

COURSE TITLE: ENGR 212 Dynamics

CREDITS: 4

ROOM: (Online)

CRN: 31891

LECTURE/RECITATION: (Pre Recorded Lectures Online)

INSTRUCTOR: Craig Munsee

EMAIL: munsec@linnbenton.edu

OFFICE: IA-206

OFFICE HOURS: (Zoom Meeting)

Monday 2:00 pm - 2:50 pm

Tuesday 2:00 pm - 2:50 pm

Wednesday 2:00 pm - 2:50 pm

Thursday 2:00 pm - 2:50 pm

Friday 2:00 pm - 2:50 pm

Others by Appointment

Course Description/Outcomes:

This class covers particle and rigid body kinematics and kinetics, Newton's laws, work/energy and impulse momentum. Upon successful completion of this course, students will be able to:

1. Perform kinematic analysis of particles and bodies.
2. Perform kinetic analyses of systems using forces, moments, and accelerations.
3. Perform work energy analyses of systems.
4. Perform momentum impulse analyses of systems.

Prerequisite(s):

- Prerequisite: ENGR 211 Statics and MTH 252 Integral Calculus with a grade of "C" or better.
- Recommended: PH 211 General Physics with Calculus.
- Recommended: Working knowledge of spreadsheets and/or MatLab.

Text Book:

- Required: Dynamics Notes, Edition 2.00 or Later
- Recommended: Engineering Mechanics: Dynamics by Russell C. Hibbeler, Any Edition

Grading:

Assignment	Number	Method 1	Method 2
Homework	10	16%	16%
Midterms 1	1	28%	25%
Midterms 2	1	28%	25%

Final Exam	1	28%	34%
Total		100%	100%

- 90-100% A, 80-89% B, 70-79% C, 60-69% D, < 59% F
- Three exams will be given, two midterms and a comprehensive final. There will be two methods for determining your grade, the method that gives you the best result will be used. Either each of the exams will count 28% of your grade; or the final will count 34% and each of the midterms will count 25%.
- Incompletes will be handled on a case-by-case basis; it is the responsibility of the student to discuss the situation with the instructor.
- The class is designed to go over the material in the lectures and work through the example problems. After completing the weeks' worth of lectures, you should be ready to work on the homework. You are given one additional week to complete the homework and turn it in. This gives you the opportunity to work on the assignment over the weekend and be able to ask question before the assignment is due. If you wait till the day the assignment is due, you run the risk of not being able to get answers to questions and possibly not completing the assignment on time.
- There will not be any extra assignments given beyond those listed, so please **do not** email the instructor to ask if there is anything extra you can do to improve your grade.

Homework:

- Homework problem sets are linked in Moodle and are to be turned in to Moodle by 11:55 PM on the day they are due. If there is a problem with Moodle, you may email the assignment to the instructor.
- Homework is to be scanned to a PDF and turned in to Moodle for grading.
- The lowest homework grade will be dropped.
- Late homework will not be accepted unless an extension has been requested prior to the due date. A student is allowed **only one** two-day extension for a homework assignment.
- Each problem will be checked for a reasonable attempt at solving.
- Solutions to the homework problems will be posted in Moodle after the homework is due.
- The Student is responsible for turning the homework in on time and in the recommended format. They are also responsible for turning in the correct homework. If the homework is not turned in on time or the wrong assignment has been submitted a score of zero will be given for that assignment.

Exams:

- The exams will be online timed tests and will only be given on the day indicated below. Because the exams will be online, you may take it any time during the day it is offered. The exam will close at midnight even if you started it a 11:00 pm.
- If you have a time conflict for the test, you will need to contact your instructor before the exam to arrange for a different day.
- **If you miss the exam on the day it has been offered and prior arrangements have not been made, there will be a 10% grade penalty to make up the exam.**
- No exam grades will be dropped.
- Dates of the exams are listed below:
 - Midterm #1: **Monday Feb 1, 2021**
 - Midterm #2: **Monday Feb 22, 2021**

- Final Exam: **Monday Mar 15, 2021**

<https://www.linnbenton.edu/current-students/schedule-and-learn/finals-schedule/>

Holidays:

- Martin Luther King Jr. Day: LBCC will be closed (**Monday, Jan 18, 2021**)
- Presidents Day: LBCC will be closed (**Monday, Feb 15, 2021**)

Class Climate Survey:

- Student feedback is important to improve this course and to help the instructor know how to adjust teaching methods. Your feedback is taken seriously and does influence future versions of the course. The evaluations are anonymous, and links to the evaluations will be emailed to your student LBCC email account after the 5th week of the term. I encourage you take this opportunity to provide constructive feedback on the class. Thank you in advance for your input!
- **Extra Credit will be given for those who completing the Class Climate Survey.** Since the survey is anonymous you are asked to attach a screen shot showing that you completed the survey (Not a screen shot of your answers). A place to turn this in can be found on week 7 of Moodle.

Academic Integrity:

- You are expected to turn in your own work and not take credit for the work of others.
- For Homework, you may work together and discuss the problems with your classmates, but you are expected to turn in your own work. If you turn in something that is not your work, it is considered cheating (This includes copying and sharing computer files).
- No collaboration is allowed for Exams.
- **Those caught cheating and those who aid them will receive a score of zero for that assignment or test and will be reported to the Dean of Students.**

Computer & Software Requirements:

- You will need a computer capable of accessing Moodle to watch the class videos, submit your homework, and take exams. There are no software requirements for this class.

College Policies

Drop/Withdraw Policy:

If you are withdrawing from the class you must file a Schedule Change Form with Registration or use WebRunner. If you formally drop the class **before Monday of the second week of the term**, you will receive a tuition refund. If you withdraw after the Monday of the second week of instruction through the seventh week a ‘W’ will show up on your transcript. **No withdrawals are allowed after the end of the seventh week.** An instructor may not assign a “W” grade.

