Semester:	**Fall 2020**	Instructor Name:	**Octavio Ortiz**
Course Title & #:	**ENGR 210 - Statics**	Email:	**octavio.ortiz@imperial.edu**
CRN #:	**11364**	Webpage (optional):	**Canvas Course ENGR-210**
Classroom:	**Online**	Office #:	**Online**
Class Dates:	**8/17/20 – 12/12/20**	Office Hours:	**W 5:15 – 6:15 PM**
Class Days:	**Wednesdays**	Office Phone #:	**Email me**
Class Times:	**Online 18:30 – 21:40**		
Units:	**3.0**		

Course Description

Force systems, equilibrium, structures, distributed forces, friction, virtual work, moments of inertia, vector algebra. (CSU, UC)

Course Prerequisite(s) and/or Corequisite(s)

PHYS 200 with a grade of "C" or better, and credit or concurrent enrollment in MATH 194.

Student Learning Outcomes

At the end of the course, students should be able to:

1. Demonstrate an ability to apply appropriate vector manipulation techniques (including decomposition of vectors into its components) in the solution of static equilibrium problems for both particle and rigid body systems.
2. Analyze the static equilibrium of structural components, such as, simple trusses, frames and simple machines.
3. Identify and implement appropriate solution techniques to algebraic and trigonometric equations. (including the use of graphical solutions and the appropriate implementation of trigonometric identities)
4. Simplify complex loading systems (including distributed loadings) to a single resultant force and a couple moment, or a single resultant force acting a quantified distance from a specified point.
5. Appropriately analyze static equilibrium problems involving dry friction for systems in impending motion.
6. Calculate maximum allowable forces necessary for equilibrium for rigid bodies experiencing frictional forces.
7. Determine reaction forces and moments for various supports.
8. Draw shear and bending moment diagrams within beams under simple and complex loadings.
9. Calculate the centroid of figures defined by mathematical functions, simple geometric shapes and composite figures composed of simple geometric shapes.
10. Calculate the moment of inertia of figures defined by mathematical functions, simple geometric shapes and composite figures composed of simple geometric shapes.

The student learning outcomes listed above directly map to the following student outcomes outlined by ABET and ASME for accreditation of engineering programs.

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. (ABET student outcome 1)
2. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies. (ABET student outcome 7)
3. An ability to apply principles of engineering, basic science, and mathematics (including multivariable calculus and differential equations) to model, analyze, design and realize physical systems, components or processes. (ASME student outcome 1)

Course Objectives

Throughout the semester students will develop an understanding of, and demonstrate their proficiency in the following concepts and principles pertaining to vector mechanics, statics:

1. Components of a force and the resultant force for a system of forces
2. Moment caused by a force acting on a rigid body
3. Principle of transmissibility and the line of action
4. Moment due to several concurrent forces
5. Force and moment reactions at the supports and connections of a rigid body
6. Force in members of a truss using the Method of Joints and the Method of Sections
7. Applications dealing with the equilibrium of bodies subjected to dry frictional forces
8. Centroid and center of gravity for an area and a rigid body
9. Moment of inertia and radius of gyration of a composite area

Textbooks & Other Resources or Links

Engineering Mechanics: Statics & Dynamics (w/out Mastering Access)
Author: R. C. Hibbeler
Edition: 14th
ISBN: 9780133915426
Copyright Year: 2016
Publisher: Pearson

Course Requirements and Instructional Methods

Each session will consist of a combination of lectures, group discussions, problem solving and reflecting on the concepts covered. Students will be encouraged to share their ideas with each other and with the class to promote active engagement. Homework will be assigned weekly and checked for completion. Although homework will not be collected for grading, it will serve as the primary source for quiz problems administered at the beginning of class on selected dates. Three midterms (the last being the final) will be administered to gauge student understanding of the concepts covered.

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

What if I need to borrow technology or access to WIFI?

1. To request a loaner laptop, MYFI device, or other electronic device, please submit your request here: https://imperial.edu/students/student-equity-and-achievement/

2. If you'd like access the WIFI at the IVC campus, you can park in parking lots "I & J". Students must log into the IVC student WIFI by using their IVC email and password. The parking lots will be open Monday through Friday from 8:00 a.m. to 7:00 p.m.

