The University of Texas at Tyler
College of Engineering and Computer Science
Course Objectives, Syllabus, and Course Policy
Spring 2015 (January 12 - May 2)

COURSE: ENGR 2302.001 - DYNAMICS
Lectures: Tuesdays & Thursdays 9:30 -10:50 am in BUS106
(Pre-requisites: ENGR 2301- Statics).


INSTRUCTOR: Dr. M. Sathyamoorthy, Office – Engineering RBS2007 – 903 565 5939 –
msathy@uttyler.edu-- Office hours posted at the door.

ABOUT THE COURSE
Dynamics is the second of the two-course sequence in Mechanics, (Statics being the
other), that is usually required of most engineering majors. Statics and Dynamics provide
an early introduction to basic engineering principles and applications in traditional
engineering curricula. Ordinarily, they are included at the beginning of engineering
programs/curricula so as to provide an opportunity to find out if the student has the
necessary aptitude to succeed in engineering. In-depth understanding of Statics and
Dynamics is an absolute necessity for the study of other mechanics courses such as
Strength of Materials, Thermodynamics, Fluid Mechanics etc. In order to meet these
objectives, this course will be presented with a strong emphasis on understanding the
fundamental theoretical concepts complemented by solutions to a number of example
problems to reinforce the understanding of the theory discussed in class. Past experience
indicates that one of the most effective ways of mastering the course material is to solve
as many classroom, practice and homework problems as possible.

COURSE SYLLABUS & TOPICS COVERED
The following syllabus describes the course contents in general terms. A flexible lecture
schedule will be used to adjust the material covered to suit the background, interest and
response of the students in order to maximize the overall benefits.

Chapter 12: Kinematics of a Particle, Sections: 12.1, 12.2, 12.4-12.10
Chapter 13: Kinetics of a Particle: Force and Acceleration, Sections: 13.1-13.6
Review Session 1 on February 11 from 5 to 6:30 pm in RBN3039
Exam 1 on February 12: 9:30 -10:45 in class

Chapter 14: Kinetics of a Particle: Work and Energy, Sections: 14.1-14.6
Chapter 15: Kinetics of a Particle: Impulse and Momentum, Sections: 15.1-15.7
Review Session 2 on March 25 from 5 to 6:30 pm in RBN3039
Exam 2 on March 26: 9:30 -10:45 am in class
**ATTENDANCE:**

Dynamics is one of the challenging courses in engineering. Therefore, **regular attendance is required.** In case you have to miss a class, it is your responsibility to keep up with the class work and be informed of all announcements made in the class on homework, exams etc.

**ASSESSMENT: HOMEWORK:**

Homeworks are considered very important for the understanding of the course material. Completing your homework independently is an absolute necessity to do well in this course. Therefore I strongly urge each of you to complete the homework assignments independently for your own benefit. Homework assignments and solutions will be posted on blackboard but they will NOT be collected and graded.

**EXAMS:**

Closed-book, closed-notes exams will be given after completing a reasonable amount of material from the text as shown in the syllabus. A final 2-hour **COMPREHENSIVE** examination will be given on April 30th in class. You may use a one-page, self-written formula sheet (with no problem solutions of any kind) for reference in each of the exams and the final examination. If you miss any exam without getting **prior approval from me at least one week before the test date**, it will be counted as zero in the calculation of your final course grade.

**FINAL GRADES:**

<table>
<thead>
<tr>
<th>Final grades are based on:</th>
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<tbody>
<tr>
<td>3 Exams @ 20 points each</td>
<td>60 points</td>
</tr>
<tr>
<td>Group project</td>
<td>10 points</td>
</tr>
<tr>
<td>Final Comprehensive Exam</td>
<td>30 points</td>
</tr>
<tr>
<td>Total</td>
<td>100 points</td>
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</tbody>
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**NOTE**

Course syllabus, course material such as handouts and statement of problems solved in class, homework assignments, homework solutions, review material, exam solutions will all be posted on Blackboard. Please review all the material posted on Blackboard on a regular basis. We will also use Blackboard to post announcements and contacting students by e-mail.

