



# SEATTLE COLLEGES

Central · North · South · SVI

## TDR200 - Introduction To Solidworks

Document Type: District Master Course Outline

Proposal Type: Revision

Requester(s): Stephen H Simmons

College: North

Origination Approved: 12/15/2014 - 11:45 AM

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### BASIC INFORMATION

**Requester(s):** Stephen H Simmons

**College:** North Seattle College

**Division/Dept:** Business, Engineering & IT

**Dean:** Terry J Cox

### COURSE INFORMATION

**Proposed Course Number:**

Prefix: **TDR**

Number: **200**

Request a new Prefix

This will be a common course

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**Full Title:** Introduction To Solidworks

**Abbreviated Title:** Intro To Solid Works

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**Catalog Course Description:**

Intro to basic parametric solid modeling practices using SolidWorks or comparable programs to industry standards. Learn engineering graphics in the 3D environment including drawing commands, efficiencies of PSM vs. the 2D environment. CAD or 3D experience recommended.

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**Course Length:** (blank)

Request an Exception

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**Topical Outline:**

- I. Introduction to Equipment
- II. Introduction to Software
  - A. Parametric Solid Modeling(PSM) programs
  - B. The PSM program - an overview
- III. Introduction to PSM Basics
  - A. Understanding PSM
  - B. Familiarization with the SolidWorks or CATIA Interface
  - C. Element Modifications
  - D. Modeling
  - E. Introducing other applications
  - F. Annotations
  - G. Details
  - H. Plotting
- IV. Introduction of Modeling Projects

**COURSE CODING**

**Funding Source:** 1.....State

**Institutional Intent:** 21.....Vocational Preparatory

This Course is a requirement for the following program(s):

**Program Title**

CERT ADV DES MANUF (798F)

My Course Proposal is a requirement for a program not on this list

**Will this course transfer to a 4-year university?** **No**

**Is this course designed for Limited English Proficiency?** **No**

**Is this course designed for Academic Disadvantaged?** **No**

**Does this course have a Workplace Training component?** **No**

**CIP Code:** 15.1301  Request Specific CIP Code

**EPC Code:** 798  Request Specific EPC Code

**Credits:**

**Will this course be offered as Variable Credit?** No  
**No**

**List Course Contact Hours**

Lecture (11 Contact Hours : 1 Credit)	55
Lab (22 Contact Hours : 1 Credit)	0
Clinical Work (33 Contact Hours : 1 Credit)	0
Other (55 Contact Hours : 1 Credit)	0
Total Contact Hours	55
Total Credits	5

**COLLEGE SUPPLEMENTAL**

**Proposed Quarter of Implementation:**  Request Provisional Exception

**Class Capacity:** 28

**Note:** The following questions are being asked in order to fulfill [Seattle Colleges District VI and AFT Seattle, Local 1789 A](#)

Have you discussed the class cap for the course with your unit administrator and with other unit faculty that will be teachi

Yes, discussion has been held.

Is the class cap number that you have indicated mutually agreed upon by unit faculty and unit administrators?

Yes, agreement has been reached.

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**Modes of Delivery:** (Check all that apply)

- Fully On Campus  Fully Online  Hybrid  Correspondence  Credit by Exam  
 Seminar  Visual Media  Other Explanation:

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**Class Schedule Description:**

Intro to Basic Parametric Solid Modeling practices using SolidWorks or comparable programs to industry standards. Familiarization with engineering graphics in the 3D environment to include drawing commands, efficiencies of PSM vs. the 2D environment. CAD or 3D experience recommended.

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**Course Prerequisite(s):**

None

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**Course Corequisite(s):**

None

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**AA Degree Outcomes:** ( If Applicable )

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**Essential Learning Outcomes:**

**Intellectual & Practical Skills, including**

Critical thinking and problem solving

Exhibit the safe and proper selection, use and maintenance of technical equipment used in the 3D printing process, select materials appropriate for the intended use of the 3d models and thinking through the processes taken to produce required projects.

Quantitative reasoning

The student will use Solidworks to produce basic engineering drawings using Imperial and Metric units of Measurement and the conversion of one unit of measurement to the other.

