Course Description: Basic theory of engineering mechanics, using calculus, involving the motion of particles, rigid bodies, and systems of particles; Newton's Laws; work and energy relationships; principles of impulse and momentum; application of kinetics and kinematics to the solution of engineering problems. (3 Lec.)

Course Pre-requisites/Concurrent: MATH 2414 or the equivalent

Course Materials/Supplies Needed

Core Objectives: This course is designed to help students to understand fundamentals of kinematics (study about the motion of particles and rigid bodies) and kinetics (the study of motion with its cause and effect). In the kinematics - the geometry of motion, students will learn how to mathematically describe the motion in terms of space and time. In the kinetics, students will learn how the external energy, such as force and torque, will change the status of the particles and rigid bodies in space. Physical meaning and practical application of vector analysis, differentials, integrals and trigonometry will be clarified through realistic engineering problems.

Student Learning Outcomes
After successful completion of this course the student will

1. Be able to describe motions of particles and rigid bodies to derive appropriate governing equations.
2. Be able to apply natural laws, such as Newton's law and energy/momentum conservation, to solve realistic engineering problems.
3. Be able to visualize spatial and temporal response of various dynamic systems for comprehensive engineering analysis and synthesis.
**Milestones** Schedule can be slightly changed. It is your responsibility to check email everyday for the date change notifications. You should let me know at least 1 week ahead if you have issue with the quiz/exam schedules. Your alternative quiz/exam date should be prior to the original date.

- **Quiz 1** 7/14 (Sun), 7-9PM
- **Mid-Term Exam** 7/21 (Sun), 7-10PM
- **Quiz 2** 7/28 (Sun), 7-9PM
- **Last Day to Withdraw** 7/30 (Please discuss your situation before you drop)
- **Final Exam** 8/4 (Sun), 7-10PM

**No Class Days (from School Calendar)**
- **NA**

**Grading**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>20%</td>
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<tr>
<td>Two Quizzes</td>
<td>25%</td>
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<tr>
<td>Mid Term</td>
<td>25%</td>
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<tr>
<td>Final Exam</td>
<td>30%</td>
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**Late Work Policy:** There will be automatic 5%/day score deduction, until it reaches to total 30% deduction. If you miss one quiz or exam with pre-approval, you will get 70% of the compatible score, after normalized by the class average.

**Attendance Policy**

Students are expected to attend all classes. Students have the responsibility to attend class and to consult with the instructor when an absence occurs. If for some reason you must leave class early, you should inform the instructor prior to the start of class of your reason for leaving early.

Students must begin attendance in all classes of enrollment. No exceptions. Financial Aid will not be granted to students who have been certified as not attending, by the certification date. For this lecture course, your physical participation in class, on or before the certification date will allow you to receive credit for FA purposes. For certification dates, check with the division or FAO for further information. Students, who are not certified as beginning class, are responsible for any payments due as a result of non-certification, to include the dropping of courses. Students whose classroom attitude negatively impact on other students learning activity will be warned once. If the student’s attitude is not corrected, he/she cannot attend this class any longer.

**Academic Dishonesty:**

Students that caught plagiarizing an assignment will be subject to an “F” in the course and possible expulsion from the college.

*Academic honesty is expected, and integrity is valued in the Dallas County Community Colleges. Scholastic dishonesty is a violation of the Code of Student Conduct. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion. As a college student, you are considered a responsible adult. Your enrollment indicates acceptance of the DCCCD Code of Student Conduct published in the DCCCD Catalog.*

**Institution Policies:** Please visit [www.mountainviewcollege.edu/syllabipolicies](http://www.mountainviewcollege.edu/syllabipolicies) for a complete list of institutional policies (Stop Before You Drop; Withdrawal Policy; Repeating a Course; Financial Aid; Academic Dishonesty; Americans with Disabilities Act Statement; Religious Holidays; and Campus Emergency Operation Plan and Contingency Plan).