1/21/2025 DATE
☑ REQUIRED COURSE
☑ ELECTIVE COURSE

TEC DIVISION
☐ NEW COURSE
☐ REVISION

Lake Land College

Course Information Form

COURSE NUMBER:	CAD-060		TITLE: *(30 Characters Max)*	3D Solid Modeling							
SEM CR HRS:	3	Lecture:	2	Lab:	2				ECH:	4	
Course Level:	☐ Gen Ed/IAI ☐ Baccalaureate/Non-IAI ☑ Career/Technical ☐ Dev Ed/Not in Degree Audit			Clinical Practicum:	0	Work-based Learning:	0	WBL ECH:	0		
COURSE PCS #	12.151302		IAI Code	N/A				Contact Hours (Minutes/Week)			
Repeatable (Y/N):	N	Pass/Fail (Y/N):	N	Variable Credit (Y/N):	N	Min:		Max:		16 Wks	200	8 Wks	400
Prerequisites:	None										
Corequisites:	None										
Catalog Description: (40 Word Limit)	This course is an in depth study of three-dimensional solid modeling using different computer aided design programs. The student will learn to create, view, render and plot 3D models.										

List the Major Course Segments (Units)	Contact Lecture Hours	Contact Lab Hours	Clinical Practicum	Work-based Learning
Introduction and user interface	2	2		
Sketching	2	2		
Profiles	2	2		
Extruding profiles	2	2		
Modifying solids	2	2		
Adding features	2	2		
Surface features	2	2		
Drawing views	2	2		
Section views	2	2		
Assembly drawing	2	2		
Assembly layout	2	2		
Animation	2	2		
Rendering	2	2		
Printing and plotting	2	2		
Conversion	2	2		
TOTAL	30	30	0	0

EVALUATION							
QUIZZES	☑	EXAMS	☑	ORAL PRES	☐	PAPERS	☐
LAB WORK	☑	PROJECTS	☑	COMP FINAL	☐	OTHER	☐

COURSE MATERIALS		
TITLE:	Autodesk Inventor 2014 & Inventor LT 2014 Essentials	
AUTHOR:	Tom Tremblay	
PUBLISHER:	Sybex / Wiley	
VOLUME/EDITION/URL:		
COPYRIGHT DATE:	2013	

MAJOR COURSE SEGMENT	HOURS	LEARNING OUTCOMES
		The student will be able to:
Introduction and user interface	4	1. Use the software interface and get an overview of solid modeling
Sketching	4	1. Create accurate sketches and define sketch planes.
Profiles	4	1. Define and constrain a profile.
Extruding profiles	4	1. Extrude profiles into 3D solids.
Modifying solids	4	1. Use modify commands on 3D solids.
Adding features	4	1. Add and modify features such as holes, slots and pockets
Surface features	4	1. Create swept and revolved surface features.
Drawing views	4	1. Layout drawing views for plotting.
Section views	4	1. Make various types of section and cut away views.
Assembly drawing	4	1. Assemble solids into an assembly.

Assembly layout	4	1. Label assemblies and create parts lists.
Animation	4	1. Animate mechanical assemblies.
Rendering	4	1. Create a solid model from a parametric solid model.
Printing and plotting	4	1. Create hardcopy outputs of solid models.
Conversion	4	1. Convert and import solid model files from one CAD system to another.
	60	

Outcomes*	At the successful completion of this course, students will be able to:
Course Outcome 1	Create a solid model using extruded and revolved features.
Course Outcome 2	Add detail features to solid part models.
Course Outcome 3	Project orthographic views from solid model parts.
Course Outcome 4	Assemble, constrain and animate 3D parts into a realistic assembly.
Course Outcome 5	Create exploded drawings of 3D assemblies.
Primary Laker Learning Competency	Critical Thinking: Students connect knowledge from various disciplines to formulate logical conclusions and judgments.
Secondary Laker Learning Competency	Quantitative Literacy: Students utilize mathematical knowledge to test claims and hypotheses, perform data analysis and recognize patterns in real-life situations.

**Course and program outcomes will be used in the software for outcomes assessment and should include at least 1 primary and 1 secondary Laker Learning Competency. Limit to 3-5.*