

Fall/2024

ENGR 2214/02 – Engineering Mechanics: Statics**Instructor:** Hosain (Amir) Haddad Kolour, PhD, PE

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Textbook (Day One Access):*Modified Mastering Engineering with Pearson eText for Engineering Mechanics: Statics, 15th Edition, ISBN: 9780134867298, By: Russell Hibbeler***Lecture:** T R 12:30-1:45

Room: D218

Office Hours: M W, 12:30 - 3:00

(by appointment or walk-in when the door is open)

Prerequisite: PHYS 2211 & PHYS 2211L**Course Description:** This course studies the force vectors, equilibrium of particles, equilibrium of rigid bodies in two and three dimensions; trusses, friction, centroids, and moments of inertia.**Credit Hours:** 3-0-3 (3 Class Hours-0 Laboratory Hours-3 Credit Hours)**Course Communication:** D2L shall be considered the primary method of communication from the instructor, and the student should check D2L regularly. You can ask questions and ask for clarification by e-mail, in class, or by visiting the instructor during office hours or by appointment.
<http://d2l.kennesaw.edu>**Electronic Communications.** The University provides all KSU students with an “official” email account with the address “students.kennesaw.edu.” As a result of federal laws protecting educational information and other data, **this is the sole email account you should use to communicate with your instructor or other University officials.****Course Learning Outcomes:** Upon successful completion of this course, students shall be able to:

1. Manipulate 2D and 3D vector systems to find vector components and resultants.
2. Calculate the moment about a point and about a specified axis;
3. Reduce a system of forces to a force-couple system and to a single force;
4. Develop free body diagrams and apply the equations of equilibrium to calculate support reactions and internal forces for structures such as beams, frames, and machines subjected to concentrated forces, distributed loadings, and moments.
5. Analyze plane trusses using the method of joints and the method of sections;
6. Determine the centroids and moments of inertia of simple 2D areas using integration and of composite 2D areas with respect to specified axes.

Course Topics and Outline

Week	Topic	Textbook Sections	Learning Outcome	Remarks
1	General Principles	1.2-1.3	--	
1	Force Vectors	2	--	
2				
3				
4	Equilibrium of a Particle	3.1-3.3	1	
5	Equilibrium of a Particle	3.4*	1	*a brief introduction to 3D only
6	Midterm 1: 9/19 (Chapters 1, 2, and 3)			
7	Force System Resultants	4.1-4.7, 4.9	2, 3	
8				
9	Equilibrium of a Rigid Body	5.1-5.4, 5.7	1, 4	
10	Structural Analysis	6.1-6.4, 6.6	1, 4, 5	
11				
Midterm 2: 10/24 (Chapters 4, 5, and 6)				
12	Internal Forces	7.1	1, 4	
13	Centroid	9.1-9.2	6	
14	Moments of Inertia	10.1, 2, 4	7	
15	Review	--	--	
TBD	Final Exam Date and Time per the Registrar's Website			

Grading Scale and Course Policies

Grading Scale:

Homework: 10%

Quizzes: 15%

Midterm exam 1: 20%

Midterm exam 2: 20%

Final Exam (during finals week): 35%

A: 90.0-100.0 B: 80.0-89.9 C: 70.0-79.9 D: 60.0-69.9 F: < 60.0

Attendance Policy: Attendance is necessary for all class lectures unless you are ill or officially excused by the instructor (such as a result of official, documented participation in a university function). In the case of unavoidable absences, you are responsible for making up the work done in class. It is not the instructor's responsibility to provide the student with that information outside of class. It is the student's responsibility to obtain any missed information or handouts given in class from a classmate.

Homework Policy: Homework assignments will be assigned regularly throughout the term. The homework problems will be comprised of some problems from the course textbook, as well as other problems. The goal of the homework is to give the student practice in larger scope engineering problems, and usually cover topics in their entirety. These longer problems prepare the student for "real world" engineering type problems, and are also modeled to be similar to the types of questions found in the midterm exams.

