put the time in.