



STARK STATE COLLEGE

GENERAL SYLLABUS

Course Information

Course Name: Solid Edge
Course Number: ARL241

Required Materials

Textbook(s): Solid Edge Handbook Ariel Corp.
Required Readings: None
Additional Materials: Scientific Calculator, Laptops, Note Pads, Writing Utensils, Web Links, Handouts and related items as provided in class.

Course Outline/Calendar

The date of coverage and order of coverage may be modified based on the faculty member and events beyond the control of faculty members that interfere with class times and teaching.

Week	Chapter/Topic/Lab
1: Introduction to the Solid Edge Interface	<ul style="list-style-type: none"> ○ Navigating the user interface and setting up the environment. ○ Understanding Solid Edge file types (Part, Assembly, Draft). ○ Controlling and manipulating views.
2: 2D Sketching Basics	<ul style="list-style-type: none"> ○ Creating and editing sketches. ○ Using sketching commands: lines, circles, and rectangles. ○ Working with geometric and dimensional constraints.
3: Ordered Part Modeling	<ul style="list-style-type: none"> ○ Creating base features like extrusions and revolves. ○ Applying feature-based modifications such as rounds, chamfers, and holes. ○ Using reference planes and coordinate systems.
4: Advanced Ordered Part Modeling	<ul style="list-style-type: none"> ○ Creating patterned features and mirroring geometry. ○ Exploring more complex profile-based features like lofts and sweeps. ○ Working with variables to control part dimensions.
5: Introduction to Synchronous Modeling	<ul style="list-style-type: none"> ○ Understanding the core concepts of synchronous technology versus the ordered method. ○ Creating synchronous sketches and base features.
6: Synchronous Direct Editing	<ul style="list-style-type: none"> ○ Modifying geometry directly using steering wheel and intelligent tools. ○ Managing design intent using "Live Rules" and 3D dimensions.
7: Advanced Synchronous Features	<ul style="list-style-type: none"> ○ Performing complex edits and reusing synchronous geometry. ○ Working with imported data from other CAD systems.

Week	Chapter/Topic/Lab
8: Project 1: Combined Modeling	<ul style="list-style-type: none"> ○ Completing a project that incorporates both ordered and synchronous modeling techniques. ○ Focusing on an integrated modeling workflow.
9: Basic Assembly Modeling	<ul style="list-style-type: none"> ○ Placing and positioning parts in an assembly document. ○ Applying assembly relationships, such as mates and alignments. ○ Working with parts "in-place" within the assembly.
10: Advanced Assemblies	<ul style="list-style-type: none"> ○ Creating and managing exploded views. ○ Defining motion and creating assembly configurations. ○ Generating a Bill of Materials (BOM).
11: 2D Production Drawings	<ul style="list-style-type: none"> ○ Creating drawing views of parts and assemblies. ○ Applying dimensions and annotations to a draft document. ○ Managing sheets and drawing templates.
12: Project 2: Detailed Assembly	<ul style="list-style-type: none"> ○ Developing a complete assembly with an exploded view and detailed drawings. ○ Creating manufacturing-ready documentation.
13: Sheet Metal Design	<ul style="list-style-type: none"> ○ Using sheet metal-specific features like tabs, flanges, and bends. ○ Working with flat patterns and corner conditions. ○ Applying sheet metal design principles for manufacturing.
14: Surface Modeling	<ul style="list-style-type: none"> ○ Understanding the basics of surface creation and editing. ○ Working with freeform shapes using surfaces.
15: Introduction to Simulation and CAM	<ul style="list-style-type: none"> ○ Exploring basic finite element analysis (FEA) to test part stress and performance. ○ Introduction to Computer-Aided Manufacturing (CAM) within Solid Edge.
16: Final Exam	<ul style="list-style-type: none"> ○ Applying skills from all areas to complete a complex design project.