



**CVEG 2400: Statics and Dynamics
Spring 2024**

Course Information

Instructor: Dr. Kai-Wei (Victor) Liu
Section # and CRN: P01, 23934
Office Location: 110D in C.L. Wilson Bldg.
Office Phone: 936-261-1661
Email Address: kaliu@pvamu.edu
Office Hours: M 10:00 AM – 12:50 PM, T,R 08:30 AM – 09:30 AM, R 12:00 PM – 12:50 PM or By Appointment
Mode of Instruction: Face to Face
Course Location: ENCARB 146
Class Days & Times: M,W 08:00 AM – 09:50 AM
Catalog Description: Fundamental concepts; equilibrium of particles and rigid bodies; centroids; moments of inertia; friction; introduction to analysis of structures. Kinematics and Kinetics of particles and of rigid bodies; equations of motion; work and energy; impulse and momentum.
Prerequisites: PHYS 2325 or PHYS 2513
Co-requisites: None
Required Text(s): R.C. Hibbeler, Engineering Mechanics - Statics and Dynamics, Pearson Prentice Hall, 15th Ed., 2022.
Recommended Text(s): None

Course Learning Objectives:

	Upon successful completion of this course, students will be able to:	Student Learning Outcome # Alignment (ABET Criterion 3)	Core Curriculum Objective Alignment
1	Thorough understanding of the theory and applications of engineering mechanics	1	
2	Analyze engineering mechanics problems using the principles of science and mathematics	1	
3	Describe and predict through calculations the conditions of equilibrium of particles, and bodies on application of forces	1	
4	Describe and predict through calculations the behavior of bodies subjected to forces resulting in dynamic motion	1	

Table: Outcome Measures

Course	CVEG Objectives				ABET Criterion 3						
	1 ^a	2 ^b	3	4	1 ^c	2	3	4	5	6	7
CVEG 2400	x	x			x						

^a Have careers in civil engineering or related fields that lead to increasing levels of responsibility and leadership
^b Obtain professional licensure/certifications
^c an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Major Course Requirements

Method of Determining Final Course Grade

Course Grade Requirement		% of Final Grade
1)	3 Mid-Term Exams	60
2)	1 Final Exam	20
3)	Homework Assignment	15
4)	Attendance / Feedback	5
Total:		100

Grading Criteria and Conversion:

A = 90 – 100%

B = 80 – 89%

C = 70 – 79%

D = 60 – 69%

F = 0 – 59%

If a student has stopped attending the course (i.e. “stopped out”) at any point after the first day of class but did not officially withdraw from the course and has missed assignments and exams, including the final exam, and performed below the grade level of a D, a grade of FN (failed-non attendance) will be assigned for the final course grade to ensure compliance with the federal Title IV financial aid regulations. In contrast, if the student has completed all assignments and exams, including the final exam, but performed below the grade level of a D, a grade of F will be assigned for the final course grade.

Course Procedures or Additional Instructor Policies

Suggestions for Success

Attend Lectures. Participate in Discussion; Actively Take Notes; Review Lecture Notes on a Regular Basis; Obtain All Course Materials on the Course Homepage; Complete Assignments; Meet Topic Learning Objectives; Provide Feedback to Instructor

Work

Standard 8.5" X 11" paper should be used for work. Work submitted by students should be done **neatly** and on **one** side of the sheet only. Late work will **NOT** be accepted.

Semester Calendar

DATE	TOPIC	CHAPTER(S)	ACTIVITIES
Week 1	Course Outline General Principle Force Vectors	1 2	HW 1
Week 2	Force Vectors Equilibrium of a Particle	2 3	HW 2
Week 3	Equilibrium of a Particle Force System Resultant	3 4	HW 3
Week 4	Equilibrium of a Rigid Body	5	Exam 1 (Ch. 1-4)
Week 5	Structural Analysis	6	HW 5
Week 6	Center of Gravity and Centroid	9	HW 6
Week 7	Friction	8	HW 7
Week 8	Kinetics of a Particle	12	Exam 2 (Ch 5, 6, 8, 9)
Week 9	Spring Break (No Class)		
Week 10	Kinetics of a Particle: Force and Acceleration	13	HW 8
Week 11	Kinetics of a Particle: Work and Energy	14	HW 9
Week 12	Kinetics of a Particle: Impulse and Momentum	15	Exam 3 (Ch. 12-15)

Week 13	Planar Kinematics of a Rigid Body	16	HW 10
Week 14	Planar Kinematics of a Rigid Body: Force and Acceleration	17	HW 11
Week 15	Planar Kinematics of a Rigid Body: Work and Energy	18	
Week 16	Review		Final Exam (Ch. 15-18)

Note: Changes in this course schedule may be necessary and will be announced to the class by the instructor. The assignments and exams shown are directly related to the Student Learning Outcomes.