Unless specifically instructed otherwise, you are to submit all written work to the instructor in class in hard copy. Homework shall adhere to the following guidelines:

- Homework is due at the START of class on the due date.
- Homework shall be submitted on engineering calculation sheets or plain white copier paper and must be bound or stapled. Do not use notebook paper or ruled paper.
- All problems must be clearly delineated by starting a new page or by drawing straight lines between each problem.
- Draw figures, free body diagrams, or graphs where appropriate.
- All answers must be boxed.
- Units, where appropriate, should be written for the answer and in every step of each problem.

All students are expected to complete any and all assignments given. The homework is intended to give you the necessary exposure and experience for you to succeed in grasping a firm understanding of the course objectives. The instructor reserves the right to modify assignments as necessary. Late homework will NOT be accepted for credit. Work turned in late will not be graded/given credit except in approved cases of documented emergency.

Homework is usually returned within a week to give you feedback on your understanding of key concepts.

Note if homework will be submitted electronically via D2L or in person.

Quiz Policy:

The quizzes given in this course generally cover smaller, more concentrated learning objectives than do the homework and the midterm exams. The quizzes are meant to ensure that you are familiar with particular steps or components of larger problems. These smaller problems are formatted to prepare you for the format and question types covered in the course final exam.

Quizzes will usually be administered online through D2L Brightspace or during class. It is your responsibility to ensure that the required technology (such as the student's personal computer) is functional during the quiz window. Please be sure to check that D2L Brightspace is not down for maintenance during the desired quiz taking time.

There may be some pop quizzes too. No make-up quizzes will be given unless for approved absences as noted in the attendance policy section.

Midterm Exams:

The midterm exams are meant to assess your grasp of more in-depth, large scale problems, and contain problems similar in size and scope to the assigned homework. Generally, the mid-term exams are not cumulative, but rather cover material delivered since the previous exam.

Unless directed otherwise, exams will be held in the usual classroom during scheduled class meetings. Unless instructed otherwise, exams will be closed book and notes, with the exception that the class provided formula sheet. The formula sheet shall be unmarked and bound (book form or stapled). "Unmarked" means that no handwritten notes or comments are allowed in the reference.

Final Exam:

The course final exam is a cumulative exam, covering all topics covered during the term.

Unless directed otherwise, the final exam will be held during finals week in the usual classroom.

Check the KSU registrar's website for additional scheduling information. Similar to the midterm exams, the exam will be closed books and notes, with the exception that the class formula sheet can be used.

Make-up Policy

There will be no make-up exams under any circumstances, except for approved absences as noted in the attendance policy section. If your absence is excused, then the instructor reserves to have you either make up the exam, or to have subsequent exams/final exam weighted more heavily to make up for the missing points.

Uploaded Work Policy

For Homework, Module tests, and the Final Exam you are required to upload your hand calculations to D2L. You cannot earn credit for you answers without supporting hand calculations. Student work must be uploaded in a **single file in pdf or word format. Multiple files or image files are not acceptable.**

- Uploaded work should be well organized and include student name and problem number.
- All problems must be clearly delineated by starting a new page or by drawing horizontal straight lines between each problem. Delineating problems with a vertical line is not acceptable.
- Draw figures, free body diagrams, or graphs where appropriate.
- All answers must be boxed.
- Apps such as *CamScanner* and *OneDrive* are helpful in creating pdfs using a smart phone.

Ambiguity Policy: In the event of any ambiguity regarding course content (including due dates, assignments, deliverables, attendance, etc.) you are expected to select the path of greatest challenge, requiring the most work and the one that produces the most learning. Examples: "I was not sure if the assignment was due today"... then do it. "I think you may have neglected to assign homework on this topic"... Then solve some problems on it anyway.

Course Technology: Much of the course materials, quizzes, assignments, and communication will be through D2L Brightspace. It is the student's responsibility to stay current with D2L content. In the classroom, laptop/handheld computers may be used as long as it is not distracting to other students.

Response Timeframe: Grading of homework/assignments may take up to a week. I will try to respond to any discussions, comments, and questions within 24 hours Monday through Friday.] Grading of homework/assignments may take up to a week. I will try to respond to any discussions, comments, and questions within 24 hours Monday through Friday.

