North Idaho College  
CADT 250 – SolidWorks I

COURSE DESCRIPTION
CADT-250 is an introduction to SolidWorks and presents fundamental principles towards feature-based parametric modeling and design. Emphasis will be on using basic tools towards the creations of parts, assemblies, and drawings. Lecture/Lab: 3 hours per week

MATERIALS
SUPPLIES NEEDED: Thumb drive - minimum 4 gig, Note Pad and pencil, and a three-ring binder for a portfolio documents. RECOMMENDED: 12 month Student addition of SolidWorks 2011 ($150.00)

EVALUATION
STUDENT ASSESSMENT/GRADING
The student will be assessed using the following criteria: Weekly assignments, text exercises, and test. These are based on a 'point' system. The following grading scale will be used.

Grading scale:
• 100 -93 A
• 92 -90 A
• 89 -87 B+
• 86-83 B
• 82 -80 B

COURSE POLICIES
In regards to attendance, the instructor, on an individual basis, will evaluate sickness and family emergencies for excused absence but it is up to the student to be in the class on time and to have all assignments turned in on time.

Course Completion Requirements:
• Attend and participate in each class session.
• Complete assigned homework on time.
• Complete and hand in assignments on time (LATE ASSIGNMENTS WILL BE deducted 10% of your grade for each day late).
• Complete all theory, skill exams, and in-class and out-class learning activities.

CLASSROOM BEHAVIOR:
• Respect others by refraining from use of profanity, sexist, racial or ethnic jokes or comment, use of illegal drugs or tobacco products and no viewing pornographic materials.
• Food and drink need to be consumed outside the computer lab and classroom.
• Value and respect student input and comments.

GENERAL EDUCATION ABILITIES:
In conjunction with North Idaho College’s general education mission and goals, the following seven general education abilities have been developed. Most abilities will be addressed at the entry level.

1. Aesthetic Response - Analyze, design, develop, and produce projects
2. Communication - Develop and present proposals; interact with manufacturing technicians in the design and development of all projects.
3. Critical/Creative Thinking and Problem Solving - Group and individual projects will require collaboration from the design phase to production.
4. **Information Literacy** - The students will access information through research, textbooks, instruction, applied demonstration of CAD skills, and collaboration with the manufacturing department.

5. **Mathematical, Scientific, and Symbolic Reasoning** - Utilizing computer aided design and manufacturing disciplines, many of the necessary geometric calculations have been made and placed within the software. The student will demonstrate mathematical reasoning through proper use of computer-aided commands to solve design intent.


7. **Valuing/Ethical Reasoning** - Allow for individual creativity through analyzing and critiquing individual and group efforts toward a common goal.

**ACADEMIC HONESTY:**
Each student is responsible for performing academic tasks in such a way that honesty is not in question. If there is proof that academic honesty has been violated the instructor may take appropriate disciplinary action, including the refusal of course credit.

**PREREQUISITES:** None

**SCHEDULE**

**TENTATIVE COURSE OUTLINE/ASSIGNMENTS**
The following is a general overview of the topics and assignments. This timetable represents the important areas to be covered however; this is only a guide and is subject to change due to student needs. The Instructor will give either verbal or written notification for any changes to the schedule.

**Week 1 (Aug 23, 25)**
Introductions of students and instructor Review syllabus Review course and expectations Student SolidWorks 2011 purchase ($150.00 for one year) SolidWorks 2011 User Interface Study Chapters 1 & 2 - Setting the System Parameters, and Document Templates Review Chapters 1 & 2 questions for review Introduction to sketch planes, sketching, and Relations

**Week 2 (Aug 30, Sept 1)**
Sketch assignment Chapters 3 & 4 - Basic Modeling Topics, Basic Solid Modeling Complete Chapter 3 & 4 Exercises (Extrude Boss & Extrude Cut) - Due (TBD) Review Chapters 3 & 4 questions for review

**Week 3 (Sep 6, 8)**
Read and discuss Chapter 5 - Revolve Parts, Derived Sketches Do Chapter 5 Exercises - Flat Head Screw Driver page 5-8, and page 5-16 - Due (TBD) Review Chapter 5 Questions for Review

**Week 4 (Sep 13, 15)**
Read and discuss Chapters 6 & 7 - Rib & Shell Features, Contour Selection, Linear, Circular, and Curve Driven Patterns, and Hole Wizard. Complete Chapters 6 & 7 exercises Due (TBD) Review Chapters 6 & 7 questions

**Week 5 (Sep 20, 22)**
Read and discuss Chapter 8 - Part Configurations (Machines Block) Do Chapter 8 exercises - Due (TBD) Review Chapter 8 questions

**Week 6 (Sep 27, 29)**
Read and discuss Chapter 9 - Modeling Threads (Threaded Insert) Complete all chapter exercises - Due (TBD) Review Chapter 9 questions

**Week 7 (Oct 4, 6)**
Read and discuss Chapter 10 - Bottom Up assembly
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Complete only the following Chapter 10 exercises (Gate Assembly, page 10-12 and Cam Motion, 10-13) Due (Oct 6th end of class)  
Review chapter 10 question found on page 10-11  

Week 8 (Oct 11, 13)  
Complete Chapter 10 -Bottom-Up Assembly (Links Assembly starting on page 10-16) Review chapter 10 question found on page 10-32  
Complete Chapter 10 exercise (CAM Followers starting on page 10-33)  
Do the "Level 1 Final Exam" found on page 10-37.

OUTCOMES  
LEARNING OUTCOMES:  
After having completed this course, a participant should be able to:  
1 Create sketches, solid models, and bottom-up assemblies, using parametric modeling techniques.  
2 Develop a basic understanding of Form, Fit, and Functional requirements.  
3 Understand modeling strategies for mechanical components and assemblies.  
4 Create multi-view drawings.

ASSESSMENTS OUTCOMES:  
Students will demonstrate achievement of outcomes 1 through 4 by the following: class participation, quizzes/exams, and weekly learning activities in class assignments, self-evaluation, and projects.