   Guidelines for using parking WIFI:
   -Park in every other space (empty space BETWEEN vehicles)
   -Must have facemask available
   -For best reception park near buildings
   -Only park at marked student spaces
   -Only owners of a valid disabled placard may use disabled parking spaces
   -Only members of the same household in each vehicle
   -Occupants **MUST** remain in vehicles
   -Restrooms and other on-campus services not available
   -College campus safety will monitor the parking lot
   -Student code of conduct and all other parking guidelines are in effect
   -Please do not leave any trash behind
   -No parking permit required

If you have any questions about using parking WIFI, please call Student Affairs at 760- 355-6455.

Course Grading Based on Course Objectives

The semester will consist of six quizzes, each of which will account for 15% of your overall grade. Homework assignments will account for the remaining 10% of the overall grade. It is crucial that you do all homework assignments as they will be the primary source for midterm problems.

Submission of homework and quiz assignments will be electronic. Homework will be graded at random for credit/no-credit.

CATEGORY	PERCENT OF GRADE
Homework	10%
Quiz (6 @ 15% each)	90%

A =	**90 – 100%**
B =	**80 – 89%**
C =	**70 – 79%**
D =	**60 – 69%**
F =	**0 – 59%**

Attendance

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. It is the student's responsibility to drop or officially withdraw from the class. See General Catalog for details.
- Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.

What does it mean to "attend" an online class?

Attendance is critical to student success and for IVC to use federal aid funds. Acceptable indications of attendance are:

- Student submission of an academic assignment
- Student submission of an exam
- Student participation in an instructor-led Zoom conference
- Documented student interaction with class postings, such as an interactive tutorial or computer-assisted instruction via modules
- A posting by the student showing the student's participation in an assignment created by the instructor
- A posting by the student in a discussion forum showing the student's participation in an online discussion about academic matters
- An email from the student or other documentation showing that the student has initiated contact with a faculty member to ask a question about an academic subject studied in the course.

Logging onto Canvas alone is NOT adequate to demonstrate academic attendance by the student.

Classroom Etiquette

- Electronic Devices: Cell phones and electronic devices must be turned off and put away during class, unless otherwise directed by the instructor.
- Food and Drink are prohibited in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Please comply as directed by the instructor.
- Disruptive Students: Students who disrupt or interfere with a class may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the General Catalog.
- Children in the classroom: Due to college rules and state laws, only students enrolled in the class may attend; children are not allowed.

How do I act differently if I have an on-ground class during COVID?

1. **DO NOT COME TO CAMPUS OR ATTEND AN OFF-CAMPUS CLASS IF YOU FEEL SICK, HAVE A FEVER, OR HAVE A COUGH**
    a. Even if your symptoms are mild, stay home.
    b. Email your instructor to explain why you are missing class.
    c. If you are sick with COVID-19 or think you might have COVID-19, provides CDC guidance.
    d. If you have tested positive for COVID-19, you must self-quarantine for 14 days and then be without symptoms for at least 72 hours. Clearance is required prior to returning to any face-to-face interaction. It is recommended that you undergo a final COVID-19 test to confirm that you are no longer infected.
    e. If you are exposed through direct contact with a person known to be COVID-19 positive, then you must submit negative COVID-19 test results prior to returning to any face-to-face interaction.
2. **ARRIVE AT CAMPUS EARLY (at least 15 minutes early is advised).**
    a. All people entering the IVC campus will need to pass a screening process, which will occur at the gates as your drive onto campus. You will need to take a short questionnaire and get your temperature taken (the screening is completely touchless and will take place while you remain in your car).
3. **BRING A MASK TO CLASS (and always wear it).**
    a. Be sure that your mask covers both your nose and mouth. If your mask is cloth, then wash it each day. If your mask is disposable, then use a new one each day.
4. **GO DIRECTLY TO YOUR CLASSROOM.**
    a. The IVC campus is mostly closed so you should not visit other areas or seek any face-to-face services. Services are available to students online and can be accessed through www.imperial.edu.
5. **WASH YOUR HANDS FREQUENTLY (and use the provided sanitation supplies).**
    a. Your classroom is equipped with cleaning supplies. Use them as needed.
6. **BE SURE TO SOCIAL DISTANCE (stay at least 6 feet from other).**
    a. The number of students in a classroom at any one time is very limited so you have plenty of space to spread and ensure that you stay at least 6 feet from others.
7. **BRING YOUR OWN FOOD AND DRINKS.**

There is no food service currently offered on campus.