Student Support and Success

John B. Coleman Library

The John B. Coleman Library's mission is to enhance the scholarly pursuit of knowledge, to foster intellectual curiosity, and to promote life-long learning and research through our innovative services, resources, and cultural programs, which support the Prairie View A&M University's global mission of teaching, service, and research. It maintains library collections and access both on campus, online, and through local agreements to further the educational goals of students and faculty. Website: <https://www.pvamu.edu/library/>; Phone: 936-261-1500

Academic Advising Services

Academic Advising Services offers students a variety of services that contributes to student success and leads towards graduation. We assist students with understanding university policies and procedures that affect academic progress. We support the early alert program to help students get connected to success early in the semester. We help refer students to the appropriate academic support services when they are unsure of the best resource for their needs. Faculty advisors support some students in their respective colleges. Your faculty advisor can be identified in PantherTracks. Advisors with Academic Advising Services are available to all students. We are located across campus. Find your advisor's location by academic major at www.pvamu.edu/advising. Phone: 936-261-5911

The University Tutoring Center

The University Tutoring Center (UTC) offers free tutoring and academic support to all registered PVAMU students. The mission of the UTC is to help provide a solid academic foundation that enables students to become confident, capable, independent learners. Competent and caring staff and peer tutors guide students in identifying, acquiring, and enhancing the knowledge, skills, and attitudes needed to reach their desired goals. Tutoring and academic support are offered face-to-face in the UTC, in virtual face-to-face sessions (<https://www.pvamu.edu/student-success/sass/university-tutoring-center/>), and through online sessions (<https://www.pvamu.edu/pvplace/>). Other support services available for students include Supplemental Instruction, Study Break, Academic Success Workshops, and Algebra Study Jam. Location: J. B. Coleman Library, Rm. 307; Phone: 936-261-1561; Email: pv tutoring@pvamu.edu; Website: <https://www.pvamu.edu/student-success/sass/university-tutoring-center/>

Writing Center

The Writing Center provides well-trained peer tutors to assist students with writing assignments at any stage of the writing process. Tutors help students with various writing tasks from understanding assignments, brainstorming, drafting, revising, editing, researching, and integrating sources. Students have free access to Grammarly online writing assistance. Grammarly is an automated proofreading and plagiarism detection tool. Students must register for Grammarly by using their student email address. In addition, students have access to face-to-face and virtual tutoring services either asynchronously via email or synchronously via Zoom. Location: J. B. Coleman Library, Rm. 209; Phone: 936-261-3724; Website: <https://www.pvamu.edu/student-success/writing-center/>; Grammarly Registration: <https://www.grammarly.com/enterprise/signup>

Academic Early Alert

Academic Early Alert is a proactive system of communication and collaboration between faculty, academic advisors, and PVAMU students that is designed to support student success by promptly identifying issues and allowing for intervention. Academic Early Alerts help students by providing a central location to schedule advising appointments, view advisor contact information, and request assistance. Students who recognize that they have a problem that is negatively affecting their academic performance or ability to continue school may self-refer an Academic Early Alert. To do so, students will log in to PV Place and click on Academic Early Alert on the left sidebar. Phone: 936-261-5902; Website: <https://www.pvamu.edu/student-success/early-alert/>

Student Counseling Services

The Student Counseling Services unit offers a range of services and programs to assist students in maximizing their potential for success: short-term individual, couples, and group counseling, as well as crisis intervention, outreach, consultation, and referral services. The staff is licensed by the State of Texas and assists students who are dealing with academic skills concerns, situational crises, adjustment problems, and emotional difficulties. Information shared with the staff is treated confidentially and in accordance with Texas State Law. Location: Hobart Taylor, 2nd floor; Phone: 936-261-3564; Website: <https://www.pvamu.edu/healthservices/student-counseling-services/>

Office of Testing Services

Testing Services serves to create opportunities by offering a suite of exams that aid in the students' academic and professional success. Currently, we administer entrance (HESI A2), college readiness (TSI assessment), Prior Learning (CLEP, DSST), and proctored exams. Location: Wilhelmina Delco, 3rd Floor, Rm. 305; Phone: 936-261-3627; Email: aetesting@pvamu.edu; Website: www.pvamu.edu/testing

