1. **Course number and name**  
   ENGR 290: Introduction to SolidWorks – Level I

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  

   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