Online Netiquette

- What is netiquette? Netiquette is internet manners, online etiquette, and digital etiquette all rolled into one word. Basically, netiquette is a set of rules for behaving properly online.
- Students are to comply with the following rules of netiquette: (1) identify yourself, (2) include a subject line, (3) avoid sarcasm, (4) respect others' opinions and privacy, (5) acknowledge and return messages promptly, (6) copy with caution, (7) do not spam or junk mail, (8) be concise, (9) use appropriate language, (10) use appropriate emoticons (emotional icons) to help convey meaning, and (11) use appropriate intensifiers to help convey meaning [do not use ALL CAPS or multiple exclamation marks (!!!!)].

How am I expected to act in an online "classroom" (especially Zoom)?

Attending a virtual meeting can be a challenge when there are many students on one conference call. Participating in such meetings may count as class attendance, but disruptive behavior may also result in you not being admitted to future meetings. Follow the tips below for best results:

1) **Be RESPECTFUL**
    a. Your written, verbal, and non-verbal communications should be respectful and focused on the learning topics of the class.
2) **Find a QUIET LOCATION & SILENCE YOUR PHONE (if zooming)**
    a. People walking around and pets barking can be a distraction.
3) **EAT AT A DIFFERENT TIME.**
    a. Crunching food or chugging drinks is distracting for others.
    b. Synchronous zoom times are set in advance so reserve meals for outside class meetings.
4) **ADJUST YOUR LIGHTING SO THAT OTHERS CAN SEE YOU**
    a. It is hard to see you in dim lighting so find a location with light.
    b. If your back is to a bright window, you will be what is called "backlit" and not only is it hard on the eyes (glare) but you look like a silhouette.
5) **POSITION THE CAMERA SO THAT YOUR FACE AND EYES ARE SHOWING**
    a. If you are using the camera, show your face; it helps others see your non-verbal cues.
    b. You may be at home, but meeting in pajamas or shirtless is not appropriate so dress suitably. Comb your hair, clean your teeth, fix your clothes, etc. before your meeting time to show self-respect and respect for others.
6) **Be READY TO LEARN AND PAY ATTENTION**
    a. Catch up on other emails or other work later.
    b. If you are Zooming, silence your phone and put it away.
    c. If you are in a room with a TV – turn it off.
7) **USE YOUR MUTE BUTTON WHEN IN LOUD PLACES OR FOR DISTRACTIONS**
    a. Pets barking, children crying, sneezing, coughing, etc. can happen unexpectedly. It's best if you conference in a private space, but if you can't find a quiet place, when noises arise **MUTE** your laptop.
8) **REMEMBER TO UNMUTE WHEN SPEAKING**
    a. Follow your instructor's directions about using the **"raise hand"** icon or chat function to be recognized and to speak, but make sure you have unmuted your device.
    b. Do not speak when someone else is speaking.
9) **REMAIN FOCUSED AND PARTICIPATE IN THE MEETING**
    a. Especially when the camera is on YOU, we can all see your actions. Engage in the meeting. Look at the camera. Listen to instruction. Answer questions when asked.
    b. Do not use the Zoom meeting to meet with your peers or put on a "show" for them.
10) **PAUSE YOUR VIDEO IF MOVING OR DOING SOMETHING DISTRACTING**
    a. Emergencies happen. If you need to leave the room or get up and move about, stop your video.

Academic Honesty

Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another's work and recognize the important of acknowledging and safeguarding intellectual property.

There are many different forms of academic dishonesty. The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.

- Plagiarism is taking and presenting as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to "cite a source" correctly, you must ask for help.
- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question.

Anyone caught cheating or plagiarizing will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the General Catalog for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment; (e) using a commercial term paper service.

How do I show academic honesty and integrity in an online "classroom"?

- **KEEP YOUR PASSWORDS CONFIDENTIAL.**
  - You have a unique password to access online software like Canvas. Never allow someone else to log-in to your account.
- **COMPLETE YOUR OWN COURSEWORK.**
  - When you register for an online class and log-in to Canvas, you do so with the understanding that you will produce your own work, take your own exams, and will do so without the assistance of others (unless directed by the instructor).