Office of Diagnostic Testing and Disability Services

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, contact the Office of Disability Services. As a federally-mandated educational support unit, the Office of Disability Services serves as the repository for confidential disability files for faculty, staff, and students. For persons with a disability, the Office develops individualized ADA letters of request for accommodations. Other services include learning style inventories, awareness workshops, accessibility pathways, webinars, computer laboratory with adapted hard and software, adapted furniture, proctoring non-standardized test administrations, ASL interpreters, ALDs, digital recorders, Livescribe, and a comprehensive referral network across campus and the broader community. Location: Hobart Taylor, Rm. 1D128; Phone: 936-261-3583; Website: <https://www.pvamu.edu/disabilityservices/>

Center for Instructional Innovation and Technology Services (CIITS)

Distance Learning, also referred to as Distance Education, is the employment of alternative instructional delivery methods to extend programs and services to persons unable to attend college in the traditional manner. The Center for Instructional Innovation and Technology Services (CIITS) supports student learning through online, hybrid, web-assist, and 2-way video course delivery. For more details and contact information, visit: <https://www.pvamu.edu/dlearning/distance-learning-2-2/students-2/>; Phone: 936-261-3283

Veteran Affairs

Veterans Services works with student veterans, current military and military dependents to support their transition to the college environment and continued persistence to graduation. The Office coordinates and certifies benefits for both the G.I. Bill and the Texas Hazlewood Act. Location: Evans Hall, Rm. 102; Phone: 936-261-3563; Website: <https://www.pvamu.edu/sa/departments/veteranaffairs/>

Office for Student Engagement

The Office for Student Engagement delivers comprehensive programs and services designed to meet the co-curricular needs of students. The Office implements inclusive and accessible programs and services that enhance student development through exposure to and participation in diverse and relevant social, cultural, intellectual, recreational, community service, leadership development, and campus governance. Location: Memorial Student Center, Rm. 221; Phone: 936-261-1340; Website: <https://www.pvamu.edu/studentengagement/>

Career Services

Career Services supports students through professional development, career readiness, and placement and employment assistance. The Office provides one-on-one career coaching, interview preparation, resume and letter writing, and career exploration workshops and seminars. Services are provided for students at the Northwest Houston Center and College of Nursing in the Medical Center twice a month or on a requested basis. Distance Learning students are encouraged to visit the Career Services website for information regarding services provided. Location: Anderson Hall, 2nd floor; Phone: 936-261-3570; Website: <https://www.pvamu.edu/careerservices/>

University Rules and Procedures

Academic Misconduct

Academic dishonesty is defined as any form of cheating or dishonesty that has the effect or intent of interfering with any academic exercise or fair evaluation of a student's performance. The college faculty can provide additional

information, particularly related to a specific course, laboratory, or assignment.

You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with the *University Administrative Guidelines on Academic Integrity*, which can be found on the [Academic Integrity webpage](#). Students who engage in academic misconduct are subject to university disciplinary procedures. As listed in the *University Administrative Guidelines on Academic Integrity*, the University Online Catalog, and the Student Code of Conduct, the following are examples of prohibited conduct. This list is not designed to be all-inclusive or exhaustive. In addition to academic sanctions, any student found to have committed academic misconduct that is also a violation of criminal law may also be subject to disciplinary review and action by the Office of Student Conduct (as outlined in the Student Code of Conduct).

Forms of Academic Dishonesty:

1. **Cheating:** Deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not learned, giving or receiving aid unauthorized by the instructor on assignments or examinations. Examples: unauthorized use of notes for a test; using a "cheat sheet" on a quiz or exam; any alteration made on a graded test or exam which is then resubmitted to the teacher;

Cheating is unprofessional, unethical and is antithetical to our core value of "Excellence in Civil Engineering Education," and WILL NOT BE TOLERATED at any level. To combat this serious problem, the Civil & Environmental Engineering (CEE) Department has adopted the following rules to eradicate cheating.

- If a student cheats on a test/assignment, the student shall receive an **automatic zero** for the test/assignment.
- A student who has been determined to have cheated in a course will IMMEDIATELY relinquish his/her leadership position in any of the department's professional organizations.
- If a student cheats multiple times in a course, the student will receive a **grade of "F"** for the course.
 - **CALCULATORS:** The calculators allowed for **use in exams is restricted to the latest Fundamentals of Engineering (FE) approved calculators**. For the latest National Council of Examiners for Engineering and Surveying (NCEES) Fundamentals of Engineering (FE) approved calculators visit <https://ncees.org/exams/fe-exam/> (look under "**Other Resources**.")

[The Instructor may also provide a list for the course.]

