

1. *Course number and name*  
**ENGR 290: Introduction to SolidWorks**
2. *Credits and contact hours*  
 1 credit hours; One 90-minute lecture sessions/week for 8 weeks.
3. *Instructor's or course coordinator's name*  
 Instructor: Susan Bowley, Lecturer in Mechanical Engineering  
 Course coordinator: Kwok Siong Teh, Professor of Mechanical Engineering
4. *Text book, title, author, and year*
  - David C. Planchard, Engineering Design with SolidWorks 2016 and Video Instruction, SDC Publications, 2016
  - David C. Planchard, Official Guide to Certified SolidWorks Associate Exams: CSWA, CSDA, CSWSA-FEA 2012-2015, SDC Publications, 2016
  - a. *other supplemental materials*  
 (none)
5. *Specific course information*
  - a. *brief description of the content of the course (catalog description)*  
 This course extends the concepts learned in other graphics courses to engineering drawings and design. Topics include the development of visualization skills, orthographic projections, mechanical dimensioning and tolerancing practices, 3-D CAD and an introduction to engineering design including a group project. The use of 3-D CAD software and application to 3-D printing is an integral part of this course.
  - b. *prerequisites or co-requisites*  
 Engineering students in sophomore year or later.
  - c. *indicate whether a required, elective, or selected elective course in the program*  
 Lower Division Engineering Elective for Mechanical Engineering
6. *Specific goals for the course*
  - a. *specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic.*
    - Students will demonstrate clear and effective communication of engineering/scientific data in a graphical form.
    - Students will design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
  - b. *explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.*  
 Course addresses ABET Student Outcome(s): a, c, e, g, i, k.

7. *Brief list of topics to be covered*

- Overview of SolidWorks and the User Interface
- Fundamentals of Part Modeling
- Fundamentals of Assembly Modeling
- Fundamentals of Drawing
- Extrude and Revolve Features
- Swept, Lofted and Additional Features
- Top-Down Assembly Modeling and Sheet Metal
- Intelligent Modeling Techniques
- Additive Manufacturing – 3D Printing
- Preparation for the CSWA Certification Exam