Examples of Academic Dishonesty that can occur in an online environment:

- Copying from others on a quiz, test, examination, or assignment;
- Allowing someone else to copy your answers on a quiz, test, exam, or assignment;
- Having someone else take an exam or quiz for you;
- Conferring with others during a test or quiz (if the instructor didn't explicitly say it was a group project, then he/she expects you to do the work without conferring with others);
- Buying or using a term paper or research paper from an internet source or other company or taking any work of another, even with permission, and presenting the work as your own;
- Excessive revising or editing by others that substantially alters your final work;

- Sharing information that allows other students an advantage on an exam (such as telling a peer what to expect on a make-up exam or prepping a student for a test in another section of the same class);

Taking and using the words, work, or ideas of others and presenting any of these as your own work is plagiarism. This applies to all work generated by another, whether it be oral, written, or artistic work. Plagiarism may either be deliberate or unintentional.

Additional Student Services

Imperial Valley College offers various services in support of student success. The following are some of the services available for students. Please speak to your instructor about additional services which may be available.

How do I access services now that we are mostly online?

- CANVAS LMS. Canvas is Imperial Valley College's Learning Management System. To log onto Canvas, use this link: Canvas Student Login. The Canvas Student Guides Site provides a variety of support available to students 24 hours per day. Additionally, a 24/7 Canvas Support Hotline is available for students to use: 877-893-9853.
- Learning Services. In order to accommodate students and maximize student success during the COVID-19 Pandemic, all tutoring support is being provided through one Zoom link (IVC online Tutoring). When campus is open again, there are several learning labs to assist students. Whether you need support using computers, or you need a tutor, please consult your Campus Map for the Math Lab; Reading, Writing & Language Labs; and the Study Skills Center.
- Library Services. Visit the Spencer Library's page on the IVC website for a wealth of valuable resources and online access to databases, e-books and more. Contact us so we can help you with instructional and research development skills (for those conducting research and writing academic papers). When campus re-opens, students also have access to tutoring services in the Study Skills Center as well as private study rooms for small study groups. There is more to our library than just books!
- Career Services Center. The Career Services Center is dedicated to serve all IVC students and Alumni. Services include Career Assessments, Resume and Cover Letter Assistance, Interview Preparation, Internship Opportunities and Job Placement.

Child Development Center. The Preschool and Infant/Toddler Centers are on-campus demonstration lab programs that meet the educational, research, and service needs of the institution and community at large. The Preschool program (children three to five years of age) and the Infant/Toddler program (newborn to three years of age) is in buildings 2200 and 2300. Service is available to families who meet the California Department of Education qualifications for enrollment. The centers are open during COVID from Monday-Friday 7:15-5:30. Breakfast, lunch and snack are provided through the California Adult and Child Food Program. Location: Buildings 2200 and 2300. Phone: (760) 355-6528 or (760) 355-6232. Application: https://forms.imperial.edu/view.php?id=150958

Disabled Student Programs and Services (DSPS)

Any student with a documented disability who may need educational accommodations should notify the instructor or the Disabled Student Programs and Services (DSP&S) office as soon as possible. When campus is open, the DSP&S office is located in Building 2100, telephone 760-355-6313. Please contact them if you feel you need to be evaluated for educational accommodations.

Student Counseling and Health Services

Students have counseling and health services available, provided by the pre-paid Student Health Fee.

- **Student Health Center**. A Student Health Nurse is available on campus, but you must make an appointment. In addition, Pioneers Memorial Healthcare District provide basic health services for students, such as first aid and care for minor illnesses. Contact the IVC Student Health Center at 760-355-6128, or when campus reopens, visit Room 1536 for more information.
- **Mental Health Counseling Services**. Short-term individual, couples, family and group counseling services are available for currently enrolled students. Services are provided in a confidential, supportive, and culturally sensitive environment. Please contact the IVC Mental Health Counseling Services at 760-355-6310 for appointments, or when campus reopens visit Room 1536 for more information.

Veteran's Center

The mission of the IVC Military and Veteran Success Center is to provide a holistic approach to serving military/veteran students on three key areas: 1) Academics, 2) Health and Wellness, and 3) Camaraderie; to serve as a central hub that connects military/veteran students, as well as their families, to campus and community resources. Their goal is to ensure a seamless transition from military to civilian life. The Center is located in Building 600 (Office 624), telephone 760-355-6141.

Extended Opportunity Program and Services (EOPS)

The Extended Opportunity Program and Services (EOPS) offers services such as priority registration, personal/academic counseling, tutoring, book vouchers, and community referrals to qualifying low-income students. EOPS is composed of a group of professionals ready to assist you with the resolution of both academic and personal issues. Our staff is set up to understand the problems of our culturally diverse population and strives to meet student needs that are as diverse as our student population.

