

Welcome to Dynamics

Dear Student,

My name is **Eltahry Elghandour**, and I will be your instructor in the upcoming online version of **Dynamics (ENGR251)**. This letter is to inform you of some important details prior to the commencement of this online class. Please read this page carefully!!

For many of you this will be your first true engineering class and I would like to congratulate you on making it to this point. It is quit and achievement to have passed all of the **math and physics** classes required to take this class, you are the "cream of the crop"!

Time Requirement

The average student should set aside about 12 to 15 hours a week for the entire semester (18 weeks) to be successful in this class. If you are taking the class over the summer for six weeks multiplies the hours by 3.

Book Requirements

You will not be purchasing the course materials in the bookstore but you will be required to purchase them online at www.class4me.com.

The textbook "**Vector Mechanics for Engineers- Dynamics, 7th ed. by Beer/Johnston**" is required textbook. You can pick up your copy for the semester at the **Reserve Desk in the library or buy your own on Amazon if you are fair way from Cuesta College**. Please return it at the end of the term; otherwise you will be billed for it. This is an older edition and cannot be purchased in the bookstore. You are free to use the reserve copies or go online to amazon.com and buy a used copy for a fraction of what the current version is selling for, about \$180.

Web Site Requirements

We will be using www.Class4me.com as this is the site that will be managing the course and it is required. It will have the weekly activities including quizzes, videos, and homework assignments. I will send you more information as we get closer to the start of the class.

Resources for Learning

- Post questions in the class4me.com discussion forum.
- Watch the assigned video lectures online at www.Class4me.com
- Read the book or the various links provided.
- Visit the Tutorial Center www.cuesta.edu/student/servs_classes/academicsupport .
- Homework and quizzes.
- Study groups.
- Disabled Student Services www.cuesta.edu/student/servs_classes/dsps/

Options Orientation/ Frequently Asked Questions (FAQs)

In class and online class can be difficult to get started with so a required on-campus orientation will take place on **Monday 12, 2017 at 09:00 am** in room 3406. If you are unable to attend the orientation then I suggest you read the FAQs and follow-up with your instructor if you have any other questions. [FAQ](#)

Contacting the Instructor

If you have a non-private question then please post it in the class discussion forum on class4me.com, this way other students can benefit from my reply. If it is a private message then please use the messaging system from within www.Class4me.com rather than sending an email via my Cuesta account. Using the messaging system within Class4me.com will allow me to have a record of our conversation associated with the class and also won't get marked as spam that may happen with the Cuesta email account. If none of the above contact options work then you can email me at my Cuesta email account: eelghand@cuesta.edu

Meetings

The only meetings will be the orientation and the 2 exam days (**09:00 am Pacific Time**) in rm 3406 in San Luis Obispo, CA. See the syllabus for the exact days. Please make sure your schedule allows you to take the exams at 09:00am. Exams may last up to 2 hours. Students taking the exams at remote locations must coordinate and finalize with the instructor the required proctor information (<http://academic.cuesta.edu/jjones/faq.htm>). Even if you are taking the exams with a proctor you will still need to take the tests at the same time as the students taking the tests on campus. There are no provisions for anyone who misses any of these exams. Let me know if you are having problems with anything related to the course.

See web site for more information

ENGR-251 – Dynamics

INSTRUCTOR: Eltahry Elghandour, Ph.D.
OFFICE HRS: See class4me.me website
Watch Videos: online through www.class4me.com

PHONE: email me
EMAIL: eelghand@cuesta.edu
Grades: www.class4me.com

COURSE DESCRIPTION: This course will represent the traditional engineering dynamics. The dynamics engineering course deals with accelerated motion of a rigid body and particles. There are many problems in engineering whose solutions require application of the principles of dynamics, such as mechanical devices and industrial machinery to predictions of motions of artificial satellites or spacecraft. The course has the objective to develop in the engineering student the ability to solve and analyze any problem in dynamics in a simple and a logical manner. **Acceptable for credit, UC, CSU, and for ME-212 at Cal Poly.**

PREEQUISITE: ENGR 250 (Statics)

TEXT: You will not be purchasing the course materials in the bookstore but you will be required to purchase them online at www.class4me.com.
Optional: Vector Mechanics for Engineering: Dynamics, 7th Edition, F.B. Beer, E. R. Johnston, and W. E. Clausen. , McGraw Hill Inc.
You can pick up your copy for the semester at the Reserve Desk in the library at Cuesta College, San Luis Obispo. Please return at the end of the term.

