Master Course Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: https://catalog.uvu.edu/

Semester: Spring
Year: 2025
Course Prefix: EGDT
Course and Section #: 1071-001
Course Title: 3 Dimensional Modeling - SolidWorks
Credits: 3

Course Description

Teaches basic 3D computer modeling, which emphasizes the development of 3D machine parts, assemblies, and drawings in a constraint-based modeling environment using SolidWorks. Emphasizes the feature-based design process, which simulates actual manufacturing processes with 2D sketching tools and with 3D modeling tools including extrusions, revolutions, sweeps, lofts, coils, shells, placed features, patterns, and many others. Also teaches creation of basic multi-part assemblies, constraint-driven assembly animation, and generation of detailed production drawings.

Course Attributes

This course has the following attributes:

☐ General Education Requirements
☐ Global/Intercultural Graduation Requirements
☐ Writing Enriched Graduation Requirements
☒ Discipline Core Requirements in Program
☐ Elective Core Requirements in Program
☒ Open Elective

Other: *Click here to enter text.*

Instructor Information

Instructor Name: Jayden Fullmer

Student Learning Outcomes

1. Successfully model and edit basic 3D machine parts using sketching tools and modeling functions including extrude, revolve, hole, shell, rib, loft, sweep, coil, fillet, chamfer, draft, emboss, pattern, and mirror
2. Understand and apply geometric and dimensional constraints to part models
3. Design an optimal feature creation order for any basic machine part
4. Create basic assemblies made from multiple parts
5. Understand and apply mate, angle, tangent, and insert assembly constraints, and transition constraints to assemblies
6. Create custom drawing borders and title blocks
7. Generate correctly scaled base, projected, auxiliary, isometric, section, detail, breakout, and broken views of parts in drawings
8. Create appropriate drawing dimensions, annotations, notes, and symbols

9. Correctly format line weight, line type, terminator, center mark, and dimension style standards for any drawing

Course Materials and Texts

Course uses online resources and references accessed through SolidWorks software or my.solidworks.com website

Course Requirements

Course Assignments, Assessments, and Grading Policy

Assignments:

This course has two types of assignments. Low stakes, low point, applications are available for you to use the learned SolidWorks tools after the demonstration instruction. If you get stuck you can watch a video on how it was created. IMPORTANT, Be sure to try to complete the application first without the video. This will help your mind retrieve the information from the demonstration.

The other assignment is a weekly assignment you will compete after watching the demonstration and completing the application problems. These are real world objects you might find yourself creating one day in industry.

Discussions:

SolidWorks allows us to create in a digital environment what can be in the physical environment. We will have discussions in this course when you identify features around you that remind you of the tool we are learning about that week. You will take a picture of it. Bring it into SolidWorks and sketch how you would start creating that feature. You will then add this photo with a sketch to your discussion post explaining how it exemplifies what we are learning that week.

Discussions will be opportunities to explore topics together. Posts to the discussion should add significantly to the conversation and support your point of view. Comments that do not add significantly to a discussion will receive no credit. It is okay to disagree in a discussion. In fact, much learning happens when we disagree. However, we need to be respectful and keep our online classroom a safe place to learn.

Due dates for discussions correspond with the initial postdate which is usually a Wednesday. Follow up comments are due by Sunday. Follow up posts are expected to be after the due date and are not marked late. Discussions conclude by the Sunday following the due date. After this, posts will be marked late.

In online courses, students appreciate the opportunity to work ahead on assignments. In this course, students may work ahead on all but the discussions. Online discussions are more robust when they are an actual discussion, not just a public post. It helps us have a better discussion when we are all posting during the same time period.

Assessments:

There are 2 course exams and a CWSA certification scheduled in the course. These exams will be similar to your weekly assignment. You will be given a dimensioned object on a title block. These exams will assess your acquired knowledge from the course to complete the part and dimension it on a drawing. These exams will be timed and you will need to upload an edrawings part within the time frame. The course has been structured to give you CSWA practice problems each week to prepare you to take this certification. The CSWA is administered by SolidWorks. You will have two chances to take

this certification exam in this course. Your higher score will be used to calculate the final exam score for the course.

Your final assessment will be a group project you will complete during the semester and submit the week of finals.

Grading Scale:
The following grading standards will be used in this class:

Grade	Percent
A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
E	0-59

Late Work Statement:
The best way to be successful in this course is to submit all assignments by their due date. All assignments are available from the beginning of the term and you are allowed to work ahead. Discussion participation must occur as per the due dates.

In the event that you will not be able to meet a due date, contact your instructor as soon as possible. All late work will incur a 10% late penalty for every day late. Example, if an assignment is 5 days late it will incur a 50% late penalty when it is turned in.

Required or Recommended Reading Assignments
NA

General Description of the Subject Matter of Each Lecture or Discussion
Module 1 - Orientation/Sketching Tools and User Interface
Module 2 - Sketches: Equations - Features: Extruded Boss/Base, Extruded Cut, Chamfer, Fillet, Material, Mass Properties
Module 3 - Title Block - Drawings: Sheet Format, Annotations, ASME Y14.5-2018
Module 4 - Fasteners, Threads - Features: Hole Wizard, Thread, Annotations: Cosmetic Thread
Module 5 - 3D Printing - Drawings: Dimension Types, Tolerances - Features: Reference Geometry
Module 6 - Gears - Drawings: Tables, Online Test 1
Module 7 - Features: Revolve Boss, Revolve Cut
Module 8 - Features: Swept Boss/Base, Lofted Boss/Base, Shell
Module 9 - Features: Rib, Helix and Spiral Curve - Surfaces: Revolved Surface, Online Test 2
Module 10 - Assembly: Mate - Standard, Exploded View
Module 11 - Assembly: Mate - Advanced / Mechanical, Design Library: Toolbox, MotionManager: Animation
Module 12 - Task Pane: Appearances, Decals, Feature Creation From: Surface/Face/Plane

Module 13 - Collaborative Design, CSWA Certified SolidWorks Associate Exam
Module 14 - Sketch: 3D Sketch, Feature: Composite Curve
Module 15 - Geometric Dimensioning and Tolerancing (GD&T)

Required Course Syllabus Statements

Generative AI
NA

Using Remote Testing Software
☒ This course does not use remote testing software.

☐ This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

Required University Syllabus Statements

Accommodations/Students with Disabilities
Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU Accessibility Services at accessibilityservices@uvu.edu or 801-863-8747.

Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at DHHservices@uvu.edu

DHH is located on the Orem Campus in BA 112.

Academic Integrity
At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their rights and responsibilities. In each course, they are responsible for knowing the requirements and restrictions regarding research and

writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in UVU Policy 541: *Student Code of Conduct*.

Equity and Title IX

Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – TitleIX@uvu.edu – 800 W University Pkwy, Orem, 84058, Suite BA 203.

Religious Accommodation

UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.

To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at accessibilityservices@uvu.edu. If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a specially dedicated space for meditation, prayer, reflection, or other forms of religious expression.