Also under the umbrella of EOPS our CARE (Cooperative Agency Resources for Education) Program for single parents is specifically designed to provide support services and assist with the resolution of issues that are particular to this population. Students that are single parents receiving TANF/Cash Aid assistance may qualify for our CARE program, for additional information on CARE please contact Lourdes Mercado, 760-355- 6448, lourdes.mercado@imperial.edu.

EOPS provides additional support and services that may identify with one of the following experiences:

- Current and former foster youth students that were in the foster care system at any point in their lives
- Students experiencing homelessness
- Formerly incarcerated students

To apply for EOPS and for additional information on EOPS services, please contact Alexis Ayala, 760-355-5713, alexis.ayala@imperial.edu.

Student Equity Program

The Student Equity Program strives to improve Imperial Valley College's success outcomes, particularly for students who have been historically underrepresented and underserved. The college identifies strategies to monitor and address equity issues, making efforts to mitigate any disproportionate impact on student success and achievement. Our institutional data provides insight surrounding student populations who historically, are not fully represented. Student Equity addresses disparities and/or disproportionate impact in student success across disaggregated student equity groups including gender, ethnicity, disability status, financial need, Veterans, foster youth, homelessness, and formerly incarcerated students. The Student Equity Program provides direct supportive services to empower students experiencing insecurities related to food, housing, transportation, textbooks, and shower access. We recognize that students who struggle meeting their basic needs are also at an academic and economic disadvantage, creating barriers to academic success and wellness. We strive to remove barriers that affect IVC students' access to education, degree and certificate completion, successful completion of developmental math and English courses, and the ability to transfer to a university. SEA also provides outreach at local Imperial County high schools to ensure graduating seniors are successfully matriculated into the college and have a strong support system. Please visit us online for assistance at https://imperial.edu/students/student-equity-and-achievement/ or call us at 760-355-6465 or when campus reopens, visit Building 401.

What if I cannot afford food, books, or need other help?

- We have many resources that are available to you. Please tell us what you need by submitting your request(s) here: https://imperial.edu/students/student-equity-and-achievement/

Student Rights and Responsibilities

Students have the right to experience a positive learning environment and to due process of law. For more information regarding student rights and responsibilities, please refer to the IVC General Catalog.

Information Literacy

Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. The IVC Library Department provides numerous Information Literacy Tutorials to assist students in this endeavor.

Tentative Class Schedule/Calendar

The following is a tentative calendar of the semester. Its purpose is to provide you with a general overview of chapters, homework assignments, tests and corresponding due dates that will be administered henceforth. The instructor will try to adhere to the calendar, however, he reserves the right to make adjustments to the calendar based on the progression of each session.

Homework problems assigned from:
Engineering Mechanics: Statics & Dynamics (w/out Mastering Access), R. C. Hibbeler, 14th Edition, ISBN: 9780133915426, 2016, Pearson

Lecture	Day	Date	Topic	Reading	Homework
1	W	08/19	Syllabus & Introduction Chapter 1 – General Principles • Models of Analysis: Point-mass, rigid body, concentrated force • Newton's Laws, Law of Gravitation and Weight • SI & U.S. Customary Units Chapter 2 – Force Vectors • Scalar & vector quantities • Parallelogram law of addition • Vector decomposition through right triangle trigonometry • Scalar & vector operations (dot product) • Resultant forces in two and three dimensions (coplanar, Cartesian components)	Ch. 1 Ch. 2	Optional:1-1, 1-2, 1-3, 1-9, 1-11, 1-13 F2-1, F2-2, F2-4, F2-5, 2-2, 2-22, F2-7, F2-9, 2-41, F2-18
2	W	08/26	Chapter 3 – Equilibrium of a Particle • Free-body diagrams (point mass) • $\sum F = 0$ • Springs ($F = ks$), cables & pulleys • 2D & 3D Force Systems	Ch.3, Sec 4.1 & 4.2	F3-5, F3-6, 3-19, 3-21, 3-30, 3-41, 3-45,
3	W	09/02	**Quiz – Chapters 1-3** Chapter 4 – Force System Resultants • Moments/Torque, moment arm • $M_0 = Fd$ • Cross Product Moment Vector • Moment of a Couple • Varignon's theorem (principle of moments) • F_R for distributed loads	Ch. 4	F4-2, F4-5, F4-7, F4-9, F4-12, F4-14, F4-18, F4-21, F4-22, 4-81, F4-26, F4-27, F4-28, 4-101, 4-103