Cell Phones: All communication devices must be turned off or to silent mode in the classroom. The use of cell phones or other communication devices is disruptive, and is therefore prohibited during class.

Calculator Policy: Only the calculators listed below will be allowed on the Final Exam:

Casio: All fx-115 and fx-991 (Any Casio calculator must have "fx-115" or "fx-991" in its model name.)

Hewlett Packard: The HP 33s and HP 35s models, but no others

Texas Instruments: All TI-30X and TI-36X models (Any Texas Instruments calculator must have "TI-30X" or "TI-36X" in its model name.)

Instructor's Absence or Tardiness: If the instructor is late in arriving to class, you must wait 20 minutes after the start of class before you may leave without being counted absent, or you must follow any written instructions the instructor may give you about an anticipated absence or tardiness.

Netiquette: Please remember that others cannot hear you online – they can only read what you write. To keep the course friendly and inviting to all, please follow these netiquette points:

- Do not use all caps. It is the equivalent of screaming.
- Do not flame. These are outbursts of extreme emotion or opinion.
- Think before you hit the post button. You cannot take it back!
- Do not use offensive language.
- Use clear subject lines.
- Do not use abbreviations or acronyms unless the entire class knows them.
- Be forgiving. Anyone can make a mistake.
- Keep the dialog collegial and professional.
- Be sensitive and reflective to what others are writing.

Federal, BOR, & KSU Course Syllabus Policies:

Information contained in the links below constitutes the Federal, BOR, and KSU course syllabus policies and procedure. These policies are updated on the Academic Affairs Website annually.

- Academic Affairs - Federal, BOR, & KSU Policies <https://cia.kennesaw.edu/instructional-resources/syllabus-policy.php> Policies discussed here include, but are not limited to: course delivery changes, face coverings, KSU disruption of campus life policy, web accessibility, reasonable accommodations, enrollment status, copyright law, FERPA, sexual misconduct, course withdrawals, military withdrawals, academic feedback, and inclement weather. Please follow the above link to access these policies, as they apply to this course.

- Academic Affairs - KSU Student Resources for Syllabus <https://cia.kennesaw.edu/instructional-resources/syllabus-resources.php> Policies discussed here include, but are not limited to: technical help and training, student support and wellness, academic resources, and grade appeals and student complaints. Please follow the above link to access these policies, as they apply to this course.
- Academic Integrity Statement: Every KSU student is responsible for upholding the provisions of the Student Code of Conduct, as published in the Undergraduate and Graduate Catalogs. Section 5c of the Student Code of Conduct addresses the university's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to university materials, misrepresentation/falsification of university records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the Department of Student Conduct and Academic Integrity (SCAI), which includes either an "informal" resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct's minimum one semester suspension requirement.
- Electronic Communication: The University provides all KSU students with an "official" email account with the address "students.kennesaw.edu" or "kennesaw.view.usg.edu" (in D2L). As a result of federal laws protecting educational information and other data, this is the sole email account you should use to communicate with your instructor or other University officials.

Contacts to get Help:

- D2L Technical Support, go to <https://d2lhelp.view.usg.edu/> or call 678-915-HELP
- D2L Brightspace website at <https://kennesaw.view.usg.edu/d2l/login>
- KSU Help Desk Phone Number: (678) 915-HELP (4357).
- KSU Distance Learning at <http://distancelearning.kennesaw.edu/support/content-tools.php>
- KSU UITs at <http://uits.kennesaw.edu/>
- Accessibility policy of all technologies:
<https://softchalkcloud.com/lesson/serve/jV10GKPfztZwQn/html>
- Additional Resources
- Remote access to Library Resources at <http://www.kennesaw.edu/library/Dl/dl.html>
- You can find The USG Copyright Policy at <http://www.usg.edu/copyright/>
- Other help for student success at <http://sss.kennesaw.edu/>
- Academic support services and student services at (<http://kennesaw.edu/currentstudents.php>)
- KSU CETL Thank a Teacher at <http://cetl.kennesaw.edu/thank-a-teacher>
- The KSU Writing Center helps students in all majors improve their writing. Experienced, friendly writing assistants help with topic development, revision, research, documentation, grammar, and more. For more information or to make an appointment, visit writingcenter.kennesaw.edu or stop by English Building, Room 242 (Kennesaw campus) or Johnson Library, Room 121 (Marietta campus).