If you received financial aid or veteran’s benefits, PLEASE talk with associates at the appropriate office to determine what effects on eligibility dropping a course will have. Don’t jeopardize your eligibility!! You can contact the Financial Aid Office by calling (541) 917-4850 or by visiting the Financial Aid Office in Takena Hall.

If you stop attending the course without formally withdrawing you will continue to accumulate grades

(zeroes for all assignments not turned in) and will receive the grade assigned by the instructor. You will also be held accountable for all charges on your account.

Center for Accessibility Resources (CFAR):

You should meet with your instructor during the first week of class if:

1. You have a documented disability and need accommodations.
2. Your instructor needs to know medical information about you.
3. You need special arrangements in the event of an emergency.

If you have documented your disability, remember that you must make your request for accommodations through the Center for Accessibility Resources Online Services web page every term in order to receive accommodations. If you believe you may need accommodations but are not yet registered with CFAR, please visit the CFAR website at <http://www.linnbenton.edu/cfar> for steps on how to apply for services or call 541-917-4789.

LBCC Comprehensive Statement of Nondiscrimination

LBCC prohibits unlawful discrimination based on race, color, religion, ethnicity, use of native language, national origin, sex, sexual orientation, gender, gender identity, marital status, disability, veteran status, age, or any other status protected under applicable federal, state, or local laws. For further information see Board Policy P1015 in our Board Policies and Administrative Rules. Title II, IX, & Section 504: Scott Rolen, CC-108, 541-917-4425; Lynne Cox, T-107B, 541-917-4806, LBCC, Albany, Oregon. To report: [linnbenton-advocate.symplicity.com/public report](http://linnbenton-advocate.symplicity.com/public-report).

Know your rights and responsibilities:

LBCC students have rights: the right to free speech, the right to assemble, the right of a free press, etc. LBCC students also have responsibilities to their community: the responsibility to participate and engage in class, the responsibility to advocate for their needs (ask for help), the responsibility to support a respectful teaching and learning environment, the responsibility to treat all persons with respect, the responsibility to be truthful and honest in all work and communications, and the responsibility to follow staff directions, local, state, and federal laws.

Rights and responsibilities balance together to create the best learning environment. For example, while you have free speech in the café or courtyard, in class the instructor decides whose turn it is to talk and what the topics for conversation will be. Students are free to believe what they believe, but instructors may require students to learn and recite concepts, principles, or theories for a class even if the student does not believe those concepts. You play a role in creating a positive community at LBCC.

Please review your rights and responsibilities (<http://linnbenton.edu/go/studentrights>).

If you believe a student is violating your rights, ask to be treated with respect. If that does not cure the situation, report to Associate Dean Dr. Lynne Cox, Takena Hall Rm. 107. If you believe a faculty member or LBCC employee is violating your rights, please report to Human Resources, Scott Rolen, Calapooia Center Rm. 108.

Changes to the Syllabus

I reserve the right to change the contents of this syllabus due to unforeseen circumstances. You will be given notice of relevant changes in class, or through LBCC e-mail.

ENGR 212 Class Schedule:

Week:	Topics Covered:	Assignments Due:
1 Jan 4	<ul style="list-style-type: none">• Syllabus• 01_Introduction to Dynamics• 02_Variable Acceleration• 03_Curvilinear Cartesian	<ul style="list-style-type: none">• Syllabus Quiz (Take by Sunday Jan 10)
2 Jan 11	<ul style="list-style-type: none">• 04_Curvilinear Normal Tangential• 05_Curvilinear Polar• 06_Pullies• 07_Simple Relative Motion• 08_F=ma Intro and Friction	<ul style="list-style-type: none">• Homework #1 (Due on Friday Jan 15)
3 Jan 18	<ul style="list-style-type: none">• 09_F=ma• 10_F=ma Curved Motion	<ul style="list-style-type: none">• Homework #2 (Due on Friday Jan 22)
4 Jan 25	<ul style="list-style-type: none">• 11_Work and Energy• Midterm #1 Review	<ul style="list-style-type: none">• Homework #3 (Due on Friday Jan 29)
5 Feb 1	<ul style="list-style-type: none">• 12_Momentum and Impulse Part 1• 12_Momentum and Impulse Part 2	<ul style="list-style-type: none">• Midterm #1 (Monday Feb 1)• Homework #4 (Due on Friday Feb 5)
6 Feb 8	<ul style="list-style-type: none">• 13_Rigid Body Rotation• 14_Plane Motion Rel Vel Part 1	<ul style="list-style-type: none">• Homework #5 (Due on Friday Feb 12)
7 Feb15	<ul style="list-style-type: none">• 14_Plane Motion Rel Vel Part 2• Midterm #2 Review	<ul style="list-style-type: none">• Homework #6 (Due on Friday Feb 19)
8 Feb 22	<ul style="list-style-type: none">• 15_Plane Motion Rel Acc	<ul style="list-style-type: none">• Midterm #2 (Monday Feb 22)• Homework #7 (Due on Friday Feb 26)
9 Feb 29	<ul style="list-style-type: none">• 16_Moment of Inertia and Center of Gravity• 17_Rigid Body Kinetics Translation• 18_Rigid Body Kinetics Rotation	<ul style="list-style-type: none">• Homework #8 (Due on Friday Mar 5)
10 Mar 8	<ul style="list-style-type: none">• 19_Rigid Body Kinetics Plane Motion• Final Review	<ul style="list-style-type: none">• Homework #9 (Due on Friday Mar 12)
Finals Mar 15		<ul style="list-style-type: none">• Final Exam (Monday Mar 15)