Lecture	Day	Date	Topic	Reading	Homework
4	W	09/09	Chapter 3 & 4 Review • Decomposing 2D vectors through right triangle trigonometry • Equilibrium of a point particle • Simplifying distributed loadings • 2D & 3D Force Systems	Review Chapters 1-4	F4-17, F4-32, F4-34, 4-121, 4-118, F4-39, F4-41, 4-151, 4-157, 4-159
5	W	09/16	**Quiz: Chapter 1-4** Chapter 5 – Equilibrium of a Rigid Body • Free-Body diagrams (rigid body) • Equilibrium of a rigid body • Equations of equilibrium	Ch. 5	F5-2, F5-3, F5-4, F5-5, F5-6, 5-10, 5-11, 5-13, 5-15, 5-59
6	W	09/23	Chapter 5 – Equilibrium of a Rigid Body • $\sum F = 0, \sum M_O = 0$ • Support reactions (Table 5-1) • Equilibrium in three dimensions	Ch. 5	5-22, 5-23, 5-25, 5-39, 5-42, 5-43, F5-7, F5-10, 5-69, 5-85
7	W	09/30	**Quiz: Chapter 5** Chapter 6 – Structural Analysis • Simple trusses (tension, compression, joints) • Method of Joints • Method of Sections	Ch. 6	F6-3, 6-14, 6-17, F6-7, F6-10, F6-23, 6-69, 6-73
8	W	10/07	Chapter 6 – Structural Analysis • Method of Sections • Zero-Force members • Frames & machines Chapter 7 – Internal Forces • Shear force & bending moment diagrams • Cables	Ch. 6, Sec 7.1,	F7-2, F7-4, 7-11, 7-26
9	W	10/14	Chapter 6 & 7 Review • Simple trusses (tension, compression, joints) • Frames & machines • Equilibrium of a rigid body • Reaction at supports • Shear and bending moments in beams **Quiz: Chapter 6 & 7**	Review Chapters 1-7	4-126, 4-153, 4-158, 5-36, 5-49, 6-21, 6-41, 6-71, 6-103, 6-111
10	W	10/21	Chapter 8 – Friction • Limiting static frictional force • $F_s = \mu_s N$ (impending motion) • Angle of static friction	Sec 8.1 – 8.3	F8-3, F8-4, F8-6, F8-9, 8-3, 8-23, 8-

Lecture	Day	Date	Topic	Reading	Homework
			• Equilibrium of systems with dry friction • Wedges		31, 8-42, 8-45, 8-47
11	W	10/28	Chapter 8 Review **Quiz: Chapter 8**		
12	W	11/04	Chapter 9 – Center of Gravity and Centroid • Center of gravity/center of mass/centroid • Centroid of an area • Centroid of a line segment • Centroid of composite figures • Theorems of Pappus & Guldinus	Sec 9.1 – 9.3	F9-1, F9-3, 9-13, 9-14, 9-17, 9-21, 9-22, 9-29, 9-58, 9-65
13	W	11/11	Chapter 10 – Moments of Inertia • Inertia • Definition of moment of inertia • Parallel-axis theorem • Radius of Gyration • Composite areas & moments of inertia	Sec 10.1 – 10.4	F10-2, F10-3, F10-4, 10-11, 10-12, 10-13, 10-14, 10-15, 10-16, 10-21, 10-22, 10-33
14	W	11/18	Chapter 10 – Moments of Inertia • Mass moment of inertia **Quiz: Chapter 9 & 10 (Not including Sec 10.8)** Chapter 11 – Virtual Work • Principle of virtual work • Gravitation and elastic potential energy	Sec 10.8	10-86, 10-89, 10-95, 10-98, F11-1, F11-5, 11-1, 11-11
15	W	12/02	Sec 10.8 & Chapter 11 Review • Equilibrium of a point particle and rigid bodies • Determine reaction at supports for simply and complex loading on rigid bodies • Factor frictional forces into equilibrium analysis • Simple trusses and member forces(tension, compression, joints) • Centroid & moments of inertia • Virtual Work	Review Chapters 1-11	Review previous two midterms and notes
16	**W**	**12/09**	**Quiz: Chapter 11**		

*****Tentative, subject to change without prior notice*****