TUTORS: Tutors are available for free through Tutorial Services located in building 3300.

GRADES:	Chapter Tests/projects (80%)	100-90%	A
	Quizzes and HW (20%)	89-80%	B
		79-70%	C
	+/- Grades break at 3 and 7 (ex. 83 and 87)	69-60%	D
	(I am firm on the break down, 79.99 is a C, etc!.)	59-0%	F

TESTS/ QUIZZES: NO make-ups or taking exams early will be permitted. All tests are closed book, and only basic trigonometric calculators may be used. All work must be shown in order to receive credit and adhere to the format stated above. Outside of class quizzes are open book/notes and you are NOT to use any other resources. Students are not allowed to discuss their quizzes with any other students until after the quiz has closed. Students must present a photo ID at each test.

RESPONSIBILITY: It is the student's responsibility to drop (if necessary). It is also the student's responsibility to keep up with the material. Students who are not completing and doing well on the quizzes or homework may be dropped from the class.

TEST FORMAT/Homework: Each problem must:

- Be neat, clear, and organized, use a ruler for drawing lines.
- Draw free-body diagrams (if applicable) and label all variables. (-20% if missing)
- state the equations used
- have the answer written in the answer box with units
- all pages must contain at the top: NAME, PAGE#/#
- always use pencil and never write on the back
- all lines must be drawn with a straight edge
- print using uppercase letters
- use 3 or 4 significant figures at each step in the calc (be consistent)
- don't crowd work (one problem per page)
- Use superscript format for units. Example: 100^{lb} not 100lb

TEST/QUIZ SCHEDULE (subject to change) (approximately 75 minutes allowed per test)

TEST/QUIZ NO.	CHAPTER	FORMAT	DATE
Test 1	Ch# 11, 12, 13 and 14	Proctored	Thursday June 29
Test 2	Ch# 15, 16,17, and B	Proctored	Thursday July 20

- I highly suggest that you bring a SASE to the final as unclaimed finals will be recycled immediately after I grade the final.
- Exams that are going to be proctored at a location other than Cuesta need to be taken at the same time.
- Online students must bring a photo ID to all exams.
- Quizzes and due dates can be found at www.class4me.com and are due by 9 pm PT (Pacific Time).
- Remote Proctoring info: www.class4me.com/coursedata/RequestforProctoring.pdf

REVIEW: I do not have an in-person review session since the videos can be watched again. I suggest that you pick a few of the lessons that you didn't watch or didn't understand as a review.

ONLINE VIDEOS: The videos that go along with the class can be found at www.class4me.com. This is not a free site and students wishing to use these videos will need to pay for it.

TUTORS: Tutors may be available for the class. Please log onto www.class4me.com for details. Check FAQ's for instructions to log on.

QUESTIONS? MESSAGES: Please refer to the Class4me.me web site as we have posted FAQ's there. If you still have a question then please post a message in the Discussion Forum on www.Class4me.com or drop by during office hours. If you have a private message then please email us using the email system within Class4me.me and not the Cuesta email system. Also get in the habit to check www.class4me.com everyday as we will post important messages there about the class. Refer to the FAQ's for instructions on how to log on to Class4me.me (<http://academic.cuesta.edu/jjones/faq.htm>). I generally will respond to students questions within 1 business day. I also typically check the forum and my class4me messages on the weekends, but I don't guarantee it as I may have family commitments too.

ACCOMODATIONS: Please contact the instructor if you need any special accommodations or visit DSPS.

ERRORS: If you find any error or a discrepancy, please post it in the Discussion Forum. Do not assume you know what we want. We may give extra credit to the first person who reports it.

Students are responsible to ensure that the grades posted online are correct and report any discrepancies in a timely manner.

CORRECTIONS: The instructor reserves the right to make corrections to the syllabus. Other modifications may be made with the agreement between the instructor and the student.

