

JAMESTOWN COMMUNITY COLLEGE
State University of New York

INSTITUTIONAL COURSE SYLLABUS

Course Title: Advanced Solid Modeling

Course Abbreviation and Number: MCT 2380

Credit Hours: 3

Course Type: Lecture

Course Description: Students will extend their knowledge by using the parametric solid modeler in industrial design application. Skills are developed to support applications in the area of feature patterns, molded and cast parts, sheet metal applications, lofting, and sweeps. Assembly modeling and editing is covered as well as detailing of parts and assemblies. Links to other applications such as publication bill of materials, CAM, analysis package, and other CAD systems are also featured.

Prerequisite: MCT 1380.

Student Learning Outcomes:

Students who demonstrate understanding can:

1. Construct a complex sheet metal model with fully constrained and predictable parametric features.
 2. Understand the difference between solid models and surfaces by constructing CAD models of both types.
 3. Demonstrate knowledge of advanced solid model features such as sweeps, lofts, and the application of guide curves through the completion of various modeling exercises.
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Topics Covered:

- Review of SolidWorks topics from MCT 1380.
 - User-defined Planes
 - 3D curves and composite curves.
 - Non-prismatic shapes using Lofts.
 - Non-prismatic shapes using Sweeps.
 - Advanced filleting.
 - Assemblies and in-context assembly modeling.
 - Interference detection, collision detection, and simple dynamic motion simulations.
 - Area and volume properties of sketches, parts, and assemblies.
 - Advanced detailing of parts and assemblies, including exploded assemblies.
 - Integrating surfaces with solid models.
 - Mold tooling: Core and Cavity overview
 - Data translation to and from other CAD, CAM, and analysis programs.
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Information for Students

- Expectations of Students
 - [Civility Statement](#)
 - [Student Responsibility Statement](#)
 - [Academic Integrity Statement](#)
 - [Accessibility Services](#)
Students who require accommodations to complete the requirements and expectations of this course because of a disability must make their accommodation requests to the Accessibility Services Coordinator.
 - [Get Help: JCC & Community Resources](#)
 - [Emergency Closing Procedures](#)
 - Course grade is determined by the instructor based on a combination of factors, including but not limited to, homework, quizzes, exams, projects, and participation. Final course grade can be translated into a grade point value according to the following:

A=4.0	B+=3.5	B=3	C+=2.5	C=2	D+=1.5	D=1	F=0
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 - Veterans and active duty military personnel with special circumstances (e.g., upcoming deployments, drill requirements, VA appointments) are welcome and encouraged to communicate these to the instructor.
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Effective Date: Fall 2021