Computer Aided Graphics and Design (SolidWorks)

EML 2023
MWF 2nd Period
MAE-B 0211
Fall 2022

Instructor:
Dr. Andrés Rubiano
ssjandres@ufl.edu
Office Hours: Monday and Wednesday 7:30-8:30 AM

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

- Nicholas Sardinia - nicholassardinia@ufl.edu - https://ufl.zoom.us/j/2152276571
- Andrew Gonzalez – andrewgonzalez@ufl.edu -

Course Description
Sketching, descriptive geometry, computer graphics, computer aided drafting and design projects. 3 Credits.

Course Pre-Requisites / Co-Requisites
None

Course Structure:

Before EVERY class meeting, you are to:

- study the one 8-12-minute lecture main video (1-hour worth of lecture content).
- complete the assigned homework while recording your work with OBS.

Students are to attend all classes. Attendance will be taken, and participation will be noted.

Class meeting times will be used to:

- work on a problem related to the topic covered in the lecture, while recording your work.
- go over supplementary information about SolidWorks, OBS, and templates configuration.
- answer specific questions about lecture videos and classwork.
- work on new SolidWorks exercises.
- take quizzes.

Course Assignments

Homework:

At least a day before every lecture day, you must watch the condensed lecture video, replicate the work shown in it, and record your work with OBS. This work can be randomly requested for grading.

If any of the in-class exercises is not completed during the lecture time, the exercise should be started over at home, and recorded from start to end. This work can be randomly requested for grading.

When a homework exercise is assigned, students should work on it at home, and once again, record their work.

Recorded solutions to homework and in-class exercises will be uploaded each week after the quiz.

Quizzes:

There will be at least one quiz every week, during the Friday lecture time that you can take from home (we will not meet during Friday's class time); quiz time will appear limited and quiz problems, challenging, if class exercises and homework assignments are not completed.

Quiz submissions will be the part, part drawing, or assembly file that the quiz asks for, or fill in the blank questions with information found in your SolidWorks file. Additionally, the recording of your work in SolidWorks will be uploaded to a separate "*Assignment*" on Canvas right after **every** quiz.

Project:

Groups of three will work together to submit their project on Monday, November 28th, 2022. Project updates will be requested randomly and without previous notice between the date of posting and the final submission date. **Important: work on your project as the topics covered in class allow you to make progress.**

Exam: Two-part exam, December 5th and December 7th. These will take place during class time.

Grading: Quizzes (40%), Exam (30%), Project (30%).

Course Content and Schedule:

Date		Day	Content	Lecture	Lecture & Examples	Homework
August	24	W	Isometric and Orthogonal Views in SolidWorks	1	https://youtu.be/Y4gsOdYpiVQ	
August	26	F	SolidWorks Interface and Basics/Quiz	2	https://youtu.be/bchu5JNc3YA	
August	29	M	Extrusion Feature and Sketches	3	https://youtu.be/OwZMn3kqU2s	
August	31	W	Reference Geometry	4	https://youtu.be/rcEnT14cZEg	
September	2	F	Quiz			
September	5	M	Holiday			
September	7	W	Relations, Trimming, and Offsetting	5	https://youtu.be/j6r2bLoxhS0	
September	9	F	Quiz			
September	12	M	Mirroring Sketch and Features	6	https://youtu.be/ofj8KCvjTl8	
September	14	W	Revolve and Arrays	7	https://youtu.be/A-iWmxzJrlQ	
September	16	F	Quiz			
September	19	M	2D and 3D Sweeps	8	https://youtu.be/WZjkVcYyOoA	
September	21	W	Helix Sweep	9	https://youtu.be/gUzh9vTvwEQ	
September	23	F	Quiz			
September	26	M	Loft and Shell	10	https://youtu.be/rzhLnY7JbRw	
September	28	W	Import Pictures, Autotrace, and Combine Features	11	https://youtu.be/XCdU01M7t-k	
September	30	F	Quiz			
October	3	M	Equation Driven Curve & Parametric Equations	12	https://youtu.be/3ToFwSf916k	

October	5	W	Toolbox Add-In for Machine Components	13	https://youtu.be/d0Cl7tyYLz8	
October	7	F	Quiz			
October	10	M	Drawings Basics in SolidWorks	14	https://youtu.be/9qJS2hRL1Sg	
October	12	W	Auxiliary and Section Views	15	https://youtu.be/wskNxGZGqc4	
October	14	F	Quiz			
October	17	M	MOST Helper Views for Part Drawings	16	https://youtu.be/tAWlPVKcqoI	
October	19	W	Assemblies, Mates, and Exploded Views	17	https://youtu.be/iYnt8jxwlIM	
October	21	F	Quiz			
October	24	M	Editing Assemblies, Drawings, Motion and BOM	18	https://youtu.be/kUnMhjPQ2H0	
October	26	W	Fasteners and Threaded Holes	19	https://youtu.be/Dvc8k7VnnWw	
October	28	F				
October	31	M	Animation	20	https://youtu.be/QgQ40z_ZI4k	
November	2	W	Advance Mates - Gears	21	https://youtu.be/7szznDaQgSk	
November	4	F	Quiz			
November	7	M	Advance Mates - Screws	22	https://youtu.be/wCsk2t3momA	
November	9	W	Springs Deformation	23	https://youtu.be/hiXWxmqTiAU	
November	11	F	Holiday			
November	14	M	Advance Mates - Cams	24	https://youtu.be/jbcH0OGs0uM	
November	16	W	Rendering	25		
November	18	F	Quiz			
November	21	M	Motion Analysis	26		
November	23	W	Thanksgiving Break			
November	25	F	Thanksgiving Break			
November	28	M	Project Submission			
November	30	W	FEA in SolidWorks			
December	2	F	Practice Exam			
December	5	M	Exam Part 1			
December	7	W	Exam Part 2			

Required Textbooks and Software
SolidWorks 2022

Attendance Policy, Class Expectations, and Make-Up Policy
State whether attendance is required and if so, how will it be monitored? What are the penalties for absence, tardiness, cell phone policy, laptop policy, etc. What are the arrangements for missed homework, missed quizzes, and missed exams?
This statement is required:
Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. Click here to read the university attendance policies:
https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

Other Course Information

Grading Scale: The final grade will be calculated by the following table.

Table 1. Grading Table. *%GE = Percent Grade Earned.*

Percentage Range			Grade Point
93.33% GE	100.00	A	4.00
90.00% GE	93.33	A-	3.67
86.67% GE	90.00	B+	3.33
83.33% GE	86.67	B	3.00
80.00% GE	83.33	B-	2.67
76.67% GE	80.00	C+	2.33
73.33% GE	76.67	C	2.00
70.00% GE	73.33	C-	1.67
66.67% GE	70.00	D+	1.33
63.33% GE	66.67	D	1.00
60.00% GE	63.33	D-	0.67
00.00% GE	60.00	E	0.00

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	High
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	High
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	Low
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	Low
6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	Medium
7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies	Medium

Grade Corrections:

Corrections of grades should be submitted to instructor within 5 business days of the grade posting in writing with a concise statement of why you believe there has been an error. Note that the instructor has the final determination in the grade assigned. If a grade change is determined, it may result in a lower or higher grade.

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 Honor 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. 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
• 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/.

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 Connections 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*: https://distance.ufl.edu/state-authorization-status/#student-complaint*.