Course Delivery

KSU may shift the method of course delivery at any time during the semester in compliance with University System of Georgia health and safety guidelines. In this case, alternate teaching modalities that may be adopted include hyflex, hybrid, synchronous online, or asynchronous online instruction.

Face Coverings

Based on guidance from the University System of Georgia (USG), masks are encouraged based on individual preference and assessment of personal risk. Disposable face coverings can be picked up at the Office of Emergency Management at Chastain Pointe on the Kennesaw campus and Norton Hall Police Precinct on the Marietta campus. Please email oem@kennesaw.edu if you have questions.

KSU Academic Integrity Statement

Every KSU student is responsible for upholding the provisions of the Student Code of Conduct, as published in the Undergraduate and Graduate Catalogs. Section 5c of the Student Code of Conduct addresses the university's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to university materials, misrepresentation/falsification of university records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the Department of Student Conduct and Academic Integrity (SCAI), which includes either an "informal" resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct's minimum one semester suspension requirement.

Note to Faculty: The KSU faculty handbook requires the Academic Integrity Policy in the course syllabus.

KSU Disruption of Campus Life Policy

All students are responsible for knowing the information, policies and procedures outlined in the Kennesaw State University Codes of Conduct. Student Conduct and Academic Integrity (SCAI) includes: the general Student Code of Conduct, the Residential Code of Conduct, and the Code of Academic Integrity.

KSU Web Accessibility Policy Statement

Federal law Section 508 Subsection 1194.22 of the Rehabilitation Act and the Board of Regents (BOR) of the University System of Georgia (USG) Web Accessibility Guidelines require that all web content meet the federal government's accessibility guidelines. As such, KSU complies with USG guidelines.

University accessibility assistance is provided by several offices as noted below. Staff in these offices work to accommodate requests for access or assistance with access as soon as possible in order to either accommodate the request or identify an effective alternative for the requester.

REQUEST FOR	OFFICE	CONTACT NUMBER	CONTACT EMAIL
Student Support Services	Student Disability Services	470-578-2666	studentdisability@kennesaw.edu
Student Technology Assistance	University Information Technology Services	470-578-3555	studenthelpdesk@kennesaw.edu
Third Party Technology Assistance	University Information Technology Services	470-578-6999	service@kennesaw.edu

KSU Reasonable Accommodations Policy

Students with qualifying disabilities under the Americans with Disabilities Act (ADA) and/or Section 504 of the Rehabilitation Act who require “reasonable accommodation(s)” to complete the course may request those from Office of Student Disability Services. Students requiring such accommodations are required to work with the University’s Office of Student Disability Services rather than engaging in this discussion with individual faculty members or academic departments. If, after reviewing the course syllabus, a student anticipates or should have anticipated a need for accommodation, he or she must submit documentation requesting an accommodation and permitting time for a determination prior to submitting assignments or taking course quizzes or exams. Students may not request retroactive accommodation for needs that were or should have been foreseeable. Students should contact the office as soon as possible in the term for which they are seeking accommodations. Student Disability Services is located in the Carmichael Student Center in Suite 267 on the Kennesaw campus or Building A in Suite 160G on the Marietta campus. Please visit the Student Disability Services (SDS) website for more information, or call the office at 470-578-2666 (Kennesaw campus) or 470-578-9111 (Marietta campus).

KSU Enrollment Management/Course Attendance Policy

Students are solely responsible for managing their enrollment status in a class; nonattendance does not constitute a withdrawal.