**Integrative & Applied Learning**

Synthesis and application of knowledge, skills and responsibilities to new settings and problems

Demonstrate an awareness of career opportunities and requirements needed to make informed and meaningful choices in technical occupations.

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**Discipline/Program Outcomes:**

- Demonstrate the ability to identify, formulate and solve engineering problems
- Complete a comprehensive design project using advanced engineering design programs as required by industry standards.
- Describe the role and purpose of codes and standards as they pertain to the life, health, and safety of the public.
- Perform the necessary steps to transform an idea or need into a completed project.
- Perform and support design and estimating functions, including costs, labor requirements, equipment and scheduling functions.

**Course Outcomes:**

1. Upon completion of this course the successful student will be able to demonstrate how to utilize Parametric Solid Modeling to create printed 3D objects that are used in everyday life.
  2. Upon completion of this course the successful student will be able to demonstrate through projects and assignments the skills necessary to use PSM software.
  3. Upon completion of this course the student will be able to demonstrate how to produce drawings that meet accepted conventions and standards.
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**Assessment:**

Evaluation may include but is not limited to:

1. In-Class Quizzes and Exams
2. Class Assignments
3. Help Desk Posts
4. Final Project

Final grades are assigned according to published grading standards for course.

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**Explain why this course is being revised:**

The prerequisites have been deleted in the course description because it is a beginning class. The prerequisites have been a deterrent to enrolments.

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**Sample Syllabus**(Optional):

TDR 200 - INTRODUCTION TO SOLIDWORKS

Instructor Stephen H. Simmons

Title Professor/Program Coordinator

Office Phone 206/934-0085

Office Hours On-Line

E-mail [ssimmons@northseattle.edu](mailto:ssimmons@northseattle.edu)

Location On-Line

Start Date January 2, 2013

Course Credits 5

**Required Text**

Engineering Graphics with SolidWorks 2012; David Planchard, Marie Planchard; SDC; ISBN 978-1-4020-9111-1; available at the North Seattle Community College Bookstore

**Course Description**

Intro to Basic Parametric Solid Modeling practices using SolidWorks or comparable programs up to industry standards. Familiarization with Engineering Graphics in the 3D environment to include drawing conventions and efficiencies of PSM vs. the 2D environment.

**Course Objectives**

**NSCC Essential Learning Outcomes met by course:**

Intellectual and Practical Skills:

1. Critical thinking and problem solving

2. Quantitative reasoning

Integrative and Applied Learning:

1. Synthesis and application of knowledge, skills and responsibilities to new settings and prob

**Course Level Outcomes:**

1. Upon completion of this course the successful student will be able to demonstrate how to use Solid Modeling to create objects that are used in everyday life.
2. Upon completion of this course the successful student will be able to demonstrate through assignments the skills necessary to use PSM software.
3. Upon completion of this course the student will be able to demonstrate how to produce drawings that meet accepted conventions and standards.

**Tentative Schedule**

Chapters	Subject	Duration
Chapter 1	History of Engineering Graphics	week 1
Chapter 2	Isometric Projection and Multi View Drawings	week 2
Chapter 3	Dimensioning Practices, Tolerancing and Fasteners	week 3
Chapter 4	Introduction to SolidWorks Part Modeling	week 4
Chapter 5	Revolved Features	week 5
Chapter 6	Swept, Loft and Additional Features	weeks 6 & 8
Chapter 7	Assembly Modeling	week 8
Chapter 8	Fundamentals of Drawings	week 9
Chapter 9	CSWA	review - v
	Final Project delivery	week 11

In the last three weeks of the semester, students should start their final project. The project should include the following:

- Project plan
- Weekly status reports
- Concept sketches
- SolidWorks parts, assemblies, drawings and Bill of Materials
- Cost plan
- Manufacturing assembly procedure
- Engineering Change Order/Notice (ECO/ECN)

On-Line time is focused on the development and review of manual sketches, conceptual layouts and industry scenarios, preliminary designs, modeling techniques and manufacturing concerns.

