

MECH 102 – Dynamics

Fall 2017

Course Information and Policy Document

Instructor: Subhrajit Bhattacharya (sub216)
Lectures: TR, 7:55am-9:10am; Packard Lab (PA) 416

Course Catalog Description:

Particle dynamics, work-energy, impulse-momentum, impact, systems of particles; kinematics of rigid bodies, kinetics of rigid bodies in plane motion, energy, momentum, eccentric impact.

Prerequisites: Engineering Mechanics (MECH 002 / 003) and Calculus III (MATH 023 / 033).

Text and Syllabus:

Beer, Johnston, and Cornwell, *Vector Mechanics for Engineers: Dynamics*, 11th Ed., 2016.

You need to have access to a copy of the text book. The 10th Ed. should be fine, but it has the sections numbered differently. In this course we will cover chapters 11 to 19 of the book.

Grading:

- The final letter grade for the class will be primarily based on the following: Homeworks & Projects (15%), Midterm 1 (25%), Midterm 2 (25%) and Final exam (35%).
- The final letter grades will be computed relative to the entire class (using a “curve”) based on the total score from homeworks, projects and the exams: Top 20% students get A's (A / A-), next 30% get B's (B+ / B / B-), the next 30% students get C's (C+ / C / C-), etc.
- There will be a bonus 10% on surprise quizzes given during lectures. After your letter grade is computed as above, the bonus score from the surprise quizzes will be used to determine if you qualify for an increase in your letter grade.

Homeworks:

- Weekly homeworks will be assigned on Thursdays and will be due on the following Thursdays at the beginning of the class.
- No late submission will be accepted. Failure to submit homework in class will result in 50% penalty if submitted by the afternoon of same day. Submissions made after 4pm of the Thursday will not be graded.
- The homework submissions should be your own individual work. You can discuss a problem with your class-mates before you start working on it. But you should work out the problems by your own self, and submissions must be your own original work.
- The problems given in the surprise quizzes may be selected from the homework problems, as well as one problem in each of the exams will be from the homeworks. So, it is to your advantage that you work out the homework problems by your own selves.

Projects:

There will be two to three projects assigned during the semester. A project will consist of a relatively long problem, possibly with some MATLAB programming components to it.

Exams:

The two midterm exams will be in-class exams and their syllabus will not be cumulative (*i.e.*, midterm 2 will be on the topics covered after midterm 1). The final exam will be comprehensive, covering all the material in the course (including topics covered on the midterms). The difficulty level of the questions in the exam will be similar to those of the homeworks and quizzes.

Surprise Quizzes for Bonus Points:

- There will be about four surprise quizzes during the lectures.
- The problems in the surprise quizzes will be selected either from the problems worked out in class or the ones assigned in the homeworks.
- The quizzes will count towards 10% bonus points in determining your final letter grade: After your letter grade is computed using a *curve* based on your homework, project and exam scores, the score from the quizzes will be used to determine if you qualify for an increase in your final letter grade.
- One lowest score out of the surprise quizzes will be dropped. So, if you miss one quiz you will be fine. But missing more than one will start effecting your bonus points.

Preparation for Class and Participation in Class:

- Before every class, you are expected to read the sections from the tentative schedule (see the schedule document) that appear after the topics that were covered in the previous class.
- Class participation (in terms of responding to questions asked by the instructor and asking questions during the lecture) is expected and encouraged.
- If you miss a lecture, it is your responsibility to catch up with the class by talking to your classmates or reading the textbook.

Office Hours:

I will have my usual office hours on Tuesdays 10am-11:30am in my office (Packard Lab room 562). However, if this time does not work for you, please email me to schedule a meeting by appointment. The TA office hours will be announced on the course site.

Makeup Quizzes / Exams and Late Homework Submissions

No make-ups will be given and no late homework submission will be accepted, except in **documented** extenuating circumstances (*e.g.*, family or personal emergency) with permission from the instructor. The student should provide the instructor an advance notice of his/her absence in order to be able to take a makeup exam/quiz, and provide valid documentation issued by the university. If approved, the assignment must be completed within one week of the original date of the assignment.

Accommodations:

- Reasonable accommodation will be provided for students observing religious holidays, as outlined in the university's religious holiday policy: <http://chaplain.lehigh.edu/node/6> . Please inform the instructor of your absence during religious holiday as early as possible in the semester.
- Students with documented disability requiring accommodation during exams should contact *Support Services (301 Williams Hall: 610-758-4152)*, as well as inform the instructor in advance. This should be done as early as possible in the semester.

Electronic Devices:

- All cell phones, PDAs, tablets, smart watches and the like should be silenced/turned off and stowed off and out of sight during class.
- No such devices may be used or be within your view during tests.
- Only “Departmental Approved” calculators will be permitted during quizzes or exams (see Department policy and list of approved calculators posted on Course Site). You are responsible for bringing a functioning calculator to all tests. No cell phones, iPhones, Blackberries or other PDAs or devices with internet or communication capabilities will be allowed to be used as a calculator. If you need to know what time it is, please bring a watch without communication capabilities.

Academic Integrity:

Students are expected to be familiar with all the academic integrity principles of Lehigh University. Please visit the Academic Integrity Resources page for details: <https://citl.lehigh.edu/academic-integrity-resources>

Principles of Our Equitable Community:

In accordance with Lehigh University's Principles of Diversity and Inclusion, everyone in this course is encouraged to foster an environment that is welcoming and collaborative, both inside and outside the class.