**CALCULATOR POLICY:**

You can only use one of the calculators allowed for the FE Exam (see the list below). No other
calculator will be allowed for the exam. You are not allowed to store any class material in the calculator during the exams.

**Casio:** All fx-115 models. Any Casio calculator must contain fx-115 in its model name. Examples of acceptable Casio fx-115 models include (but are not limited to):

- fx-115 MS
- fx-115 MS Plus
- fx-115 MS SR
- fx-115 ES
- fx-115 ES Plus

**Hewlett Packard:** The HP 33s and HP 35s models, but no others.

**Texas Instruments:** All TI-30X and TI-36X models. Any Texas Instruments calculator must contain either TI-30X or TI-36X in its model name. Examples of acceptable TI-30X and TI-36X models include (but are not limited to):

- TI-30Xa
- TI-30Xa SOLAR
- TI-30Xa SE
- TI-30XS Multiview
- TI-30X IIB
- TI-30X IIS
- TI-36X II
- TI-36X SOLAR
- TI-36X Pro

**THERE WILL BE NO MAKE-UP EXAMS.** The percentage of any exam missed by a student will be added to his/her final comprehensive exam only if prior approval is granted. The student is responsible to contact me at least a week before the scheduled exam date to make alternate arrangements in case of conflicts. If you have to miss an exam due to emergencies (such as medical and other emergencies) please inform me as soon as possible before or immediately after the exam. Class average for each exam will be posted on BB after each exam. Final grades will be determined on the basis of the class average. If your grade is consistently at the class average you will get a “C” grade. If you miss any exam without getting **prior approval from me at least one week before the exam date**, it will be counted as zero in the calculation of your final course grade. If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify me at least two weeks prior to the date of the planned absence.

Academic policies regarding withdrawal from the course, state-mandated course drop rule, grade forgiveness, student rights, absence for religious observance, grade replacement, social security and privacy, learning disability, academic dishonesty and others can be found at
Grade Replacement/Forgiveness
If you are repeating this course for a grade replacement, you must file an intent to receive grade forgiveness with the registrar by the 12th day of class. Failure to do so will result in both the original and repeated grade being used to calculate your overall grade point average.
Undergraduates will receive grade forgiveness (grade replacement) for only three course repeats; graduates, for two course repeats during his/her career at UT Tyler.

State-Mandated Course Drop Policy
Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the 12th day of class (See Schedule of Classes for the specific date).
Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Registrar's Office and must be accompanied by documentation of the extenuating circumstance. Please contact the Registrar's Office if you have any questions.

Disability Services
If you have a disability, including a learning disability, for which you request disability support services/accommodation(s), please contact Ida MacDonald in the Disability Services office so that the appropriate arrangements may be made. In accordance with federal law, a student requesting disability services/accommodation(s) must provide appropriate documentation of his/her disability to the Disability Services counselor. In order to assure approved services the first week of class, diagnostic, prognostic, and prescriptive information should be received 30 days prior to the beginning of the semester services are requested. For more information, call or visit Disability Services located in the University Center, Room 3150. The telephone number is (903) 566-7079. Additional information may also be obtained at the following UT Tyler Web address: http://www.uttler.edu/disabilityservices.

Student Absence for University-Sponsored Events and Activities
If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

Social Security and FERPA Statement:
It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.

COURSE OBJECTIVES:
1. Set up and solve particle kinematics problems using rectilinear and curvilinear, planar and three-dimensional, coordinate systems. [1-3]
2. Set up and solve kinetics of particles problems, planar and three-dimensional, using Newton’s second law, work and energy, and impulse and momentum methods. [1-3]
3. Set up and solve kinematics of rigid bodies problems in planar coordinate systems. [1-3]
4. Set up and solve kinetics of rigid bodies problems using Newton’s second law, work and energy, and impulse and momentum methods. [1-3]

Numbers in brackets refer to method(s) used to evaluate the course objective.