The current **NCEES Calculator Policy** is provided below:

CALCULATOR POLICY

To protect the integrity of its exams, NCEES limits the types of calculators examinees may bring to exam sites. The list of approved calculators is reviewed annually.

The following calculator models are the only ones acceptable for use during the 2024 exams:

- **Casio:** All fx-115 and fx-991 models (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.)

2. **Plagiarism:** Careless or deliberate use of the work or the ideas of another; representation of another's work, words, ideas, or data as your own without permission or appropriate acknowledgment. Examples: copying another's paper or answers, failure to identify information or essays from the internet and submitting or representing it as your own; submitting an assignment which has been partially or wholly done by another and claiming it as yours; not properly acknowledging a source which has been summarized or paraphrased in your work; failure to acknowledge the use of another's words with quotation marks;
3. **Collusion:** When more than one student or person contributes to a piece of work that is submitted as the work of an individual;
4. **Conspiracy:** Agreeing with one or more persons to commit an act of academic/scholastic dishonesty; and
5. **Multiple Submission:** Submission of work from one course to satisfy a requirement in another course without explicit permission. Example: using a paper prepared and graded for credit in one course to fulfill a requirement and receive credit in a different course.

Nonacademic Misconduct

The university respects the rights of instructors to teach and students to learn. Maintenance of these rights requires campus conditions that do not impede their exercise. Campus behavior that interferes with either (1) the instructor's ability to conduct the class, (2) the inability of other students to profit from the instructional program, or (3) campus behavior that interferes with the rights of others will not be tolerated. An individual engaging in such disruptive behavior may be subject to disciplinary action. The Office of Student Conduct will adjudicate such incidents under nonacademic procedures.

Sexual Misconduct

Sexual harassment of students and employees at Prairie View A&M University is unacceptable and will not be tolerated. Any member of the university community violating the university's sexual harassment policy will be subject to disciplinary action. In accordance with the Texas A&M University System guidelines, your instructor is obligated to report to the Office of Title IX Compliance (titleixteam@pvamu.edu) any instance of sexual misconduct involving a student, which includes sexual assault, stalking, dating violence, domestic violence, and sexual harassment, about which the instructor becomes aware during this course through writing, discussion, or personal disclosure. The faculty and staff of PVAMU actively strive to provide a learning, working, and living environment that promotes respect that is free from sexual misconduct, discrimination, and all forms of violence. If students, faculty, or staff would like assistance or have questions, they may contact the Title IX Coordinator at 936-261-2144 or titleixteam@pvamu.edu. More information can be found at www.pvamu.edu/titleix, including confidential resources available on campus.

Protections and Accommodations for Pregnant and Parenting Students

The U.S. Department of Education's Office for Civil Rights (OCR) enforces, among other statutes, Title IX of the Education Amendments of 1972. Title IX protects people from discrimination based on sex, sexual orientation, and gender identity in education programs or activities that receive federal financial assistance. This protection includes those who may be pregnant and parenting. Title IX states: "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance." Students seeking accommodations related to pregnancy or parenting should contact the Office of Title IX for information, resources, and support at titleixteam@pvamu.edu. Additional information and/or support may be provided by the Office of Disability Services or the Office of the Dean of Students.

Non-Discrimination Statement

Prairie View A&M University does not discriminate on the basis of race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, or gender identity in its programs and activities. The University is committed to supporting students and complying with The Texas A&M University System non-discrimination policy. It seeks to establish an environment that is free of bias, discrimination, and harassment. If you experience an incident of discrimination or harassment, we encourage you to report it. If you would like to speak with someone who may be able to afford you privacy or confidentiality, there are individuals who can meet with you. The Director of Equal Opportunity & Diversity has been designated to handle inquiries regarding the non-discrimination policies and can be reached at Harrington Science Building, Suite 109 or by phone at 936-261-1744 or 1792.

Class Attendance Policy (See the University Online Catalog for Full Attendance Policy)

Prairie View A&M University requires regular class attendance. Attending all classes supports the full academic development of each learner, whether classes are taught with the instructor physically present or via distance learning

technologies such as interactive video and/or the internet. Excessive absenteeism, whether excused or unexcused, may result in a student's course grade being reduced or in the assignment of a grade of "F." Absences are accumulated beginning with the first day of class during regular semesters and summer terms. Each faculty member will include the University's attendance policy in each course syllabus.

Student Academic Appeals Process

Authority and responsibility for assigning grades to students rest with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in the University Online Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.