**Grading Policy**

520.05 The Seattle Community Colleges use a numerical grading system. Passing grades range from 3.0 to 4.0. A grade of 0.0 is given for unsatisfactory performance. No grades will be awarded in the range 0.1 - 0.9. Numerical grades may be considered equivalent to letter grades as follows:

- **A** 4.0 - 3.9
- **A-** 3.8 - 3.5 Excellent

- **B+** 3.4 - 3.2
- **B** 3.1 - 2.9 High
- **B-** 2.8 - 2.5
- **C+** 2.4 - 2.2
- **C** 2.1 - 1.9 Average
- **C-** 1.8 - 1.5
- **D+** 1.4 - 1.2
- **D** 1.1 - 1.0 Minimum
- **F** 0.0 Unsatisfactory

Grade-point average (GPA) is determined by dividing total points earned by total credits hours at  
 The following letter grades may also be used:

- **I** - Incomplete
- **S** - Satisfactory with credit
- **N** - Audit
- **NC** - No Credit
- **W** - Official Withdrawal
- **Y** - Ongoing Course

520.10 The student must apply to the registrar for a "W" (an official withdrawal). If application f  
 made by the end of the second week of the quarter, the instructor's signature is not required. N  
 appear on the transcript. Withdrawal may be made after that time, up until the end of the eight  
 quarter (sixth week during the Summer Quarter), after completing an exit interview with the ins  
 associate dean. A "W" will show on the transcript. A class withdrawal cannot be made after the e  
 week. After a "W" is issued the course may be repeated only once

520.15 A course may be repeated only once; this may be in order to change a grade, in which c  
 must request that the registrar's office use the highest grade in computing the GPA. Otherwise b  
 be averaged in computing the GPA. Permission may occasionally be given for an additional repe  
 circumstances. Approval depends upon the reasons for lack of previous success (such as illness)  
 demonstrating reasons to expect future success.

Adopted: January 7, 1977

Amended: June 12, 1993

Amended: October 22, 2012

Your course grade will be calculated as follow:

In-Class Exams and quizzes	40 %
Class Assignments	30 %
Help Desk Posts	10 %
Final Project	20 %
Total	100 %

**Time Commitment Policy**

You are expected to need about the same amount of time each week in this online class as you  
 be successful in an on-campus class. A parametric solids design class requires a commitment of  
 hours per week in videos, tutorials, homework, and other activities. You may need about 6 hour  
 text readings and homework, about 4 hours per week for tutorial activities (hands-on and online  
 for videos and homework, about 3 hours for discussion board participation and email, and additi  
 the weekly quiz and optionally participate in a virtual or in-person field trip. Before you begin, tr  
 these hours into your schedule of activities. If you have questions or concerns, please email m

seek solutions. Always try to complete work per the schedule and sign into the Angel website before to fall behind schedule if not diligent in this regard.

### **Academic Integrity**

A student who submits the work of another as her/his own or deliberately fails to properly credit borrowed from another source is guilty of plagiarism. A student, who uses notes, takes an exam student, copies answers from another student's exam, copies drawings in any manner or any other conduct aimed at making false representations with respect to student's academic performance cheating. Please refer to the Student Rights and Responsibilities Handbook for more information academic dishonesty.

### **Disability Policy**

In my commitment to student learning I want to support all students. If you have a disability that performance in this class please let me know. Students with disabilities are encouraged to use disability for support in implementing reasonable accommodations for their disabilities.

<https://northseattle.edu/disability-services>

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**Notations:** List any additional course fees or any additional notes (e.g. Permission required)

Solidworks is available in the CAD lab however purchase of the student edition of Solidworks is recommended for your home computer or laptop.

**This is to certify that the above criteria have all been met and all statements are accurate to the best of my knowledge.**

Faculty involved in originating this program:

Stephen H Simmons  
Print Name

*Stephen H Simmons*  
Signature

11/26/2014  
Date

Dean:

Terry J Cox  
Print Name

*Terry J Cox*  
Signature

10/24/2014  
Date

**Results of NSCC Curriculum and Academic Standards Committee Findings**

**Participating Faculty Response and Remarks**

- Recommended for approval
- Not recommended for approval

Chairman, Curriculum and Academic Standards Committee:

Brian Palmer  
Print Name

*Brian Palmer*  
Signature

12/2/2014  
Date

Vice President for Instruction:

Mary Ellen OKeefe  
Print Name

*Mary Ellen OKeefe*  
Signature

12/15/2014  
Date