

**Clackamas Community College**  
Online Course/Outline Submission System

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**Section #1 General Course Information**

**Department:**Engineering Science

**Submitter**

First Name: Eric

Last Name: Lee

Phone: 6163

Email: elee

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**Course Prefix and Number:**ENGR - 212

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**# Credits:**4

**Contact hours**

Lecture (# of hours): 44

Lec/lab (# of hours):

Lab (# of hours):

Total course hours: 44

For each credit, the student will be expected to spend, on average, 3 hours per week in combination of in-class and out-of-class activity.

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**Course Title:**Dynamics

**Course Description:**

Kinematics, kinetics, work-energy, and impulse-momentum relationships of engineering systems. The course examines the fundamental principles of Newton's laws of motion, with applications to basic particles and rigid bodies in one, two, and three dimensions.

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**Type of Course:**Lower Division Collegiate

Is this class challengeable?

**No**

Can this course be repeated for credit in a degree?

**No**

Is general education certification being sought at this time?

**No**

Does this course map to any general education outcome(s)?

**No**

Is this course part of an AAS or related certificate of completion?

**No**

Are there prerequisites to this course?

**Yes**

**Pre-reqs:**Pass ENGR-211 and PH-211

**Have you consulted with the appropriate chair if the pre-req is in another program?**

**No**

Are there corequisites to this course?

**No**

Are there any requirements or recommendations for students taken this course?

**No**

Are there similar courses existing in other programs or disciplines at CCC?

**No**

Will this class use library resources?

**No**

Is there any other potential impact on another department?

**No**

Does this course belong on the Related Instruction list?

**No**

GRADING METHOD:

A-F or Pass/No Pass

**Audit:**No

When do you plan to offer this course?

✓ **Winter**

Is this course equivalent to another?

If yes, they must have the same description and outcomes.

**No**

Will this course appear in the college catalog?

**Yes**

Will this course appear in the schedule?

**Yes**

Student Learning Outcomes:

Upon successful completion of this course, students should be able to:

1. understand the fundamental principles of mechanics, particularly the kinematics and kinetics of motion;
2. apply analytical and problem-solving abilities in those areas,
3. use inventiveness and skills of inquiry in recognizing problem types and in applying those skills to applications in the areas of dynamics.

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***This course does not include assessable General Education outcomes.***

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Major Topic Outline:

1. Kinematics of a Particle.
2. Kinetics of a Particle: Force and Acceleration.
3. Kinetics of a Particle: Work and Energy.
4. Kinetics of a Particle: Impulse and Momentum.
5. Planar Kinematics of a Rigid Body.
6. Planar Kinetics of a Rigid Body: Force and Acceleration.
7. Planar Kinetics of a Rigid Body: Work and Energy.
8. Planar Kinetics of a Rigid Body: Impulse and Momentum.

Does the content of this class relate to job skills in any of the following areas:

- |                                      |           |
|--------------------------------------|-----------|
| 1. Increased energy efficiency       | <b>No</b> |
| 2. Produce renewable energy          | <b>No</b> |
| 3. Prevent environmental degradation | <b>No</b> |
| 4. Clean up natural environment      | <b>No</b> |
| 5. Supports green services           | <b>No</b> |

Percent of course:0%

## **Section #2 Course Transferability**

Concern over students taking many courses that do not have a high transfer value has led to increasing attention to the transferability of LDC courses. The state currently requires us to certify that at least one OUS school will accept a new LDC course in transfer. Faculty should communicate with colleagues at one or more OUS schools to ascertain how the course will transfer by answering these questions.

1. Is there an equivalent lower division course at the University?
2. Will a department accept the course for its major or minor requirements?
3. Will the course be accepted as part of the University's distribution requirements?

If a course transfers as an elective only, it may still be accepted or approved as an LDC course, depending on the nature of the course, though it will likely not be eligible for Gen Ed status.

Which OUS schools will the course transfer to? (Check all that apply)

PSU (Portland State University)

OIT (Oregon Institute of Technology)

OSU (Oregon State University)

Identify comparable course(s) at OUS school(s)

Oregon Tech - ENGR 212

OSU - ENGR 212

PSU - EAS 215

How does it transfer? (Check all that apply)

required or support for major

:

First term to be offered:

Next available term after approval

:

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