

CE215

Course Syllabus

May(Aug)
2023

Part I Course Organization

CE215 Statics and Dynamics (4units)

Lecture (2): WPHB30	Mon 11:00am-12:50pm	Wed 11:00am-12:50pm	29609R DRB146
Discussion (1)	Fri 2-2:50pm		29613R KAP144
Professor	Vincent Lee		
Office	KAP230B		
Phone	213-7400568		
Email	Through https://blackboard.usc.edu and https://piazza.com		
Office Hours	TBA through Piazza		
Teaching Assistant	TBD		
TA Office Hr	online tba		
Email	Through https://blackboard.usc.edu and https://piazza.com		
Office Hours	TBA 1 st week of class to last week of class		
Prerequisites	PHYS 151		
Textbook(s)	Engineering Mechanics: Statics & Dynamics 14th Edition By Russell C. Hibbeler The above textbook is available to purchase from the USC bookstore, or at Amazon.com :https://www.amazon.com/Engineering-Mechanics-Statics-Dynamics-		
Course Descriptions	Statics of particles and rigid bodies; equivalent force systems; distributed forces; applications to trusses, frames, machines, beams, and cables; friction; moments of inertia. Elements of vector algebra; dynamics of particles, systems of particles and rigid bodies; kinematics; momentum relations, energy methods; vibrations;		
Course Objectives	This course is appropriate for engineering students who need a strong background in the applications of physics-based mechanics principles in their work. These engineering students are primarily those dealing with structural design, machine design, aerospace		
Learning Objectives	See Pages Below		
Assignments	Online Weekly Assignments (HW & Qz)		
Late work	Partial Credit		
Make-up work	Partial Credit		
Incomplete work	Partial Credit		
Extra credit			
Final grade schema is based on the following percentages of graded coursework :			
Homework	10%		
Best 9 of 11 Qz	30%		
Midterms & Final	60%		
Total	100%		

CE215 Statics and Dynamics Fall 2021 Class Schedule

	Topics/Daily Activities	Readings and Homework	Deliverable/ Due Dates
Week 1 Aug 21,23	<i>Force, Vectors, Resultants, Particle Equilibrium</i>	<i>Statics Chap 1, 2 & 3</i>	<i>HW 1 Quiz 1</i>
Week 2 Aug 28,30	<i>Particle & Rigid Body Equilibrium</i>	<i>Statics Chap 3, 4 & 5</i>	<i>HW 2 Quiz 2</i>
Week 3 Sep 6(W)	<i>Structural Analyses: Truss & Frames</i>	<i>Sep 6 Mon: Labor Day</i> <i>Statics Chap 6</i>	<i>HW 3 Quiz 3</i>
Week 4 Sep 11,13	<i>Shear/Moment Diagrams</i>	<i>Statics Chap 7</i>	<i>HW 4 Quiz 4</i>
Week 5 Sep 18,20	<i>Kinematics: Rectangular & Curvilinear coordinates</i>	<i>Dynamics Chap 12</i>	<i>HW 5</i> <i>Sep20 MT#1 (1 hr)</i>
Week 6 Sep 25,27	<i>Kinetics: Equations of Motions</i>	<i>Dynamics Chap 13</i>	<i>HW 6 Quiz 5</i>
Week 7 Oct 2, 4	<i>Work & Energy</i>	<i>Dynamics Chap 14</i>	<i>HW 7 Quiz 6</i>
Week 8 Oct 9, 11	<i>Impulse & Momentum</i>	<i>Dynamics Chap 15</i>	<i>HW 8 Quiz 7</i>
Week 9 Oct 16, 18	<i>Kinetics: System of Particles</i>	<i>Dynamics Chap 13</i>	<i>HW9 Quiz 8</i>
Week 10 Oct 23,25	<i>Plane Rigid Body Kinematics</i>	<i>Dynamics Chap 16</i>	<i>HW 10</i> <i>Oct25 MT#2 (1hr)</i>
Week 11 Oct 30,Nov 1	<i>Kinetics of Rigid Bodies</i>	<i>Dynamics Chap 17</i>	<i>HW 11 Quiz 9</i>
Week 12 Nov 6. 8	<i>Kinetics of Rigid Bodies Translation & Rotation</i>	<i>Dynamics Chap 17</i>	<i>HW 12 Quiz 10</i>
Week 13 Nov 13,15	<i>Rigid Body Work & Energy</i>	<i>Dynamics Chap 18</i>	<i>HW 13 Quiz 11</i>
Week 14, 15 Nov20(M) Nov27, 29	<i>Rigid Body Impulse & Momentum Review</i>	<i>Dynamics Chap 19</i> <i>Happy Thanksgiving!</i>	<i>HW 14 Quiz 12</i>
FINAL		Stay Healthy!	<i>Dec 6 Wed 11am-1pm Final</i>

STATEMENT ON ACADEMIC INTEGRITY

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own.

All students are expected to understand and abide by these principles. *SCampus*, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A:

<http://www.usc.edu/dept/publications/SCAMPUS/gov/>

Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at:

<http://www.usc.edu/student-affairs/SJACS/>

STATEMENT FOR STUDENTS WITH DISABILITIES

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible.

DSP Contact Information

OFFICE LOCATION STU301	HOURS OF OPERATION 8:30 a.m.until5:00p.m.,MondaytoFriday	PHONE NUMBER (213)740-0776
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Part II Detailed Course Objectives

	By the end of this course, the student should be able to have learned and has a basic understanding of ...
1	Force Vector, Particle Equilibrium, Force System Resultants, Distributed Loads
2	Rigid Body Equilibrium, Structural Analysis: Truss, Frames & Machines
3	Internal Forces, Shear & Moment Calculations and Diagrams, Dry Friction
4	Kinematics: Rectilinear, Cartesian & Curvilinear Coordinates
5	Kinetics: Equation of Motions & of a System of Particles
6	Work & Energy of a Particle & a System of Particles
7	Impulse and Momentum
8	Kinematics of Rigid Bodies, Kinetics of Rigid bodies
9	Work & Energy of Rigid Bodies
10	Impulse and Momentum of Rigid Bodies