STUDENT LEARNING OUTCOMES:

- Understand displacement, velocity, and acceleration in both scalar and vector terms for rectilinear and curvilinear motion.
- Apply the above concepts to analyze the motion of particles undergoing variable acceleration.
- Understand Newton's laws of motion and can apply them to typical engineering problems of particle kinematics.
- Analyze 2-D rigid-body motion with both absolute- and relative-motion descriptions.
- Understand the equations of motion for rigid bodies in plane motion.
- Identify and use the work/energy and the impulse/momentum principles in plane-motion problems.
- Analyze 3-D rigid-body motion with both absolute- and relative-motion descriptions.
- Effectively communicate legible problem solutions to be understood by engineers in and out of their specific discipline.

COURSE AND COLLEGE POLICIES:

- Follow this link for [General Campus Policies](#) (including: Withdrawal, Repeatability, Student Code of Conduct)
- [Board Policy Student Conduct Code and Technology Agreement](#)
- [College Plagiarism and Academic Honesty Policy](#)
- Use [Academic Policy 4105 to assist you in addressing Authenticating student identity and regular and effective instructor contact.](#)
- Students must provide a photo ID when taking exams. Also Authenticating student identity will be conducted through the use of the Learning Management System, Moodle. Moodle requires each student to log into the program using a secure login and password to access.
- Regular and Effective Instructor Contact will be met through weekly instructor initiated homework and threaded discussion forums; weekly announcements to students; timely and effective feedback on student assignments; email, or messaging to individuals; and office hours which may be asynchronous or synchronous.

NETIQUETTE AND ONLINE COURSE PARTICIPATION:

- Use respectful and appropriate language in your forum discussions.
- Please do not use texting language, lol.
- Emoticons are acceptable ways to show emotion.
- Avoid CAPS as they come across like YOU'RE SCREAMING.
- You are expected to read all forum posts.
- All messages are public, so be careful and courteous when you post.
- Make your posts thorough and your replies as well.

TECHNICAL SUPPORT? If you have any technical issues I suggest you contact your instructor using class4me or their Cuesta email.

CORRECTIONS: The instructor reserves the right to make corrections to the syllabus.

Assignment Calendar for 7th edition of the Textbook

Week	Topic	Reading Textbook
	11.1 Introduction to Dynamics Kinematic of Particles: Rectilinear Motion of Particles Position, Velocity and Acceleration Uniform Rectilinear Motion	App. A 11.1-3 11.4-6
	Motion of Several Particles	11.4-6
	Curvilinear Motion of Particles Motion Relative for a frame in Translation	11.9-11 11.12
	Normal and Tangential Components Radial and Transverse Components	11.13 11.14
	Kinetics of Particles: Newton's Second Law 12.1 Introduction Newton's Second Law of Motion and Linear Momentum	12 12.1 12.2-6
	Angular Momentum of Particle and Central-Force Motion Equations of Motion in Terms of Radial and Transverse	12.7 12.8-9
	Kinetics of Particles: Energy and Momentum Methods 13.1 Introduction, Work of a Force Kinetic Energy, Principle of Work and Energy	13 13.1-2 13.3-5
	Potential energy Work/Energy Relation with Conservative Forces Principal of Impulse and Momentum Impact	13.6 13.8-9 13.10-13
	Direct Center Impact and Oblique Central Impact	13.14-15
	System of Particles 14.1 Introduction Force, Acceleration, and Momentum of System Particles, Work Energy, Impulse and Momentum for System of Particles	14 14.1 14.2-6 14.7-9
	TEST#1 Chapter 11, 12, 13, and 14	
	Kinematics of rigid bodies 15.1 Introduction, Rotation About a Fixed Axis Equations Defining the Rotation of a Rigid Body about a Fixed Point	15 15.1-4
	Absolute and relative velocity in plane motion	15.5-6
	Instantaneous Center of Rotation	15.7
	Absolute and relative acceleration in plane motion Plane motion	15.8
	Plane Motion of a Particle Relative to a Rotating Frame with Fixed Origin	15.10
	Plane Motion of a Particle Relative to a Rotating Frame in Central Motion.	15.11
	Moment of inertia of masse Appendix	B.1-B.5
	Plane Motion of Rigid Bodies: Forces and Acceleration Equations of Motion for a Rigid Body	16.1-7
	Equations of Motion for a Rigid Body	16. 8
	Plane Motion of Rigid Bodies: Energy and Momentum Methods Work-energy equation for rigid bodies	17.1-7
	Impulse-momentum equation for rigid bodies	17.8-10
	Impulse-Motion and Moment of inertia of masse	17:11-12 B.6-8
	Test#2 Chapter # 15, 16, 17, and App. B	