

**Course discipline/number/title: CAD 1039: SolidWorks****A. CATALOG DESCRIPTION**

1. **Credits:** 4
2. **Hours/Week:** 1 lecture, 6 lab
3. **Prerequisites (Course discipline/number):** None
4. **Other requirements:** RCTC CAD Major or Instructor's permission, Students must receive a grade of C or better in all CAD courses.
5. **MnTC Goals (if any):** NA

**B. COURSE DESCRIPTION:** This course offers students the understanding of 3D parametric solid modeling using SolidWorks. It also addresses the concepts of parametric design, design intent, and the necessary commands to carry out these functions. Items covered will be construction of 3D solid modeling parts, assemblies, and creating 2D automated drawings. Learning by example: students will design real world products with SolidWorks. This course will be taught using the latest release of SolidWorks. Students must receive a grade of C or better in all CAD courses.

**C. DATE LAST REVISED (Month, year):** May, 2022

**D. OUTLINE OF MAJOR CONTENT AREAS:**

1. Parametric modeling concepts
2. Sketching
3. Basic Part Modeling
4. Sketch planes
5. Choosing the best profile
6. Revolving features
7. Patterning
8. Shelling and Rib creation
9. Editing Parts
10. Configurations
11. Design Tables and Equations
12. Top Down and Bottom Up Assembly Modeling
13. Creating Detail Drawings

**E. LEARNING OUTCOMES (GENERAL):** The student will be able to:

1. Draw defined sketches.
2. Understand sketch geometry.
3. Create and modify solid features (parts).
4. Create 3D assemblies.
5. Use geometric relationships correctly.
6. Plot 3D models.
7. Create tables and equations.
8. Create advanced modeling shapes.
9. Create Bill of Materials.
10. Create detail drawing.
11. Complete the SolidWorks CSWA exam.

**F. LEARNING OUTCOMES (MNTC):** NA**G. METHODS FOR EVALUATION OF STUDENT LEARNING:** Methods may include but not limited to:

1. Checking electronic drawing files
2. Skill proficiency quizzes
3. Written tests

- H. **RCTC CORE OUTCOME(S).** This course contributes to meeting the following RCTC Core Outcome(s):  
**Personal and Professional Accountability.** Students will take responsibility as active learners for achieving their educational and personal goals.
- I. **SPECIAL INFORMATION (if any):**  
Tuition differential