Copyright Law

It is the responsibility KSU faculty and students to respect the rights of copyright holders and complying with copyright law. The University System of Georgia recognizes that the exclusive rights of copyright holders are balanced by limitations on those rights under federal copyright law, including the right to make a fair use of copyrighted materials and the right to perform or display works in the course of face-to-face teaching activities.

The University System of Georgia facilitates compliance with copyright law and, where appropriate, the exercise in good faith of full fair use rights by faculty and staff in teaching, research, and service activities. The University System of Georgia ensure compliance with copyright law in the following ways.

- A. The USG informs and educates students, faculty, and staff about copyright law, including the limited exclusive rights of copyright holders as set forth in 17 U.S.C. § 106, the application of the four fair use factors in 17 U.S.C. § 107, and other copyright exceptions.
- B. The USG develops and makes available tools and resources for faculty and staff to assist in determining copyright status and ownership and determining whether use of a work in a specific situation would be a fair use and, therefore, not an infringement under copyright law;
- C. The USG facilitates use of materials currently licensed by the University System of Georgia and provides information on licensing of third-party materials by the University System; and
- D. The USG identifies individuals at the University System and member institutions who can counsel faculty and staff regarding application of copyright law.

Protecting Students' Privacy (FERPA)

Students have certain rights to privacy. These rights are mandated by federal policy. Leaving their work in an unsecured area such as outside your office door (unless agreed upon with each student) means that

the students' names and grades and possibly social security numbers are accessible to everyone. Additionally, research papers can be taken and used by other individuals. It is recommended that you permit students to retrieve their work from your office if you don't return it to them in class. Information should not be made public in any way in which a student's grades, social security number, or other personal information may be identified. Grade information may be shared with members of the KSU community who also have a legitimate educational interest in student success (e.g. academic advisors or members of the Behavioral Response Team). Faculty may be asked to provide early alert information if there is a concern that a student is at risk, academically or otherwise.

As a member of the Kennesaw State University community of scholars, I understand that my actions are not only a reflection on myself, but also a reflection on the University and the larger body of scholars of which it is a part. Acting unethically, no matter how minor the offense, will be detrimental to my academic progress and self-image. It will also adversely affect all students, faculty, staff, the reputation of this University, and the value of the degrees it awards. Whether on campus or online, I understand that it is not only my personal responsibility, but also a duty to the entire KSU community that I act in a manner consistent with the highest level of academic integrity. Therefore, I promise that as a member of the Kennesaw State University community, I will not participate in any form of academic misconduct.

The Student Handbook contains information regarding Rights Pertaining to Student Records, and FERPA specific details are available on the Registrar's website.

Privacy in the Education Process. A key requirement of the formal evaluation process is the protection of individual privacy rights concerning educational grading. The University's online learning system and email system is designed to prevent unauthorized individuals from gaining access to sensitive information or information protected by federal or state law. Consequently, faculty and students are strongly encouraged to only communicate regarding course matters through the University's designated technology learning system.

KSU Sexual Misconduct Policy

In accordance with federal and state law including, Title IX of the Education Amendments of 1972 ("Title IX") and Title VII of the Civil Rights Act of 1964 (Title VII), the University System of Georgia (USG), including Kennesaw State University, prohibits discrimination on the basis of sex in any of its education programs or activities or in employment. The USG is committed to ensuring the highest ethical conduct of the members of its community by promoting a safe learning and working environment. To that end, Kennesaw State University follows USG Board of Regents Policy Manual, Section 6.7. See <https://equity.kennesaw.edu/titleix/title-ix.php>.

Withdrawal from Classes

Students who withdraw from courses before the withdrawal deadline, as specified by the academic calendar will receive a grade of W. A student who officially withdraws from a course by the end of the last day to withdraw without academic penalty will receive a grade of "W" and receive no credit.

A student who officially withdraws from a course after the last day to withdraw without academic penalty and before the last week of classes during the semester will receive a grade of "WF," which will be counted as an "F" in the grade point average calculation.

