# ME361 Dynamics - Section 001 - *Spring Semester 2013*

MWF 8:00 AM - 8:50 AM, Section 001, Anthony Hall, Room #1279

Instructor: Prof. Nikolai Priezjev, Office: Engineering Building (EB) 2465, tel: 432-9132, priezjev@egr.msu.edu;

Course Description: Kinematics of particles, rigid bodies, and mass moments of inertia. Kinetics of particles and rigid bodies. Energy and momentum principles.

General Policy: Absence from class can cause serious confusion; students are expected to attend lectures which is the standard forum for class communication. Class absence is not an excuse for being unaware of course announcements or course materials. If you are absent, please see the course web page for any announcements you may have missed. The instructor is in no way responsible for providing lecture notes due to student's absence.

Office Hours: You are encouraged to take advantage of office hours. If you stop by an instructor's office at a time other than scheduled office hours, you may be asked to come back, depending upon the instructor's schedule.

Nikolai Priezjev (Office: EB 2465) MWF 4:00-5:00 (but will not discuss homework problems on the day they are due, similar for exam particulars).
Ann Barrett (EB 2518), help hours: Tue 6:00pm-7:00pm, Thu 6:00pm-7:00pm, Friday 5-7pm (barre162@msu.edu)

Required Textbook: Engineering Mechanics: Dynamics by R.C. Hibbeler, **13th** edition, Pearson Prentice Hall, NJ, 2009. ISBN: 0132911272
A copy of the required textbook is available on reserve in the Engineering Library.

Recommended book: Any edition of Beer and Johnson, Dynamics: Vector Mechanics for Engineers.

Prerequisites: A basic knowledge of vector algebra (i.e., scalar and vector products), trigonometry, fractions, and solution of a system of linear equations is required. The review materials can also be found in the folder (Review Vector Algebra) on Angel webpage.

Homework: Homework problems will be assigned regularly. Only a few selected problems need to be turned in for grading. They are clearly marked on the schedule with **bold** typeface, for example **hw1.1**. Each submitted problem must be completed on the front of one page and so each submitted assignment must consist of the same number of pages as number of assigned problems (stapled together). Point deductions will occur for unclear presentation. The homework due dates are listed in the schedule. **Late homework receives no credit.** Solutions to all problems will be posted on the Angel webpage. Student collaboration on the homeworks is encouraged, however, you must write up and submit your own solutions.

Note that students are expected to work out all problems (not only those assigned for grading) as they are an integral part of the learning experience. Some of the homework problems might appear on the exam.

Exams: There are 3 exams in addition to the final exam. They are closed-book, closed notes, 50-minute, in-class exams. Calculators are not allowed as all problems may be worked by hand. One-page (A4 format, both sides) formula sheet of your own creation is allowed. In addition, an appropriate formula sheet will be provided with the exam. The nature of this formula sheet (as well as a sample exam) will be made available to you before the exam so that you will know in advance its contents. Thus, the only materials of your own that are allowed in the exam are one-page formula sheet, pencil, paper, and eraser. Make-up exams will be given only in the case of documented emergencies. Exam dates are posted on the schedule.

<u>Final Exam</u>: A final will be held according to the <u>official final exam schedule</u>. It will be of the same format as the in-class exams covering new material since the previous exam. The policy on calculators and formula sheets is the same as for the in-class exams.

<u>Tips and Strategies</u>: To be well prepared for the exams students are strongly encouraged to work out problems from the following three sources: (1) all homework problems, both assigned and non-assigned for grading, (2) problems with solutions provided at the end of each covered chapter in the textbook, and (3) those discussed during the lectures. Very similar problems might appear on the exams. Note that those students who only solve (copy) problems assigned for grading (usually 3-4 per homework) usually are not able to finish completely a single problem on the exam! Sample exams will be made available on Angel a couple of weeks before the exam date.

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<u>Grading Scheme</u>: Your course grade is based on your in class grade total percentage. If homework is collected then your class grade total percentage is given by 12% homework, 66% exams (22% each) and 22% final.

<u>Attendance Policy</u>: Attendance will be taken at each lecture, but it will be only used if your grade is on the border line between two different grades (e.g. 3.0 and 3.5).

Your course grade then follows from the following table:

| class grade total percentage | >=85% | >=80% | >=75% | >=70% | >=65% | >=60% | >=55% | <60% |
|---|---|---|---|---|---|---|---|---|
| course grade | 4.0 | 3.5 | 3.0 | 2.5 | 2.0 | 1.5 | 1.0 | 0 |

<u>However</u>, if the class average grade is below 2.5 then the final score will be curved so that the class average grade will be between 2.5 and 3.0.

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<u>Questions and Feedback:</u> If you have questions regarding your current progress, concerns about the material presentation (power point vs. writing on a board), use of multimedia devices (clickers, microphone, etc) please contact the instructor (in person or via e-mail); please do not wait until the end of the semester.

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<u>Ethics</u>: Engineers must adhere to a rigorous code of professional ethics. Unethical conduct in ME361 will result in the maximum disciplinary action permitted by Michigan State University. Unethical conduct in this class includes, but is not limited to, cheating on exams and supplying information to others (students bear responsibility for ensuring the security of their examination papers). If you have any questions, your instructor is available to discuss issues of professional expectations and ethics. Departmental plagiarism policy can be viewed <u>here</u>.

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<u>Additional Comments</u> :

- The <u>schedule</u> contains crucial information for the class. As the lecture progresses, it will be updated constantly. Please check for the most recent version regularly.