

Engineering Dynamics [PHY 3303] Spring 2009

Instructor

Douglas Young

Instructor Contact Information

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Instructor Office Hours

M 5:30-6:30, W 10:30-1:00. F 10:30-12:00

Required Texts

Engineering Mechanics: Dynamics and Student Study Pack with FBD Package
(11th Edition) (Hardcover) by Russell C Hibbeler (Author)
ISBN-10: 0131561480

Meeting Rooms and Times

MWF 9:00-9:50 Vincent 160

Prerequisites

Calculus II [MAT 2332]

Students are expected to be able to:

- calculate derivatives of various functions.
- calculate integrals of various functions.

Fundamentals of Physics [PHY 1441]

Students are expected to:

- Be familiar with and able to discuss basic physical principles and concepts.
- Solve problems involving kinematics, forces (through the application of Newton's laws), conservation of energy, linear momentum, and angular momentum.

Student Learning Outcomes

The objective of the study of a natural sciences component of a core curriculum is to enable the student to understand, construct, and evaluate relationships in the natural sciences, and to enable the student to understand the bases for building and testing theories.

- To understand and apply method and appropriate technology to the study of natural sciences.
- To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analysis, and interpretation both orally and in writing.
- To identify and recognize the differences among competing scientific theories.
- To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.
- To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.

At the end of this course, students will:

- Be able to solve quantitative problems by applying physical principles and more sophisticated mathematical methods (i.e. calculus).
- Be able to analyze a physical system and make qualitative predictions about the behavior of the system.

Grading Scale

100	-	90	=	A	(4.0)
89	-	80	=	B	(3.0)
79	-	70	=	C	(2.0)
69	-	60	=	D	(1.0)
	≤	59	=	F	(0.0)

Grading

Weighting

- Inclass Work 15 %
 - Homework 20 %
 - Reading Quizzes 15 %
 - Tests 50 %
- 3 Tests \implies 20 % for highest test grade and 15 % for all others

Inclass Work

Each problem will be assigned a score of a check-plus ($\checkmark+ = 3$), check ($\checkmark = 2$), or check-minus ($\checkmark- = 1$). Assignments will typically be scored based on the effort made by the student, rather than purely on if the problem is right or wrong. Based on this scale, a check on an assignment is equivalent to a 100 (on a 100 point scale); Check-pluses therefore constitute a form of extra-credit.

When assigned conceptual problems, students are expected to:

- Provide a clear answer to the question.
- Write out the reasoning behind their answer.
- Provide an indication of how sure they are of their answer.

Typically the “sureness” scale is from 1 to 10 with 1 meaning “guessed”, to 10 as “very sure”. Without all three present on the page, a problem solution will be scored as a check-minus ($\checkmark- = 1$) regardless if the answer is right or wrong.

In figuring the final grade, averages over 100 on these parts will be scored as a 100. However, students with averages of over 100 on this part of the grade may have their final grades increased by 2 points if it puts the student in the next letter grade bracket.

Homework

Homework will be graded on a 5 point/problem basis. Five points will be awarded for a problem with a correct, well-worked out solution. Four points will be awarded for a problem with minor errors or with the correct solution but worked out in a sloppy (hard to read) fashion. One to Three points will be awarded for problems that are incomplete, with the value depending on the how much progress the student has made toward a solution.

Homework problems are due at the beginning of the next class period after they are assigned, unless told otherwise by the instructor.

Students may also present their solutions to the class during the class period that the solutions are due. Students may volunteer to present their solution to certain problems. By volunteering, the student may receive up to three points of additional credit for their presentation of the problem, with the amount depending on the quality of the presentation. It is possible to obtain “extra-credit” by doing well on an assignment and providing an exceptional presentation of the solution to the problem. With this extra-credit, it is possible for students to have a homework average that is over 100. In figuring the final grade, homework averages over 100 grade will be scored as a 100. However, students with homework averages over 100 grade may have their final grades increased by 2 points if it puts the student in the next letter grade bracket. Students should avail themselves of this opportunity early in the semester, since the course material will grow progressively more difficult as the semester unfolds.

Suggestions for making a homework presentation “exceptional”:

- Explicit Error Checking: Does the solution make sense? If so, why? If not, why not?
- Relating solution to material covered previously in class, or to material covered in another class.

Students may miss up to two homework assignments without penalty. The policy is implemented by adding the total number of points for each homework assignment and dividing this total by two subtracted from the number of homework assignments.

In figuring the final grade, averages over 100 on these parts will be scored as a 100. However, students with averages of over 100 on this part of the grade may have their final grades increased by 2 points if it puts the student in the next letter grade bracket.

Reading Quizzes

Short quizzes over assigned readings from the textbooks will be given periodically. Assigned reading will be announced in class prior to the quiz. These quizzes will be graded on a standard 100 point grading scale.

Students may miss up to two quizzes without penalty. This policy will be implemented by adding up the total number of points for each quiz and then dividing by two subtracted from the total number of quizzes.

Quizzes will not be returned to students, but grades on quizzes will be posted on the course Blackboard webpage. Students are encouraged to come by my office to discuss questions about grading of quizzes, both on individual quizzes and the reading quiz grade in general.

Suggestions to help studying for the reading quizzes:

- Read through the material at least twice, with some period of time (more than 2 hours) between readings.
- Highlight the main sentence in each paragraph of the reading assignment, or outline the reading assignment using the main sentence in each paragraph of the reading.

In figuring the final grade, averages over 100 on these parts will be scored as a 100. However, students with averages of over 100 on this part of the grade may have their final grades increased by 2 points if it puts the student in the next letter grade bracket.

Class Policies

- The instructor reserves the right to modify this syllabus as deemed necessary any time during the semester. Emendations to the syllabus will be discussed and negotiated with students during a class period. A revised syllabus which supercedes the original document will then be handed out in class period shortly after the discussion/negotiation class period.
- Attendance in this class is extremely important. Students are responsible for all information discussed in class. Be forewarned that students with more than an occasional absence risk doing poorly. If a student knows in advance that a class will be missed, it is expected that the student will discuss this with the instructor.
- Dates for tests and reading quizzes will be announced at least one class period ahead of time
- Questions about points awarded on test and quiz problems should be brought up as soon as these materials are handed back to students. All grades are final four weeks after tests and quizzes have been handed back to the class. If a student is not present in class when materials

are returned, the student is responsible for arranging a time to collect the work from the instructor.

- Homework is due at the beginning of the next class period after they are assigned. Late homework may be accepted at the discretion of the instructor, with some penalty assigned for each instance by the instructor. If the student does not attend class, or is late to class, on the day the homework is due, homework will not be accepted for credit. In other words, come to class even if you do not have the homework finished.
- Cell Phone and Pager Usage: Out of courtesy for all those enrolled in class, all cell phones and pagers must be turned off before entering any classroom, lab, or formal academic or performance event.
- Makeup tests will be administered for excused absences only, and must be made up within one week of the date when the test or quiz was administered to the class. If a student knows in advance that a test or quiz will be missed, it is expected that the student will discuss a makeup time beforehand.
- Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is contained in both print and web versions of the Student Handbook.
- Persons with disabilities which may warrant academic accommodations must contact the Student Life Office, Room 112 University Center, in order to request and to implement academic accommodations.