Students may drop one, some, or all of their classes during the drop/add period. Courses dropped in this manner do not appear on a student's transcript and are not considered as hours attempted for financial aid purposes. No grade is assigned for such courses. However, a student who wishes to withdraw from a course after the last day of the drop period for a term must withdraw through Owl Express. Students with an active registration hold on their record must clear that hold before being able to withdraw from their coursework.

If a student experiences significant personal hardship (e.g., medical or family emergency, prolonged illness), the Dean of Students can approve a hardship withdrawal from all courses in the term for which the student is currently registered. In the case of an approved hardship withdrawal from all courses, the Registrar will assign grades of "W" for those classes. The deadline for final approval of a hardship withdrawal by Dean of Students is the last day of class for which the hardship withdrawal is sought. If the hardship withdrawal process is not complete by the last day of class for which the hardship withdrawal is sought, a student must appeal for a retroactive hardship withdrawal from the Academic Appeals Committee.

Appeals for retroactive hardship withdrawals must be directed to the Academic Standing Committee. Retroactive hardship withdrawals are rarely granted if it has been more than one year since the last day of class for which the withdrawal is sought. Extraordinary justification must be shown. In the case of approved retroactive hardship withdrawals, the Registrar will assign a grade of "W."

If a student is suspended by the Office of Student Conduct following a violation of the University's Code of Conduct not related to academic dishonesty, the Office of Student Conduct may facilitate a University-initiated withdrawal from courses for which a student is registered for the term. The Registrar will assign grades of "W" for those classes.

A student will receive a refund only when the student withdraws from ALL courses for the applicable semester and only by the schedule outlined in the University refund policy.

Students should be aware that a reduction in their hours might result in the loss of full-time student status and thus affect their financial aid, scholarships, athletic and ticket eligibility, University housing accommodations, use of University resources and access to University facilities, immigration status for international students, and Veterans Educational Benefits. Students should contact the appropriate office and their academic advisor with questions about the impact of their withdrawal from a course before initiating a withdrawal. Veterans and dependents of veterans who receive educational benefits must notify the Veterans Education Benefits Area in the Office of the Registrar of any course load reductions.

Military Withdrawals

A student will receive a "WM" symbol for all courses and a full refund of tuition and mandatory fees and a pro rata refund of other fees for military and other service, as defined by BOR Policy Manual, Section 7.3.5.3. To request a military withdrawal, the student must submit a copy of official orders to the Office of the Registrar.

Academic Feedback

Institutional Chief Academic Officers will encourage faculty to clarify for students, at the beginning of each course, the basis on which grades will be determined and to provide timely academic feedback as the course progresses (BOR Academic and Student handbook policy 2.18).

Netiquette: Communication Courtesy

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats.

Inclement Weather Policy

During the course of the year, Kennesaw State University may decide to close campus or operate on a delayed schedule in cases of inclement weather.

The University will announce campus closures and delayed schedules in several ways. The cell phone number on file with the university will automatically receive KSU Alerts, so make sure your information in OwlExpress is accurate at all times. An email will also be sent to your university account.

In addition, announcements will be made by a notice on the Kennesaw State University home page.

COVID-19 INFORMATION

For the most current information on COVID-19 testing, vaccines and protocols, visit the KSU COVID website for more information. <https://www.kennesaw.edu/coronavirus/index.php>

IMPORTANT REMINDERS:

Faculty notification of a positive test result is the responsibility of the individual student as with any other illness. Faculty members may request documentation from students as they would for any other illness-related excused absence.

Students who test positive should be accommodated in respect to making up work missed during a quarantine/isolation period in the same manner they would be accommodated for any other illness. The method or approach to providing content and makeup work for the students is at the faculty member's discretion. Faculty should not conduct contact tracing or notify the class of a positive case.

Students, faculty, and staff should not be asked about their vaccination status,

ISOLATION/QUARANTINE GUIDANCE

If a student reports to you that they have tested positive for COVID-19, please ask them to leave campus/remain away from campus.

for more information on quarantine and isolation protocols. See

<https://studenthealth.kennesaw.edu/images/covid-19-decision-tree.png>

KSU COVID Testing: <https://campusservices.kennesaw.edu/coronavirus/student-health-services.php>