Technical Considerations

Minimum Recommended Hardware and Software:

- Intel PC or Laptop with Windows 10 or later version; Mac with OS High Sierra*
- Smartphone or iPad/Tablet with Wi-Fi*
- High-speed Internet access
- 8 GB Memory
- Hard drive with 320 GB storage space
- 15" monitor, 800x600, color or 16 bit
- Sound card w/speakers
- Microphone and recording software
- Keyboard & mouse
- Most current version of Google Chrome, Safari, or Firefox

Note: Be sure to enable Java & pop-ups in the Web browser preferences

* Smartphones, Google Chrome books, and Android tablets may not be supported. iPads are the only tablets supported.

Participants should have a basic proficiency of the following computer skills:

- Sending and receiving email
- A working knowledge of the Internet
- Microsoft Word (or a program convertible to Word)
- Acrobat PDF Reader
- Windows or Mac OS
- Video conferencing software

Netiquette (online etiquette)

Students are expected to participate in all discussions and virtual classroom chats as directed. Students are to be respectful and courteous to others on discussion boards. Foul or abusive language will not be tolerated. Do not use ALL CAPS for communicating to others AS IT CAN BE INTERPRETED AS YELLING. Avoid slang terms such as "wassup?" and texting abbreviations such as "u" instead of "you." Limit and possibly avoid the use of emoticons. Be cautious when using humor or sarcasm as tone is sometimes lost in an email or discussion post, and the message might be taken seriously or sound offensive.

Video Conferencing Etiquette

When using Zoom, WebEx, or other video conferencing tools, confirm the visible area is tidy, clear of background clutter, inappropriate or offensive posters, and other distractions. Ensure you dress appropriately and avoid using high traffic or noisy areas. Stay muted when you are not speaking and avoid eating/drinking during the session. Before the class session begins, test audio, video, and lighting to alleviate technology issues.

Technical Support

Students should go to <https://mypassword.pvamu.edu/> if they have password issues. The page will provide instructions for resetting passwords and contact information if login issues persist. For other technical questions regarding eCourses, call the Center for Instructional Innovation and Technology Services at 936-261-3283 or email ciits@pvamu.edu.

Communication Expectations and Standards

Emails or discussion postings will receive a response from the instructor, usually in less than 48 hours. Urgent emails should be marked as such. Check regularly for responses.

Discussion Requirement

Online courses often require minimal to no face-to-face meetings. However, conversations about the readings, lectures, materials, and other aspects of the course can occur in a seminar fashion. The use of the discussion board will accomplish this. The instructor will determine the exact use of discussion boards.

It is strongly suggested that students type their discussion postings in a word processing application such as Word and save it to their PC or a removable drive before posting to the discussion board. This is important for two reasons: 1) If for some reason your discussion responses are lost in your online course, you will have another copy; 2) Grammatical errors can be greatly minimized by the use of the spell-and-grammar check functions in word processing applications. Once the post(s) have been typed and corrected in the word processing application, copy and paste to the discussion board.

COVID-19 Campus Safety Measures

To promote public safety and protect students, faculty, and staff during the coronavirus pandemic, PVAMU has adopted policies and practices to limit virus transmission.

- **Self-reporting** – Students who test positive for COVID-19 are required to report their positive test results within 48 hours using the [PVAMU Self-Reporting Form](#). Proof of off-campus and self-administered home test results must be sent to covid-19@pvamu.edu. Proof for self-administered home test is a picture of the test with a photo ID in the same photo.
- **Self-monitoring** – Students should follow public health guidance to help slow the spread of the virus, including being vaccinated. Students who have a fever or exhibit symptoms of COVID-19 should not participate in face-to-face instruction.
- **Face Coverings** – Face coverings (KN-95, surgical mask, etc.) are highly recommended in classrooms, teaching laboratories, common spaces such as lobbies and hallways, public study spaces, libraries, academic resource and support offices, and outdoor spaces where 6 feet of physical distancing is challenging to maintain reliably.
- **Physical Distancing** – Physical distancing should be maintained between students, instructors, and others in course and course-related activities where possible.
- **Personal Illness and Quarantine** – Students required to quarantine are to participate in courses and course-related activities remotely and must not attend face-to-face course activities. Communication with the student's instructor for remote support will take place by the Office of the Assistant Vice President for Academic Engagement and Success. Students under quarantine are expected to participate in courses and complete graded work unless they have symptoms that are too severe to participate in course activities. Students experiencing personal injury or illness that is too severe for the student to attend class may qualify for an excused absence. To receive an excused absence, students must provide appropriate documentation to the Office for Student Conduct, studentconduct@pvamu.edu.
- **Questions** – For answers regarding COVID-19 policies and/or procedures, students should refer to www.pvamu.edu/coronavirus or email covid-19@pvamu.edu.