

Engineering Mechanics: Dynamics

EGM3401

Class Periods: asynchronous delivery

Location: online

Academic Term: Summer C 2021

-

Instructor:

Dr. Dan Dickrell III

djd3@ufl.edu

Office Hours: TBA

Zoom link: (<https://ufl.zoom.us/my/dr.djd3> (Links to an external site.))

Teaching Assistant/Peer Mentor/Supervised Teaching Student:

Please contact through the Canvas website

Isabel Hess

Office hours: TBA

Review sessions (not required):

- Every other week on Thursday
- Zoom through Canvas (ID 911-236-95080)

-

Course Description

Credits: 3; Dynamics of particles and rigid bodies for rectilinear translation, curvilinear motion, rotation and plane motion. Principles of work and energy, impulse and momentum; plus extended coverage of three-dimensional rigid-body dynamics.

Course Pre-Requisites / Co-Requisites

EGM2511 and MAC2313

Course Objectives

This course aims at providing a solid coverage of particle and rigid body dynamics to undergraduate engineering students. The material covered is a foundation for many other courses and is used frequently by most engineers. Students are expected to learn kinematic and kinetic principles, the application of work/energy, and of impulse/momentum principles to dynamical systems.

Materials and Supply Fees

n/a

Relation to (ABET):

ABET (Accreditation Board for Engineering and Technology) is the sole accrediting agency for engineering and technology programs in the United States. This course will achieve the following ABET outcomes by enhancing the student's abilities in the following areas: (1) Apply knowledge of mathematics, science, and engineering [outcome (a), high coverage, 50% of the course grade, assessed through exams and homework assignments]; (2) Identify, formulate, and solve engineering problems [outcome (e), high coverage, 50% of the course grade, assessed through exams and homework assignments]; (3) Understand professional and ethical responsibilities [outcome (f), low coverage, no formal assessment]; and (4) Understand the impact of engineering solutions in a global and societal context [outcome (h), low coverage, no formal assessment]. In addition, the course will also achieve the following program specific outcomes: (M1) Possess knowledge of chemistry and calculus-based physics with depth in at least one of them; (M2) Possess knowledge of advanced mathematics through multivariate calculus and differential equations; (A5) (*partial*) Possess knowledge of orbital mechanics and mathematics.

Recommended Textbooks and Software

DYNAMICS OF PARTICLES AND RIGID BODIES: A SYSTEMATIC APPROACH

ISBN: 9780521187909

Author: Anil V. Rao

Course Schedule

See Canvas Calendar on E-Learning for real-time schedule and updates

Attendance Policy, Class Expectations, and Make-Up Policy

Regular attendance is expected, even for an online class. Binge watching is clearly related to negative (failing) student outcomes.

Late assignments will not be accepted and will be given an automatic zero. Respect online deadlines. Do not submit any assignments within five (5) minutes of the deadline, or run the risk of Canvas not accepting it.

Evaluation of Grades

Homework - 25%

Midterm Project - 25%

Final Project - 30%

Final Individual Evaluation - 10%

Peer-Evaluation - 10%

Grading Policy

A final score of 92% is minimally sufficient for an A, 82% for a B, and 72% for a C.

The lowest homework set will be dropped at the end of the semester to account for sickness, travel or general forgetfulness.

More information on UF grading policy may be found at:
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Students Requiring Accommodations

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.ua.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.ua.ufl.edu/public-results/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Commitment to a Safe and Inclusive Learning Environment

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Graduate Program Coordinator
- Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.ufl.edu
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <https://registrar.ufl.edu/ferpa.html>

Campus Resources:

-

Health and Wellness

U Matter, We Care:

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the [Office of Title IX Compliance](#), located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling.
<https://www.crc.ufl.edu/>.

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.
<https://teachingcenter.ufl.edu/>.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.
<https://writing.ufl.edu/writing-studio/>.

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints: <http://www.distance.ufl.edu/student-complaint-process>.