Computer Aided Graphics and Design
EML 2023 - Sections 224B & 327D
Class Periods: MWF 7th / 9th period
Location: MAE-A 211 / MCCC 1000
Academic Term: Fall 2021

Instructor
Ashok V. Kumar
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Office Hours: MWF, 10:30am-11:30am

Teaching Assistant/Peer Mentor/Supervised Teaching Student:
Please contact through the Canvas website
- TBD

Course Description
Credit hours: 3; Sketching, descriptive geometry, computer graphics, computer aided design and design projects

Course Pre-Requisites / Co-Requisites
None

Course Objectives
The primary objective of the course is to educate students on the main concepts of computer-aided design: solid modeling, assembly design, engineering drawing conventions, dimensioning and tolerance specification. In addition, conceptual design skills such as creative thinking and idea illustration by sketching are taught.

Professional Component (ABET)
The course provides mechanical systems design experience through a final project which provides the students an opportunity to develop the design of a mechanical device starting from the conceptual design all the way to detailed drawings with all dimensions and tolerances specified.

Relation to Program Outcomes (ABET):

Outcome	Coverage*
1) An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	Low
2) an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	High
3) an ability to communicate effectively with a range of audiences	Low
4) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	
5) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	
6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	
7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies	Low

*Coverage is given as high, medium, or low. An empty box indicates outcome not significantly addressed by this course.

Required Textbooks and Software
Text: No required textbook
Software: SolidWorks (Instructions for downloading will be provided in class)

Canvas: https://elearning.ufl.edu/ (E-learning system) for additional reading material.
Online resource: LinkedIn learning - Solidworks 2020 tutorial

Recommended Materials
1. Title: Graphics Technology
    Author: James H. Earle; Publisher: Prentice Hall
    Edition: 2nd edition; ISBN: 9780131476431
2. Title: Geometric Dimensioning and Tolerancing Workbook
    Author: Neumann, A.; Available at Target Copy Center, 1412 W University Ave.

Course Content
        (i)   Introduction to Mechanical Design
        (ii)   3D visualization and sketching: Isometric, oblique and perspective views
        (iii)   6-view orthographic projections
        (iv)   Drawing generation in CAD software
        (v)   Constrained sketching in CAD software
        (vi)   CAD: Solid Modeling, feature based parametric models and design intent
        (vii)   Dimensioning and tolerances
        (viii)   Hole basis and Shaft basis ANSI and ISO Tolerances
        (ix)   Clearances and Fits
        (x)   Threaded fasteners
        (xi)   Geometric Dimensioning and Tolerances (GDT)
        (xii)   Introduction to rapid prototyping

Make-up Policy:
Late assignments will receive 75% credit if submitted within the time allowed on Canvas and will not be graded thereafter. Make up exams will be given only for students with medical reasons for missing the exam. Documentation in the form of a doctor's note must be provided for make-up exams and homework.

Attendance Policy, Class Expectations, and Make-Up Policy
Attendance is mandatory and you are responsible for the knowledge of all scheduling and policy announcements in class. Please respect the rights of other students in the class and do not engage in activities that disturb or distract the class. Excused absences must be consistent with university policies in the undergraduate catalog:
(https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx)
and require appropriate documentation.

Evaluation of Grades

Assignment	Percentage of Final Grade
Homework	50%
Quizzes & Class activity	20%
Exam	15%
Final Project	15%
Total	100%

Grading Policy

Percent	Grade	Grade Points
> 93	A	4.00
< 93 - 90	A-	3.67
< 90 - 87	B+	3.33
< 87- 84	B	3.00
< 84 - 80	B-	2.67
< 80 - 77	C+	2.33
< 77 - 74	C	2.00
< 74 - 70	C-	1.67

< 70 - 67	D+	1.33
< 67 - 64	D	1.00
< 64 - 60	D-	0.67
< 60	E	0.00

More information on UF grading policy may be found at:
http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades

Students Requiring Accommodations
Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting https://disability.ufl.edu/students/get-started/. It is important for students to share their accommodation letter with their instructor and discuss their access needs, 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.aa.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.aa.ufl.edu/public-results/.

In-Class Recording
Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

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 Conduct Code (https://sccr.dso.ufl.edu/process/student-conduct-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. 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
• Jennifer Nappo, Director of Human Resources, 352-392-0904, jpennacc@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: https://counseling.ufl.edu, 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/.

COVID-19
• You are expected to wear approved face coverings at all times during class and within buildings even if you are vaccinated.
• If you are sick, stay home and self-quarantine. Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus.

- If you are withheld from campus by the Department of Health through Screen, Test & Protect, you are not permitted to use any on campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.
- UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed to someone who has tested positive or have tested positive yourself. Visit the UF Health Screen, Test & Protect website for more information.
- Please continue to follow healthy habits, including best practices like frequent hand washing. Following these practices is our responsibility as Gators.

Academic Resources

E-learning technical suppor*t*, 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://career.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://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/;https://care.dso.ufl.edu.

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