Yavapai COLLEGE **SYLLABUS** *Your Course Learning Plan*	**COURSE: EGR 102: Introduction to Engineering** **INSTRUCTOR: Rick Peters** **TIME & DAY/ TIME FRAME: January 12, 2015 to May 4, 2015; class runs from 1:15 PM to 3 PM on Mondays and Wednesdays**

A. Instructor Contact & Communications

Classroom Location:	**CTEC Room 122**
YC Email Address:	**Rick.Peters@yc.edu Phone: (928) 771-6114**
Office/Campus Location:	**CTEC room 161**
Office/Lab Hours:	**3-4PM, Monday, Wednesday and Thursday; open lab on Thursdays from 11AM-7PM**
Separate Web Address: (if available)	**N/A**

B. General Course Information, Content, & Learning Outcomes

Course Purpose & Credit Hours:	This course introduces the student to the field of engineering. Course topics include: parametric modeling with SolidWorks, VHDL, and value engineering. There are three team projects where students will have the opportunity to work in a team environment with specific goals and a defined timeline. 3 credits: Two lecture. Two lab.
General Education:	☐ This course is on a General Education list X This course is not on a General Education list ** S/U grading is not an option for courses applied to the Arizona General Education Curriculum (AGEC).
Course Description:	Introduction to the field of engineering. Emphasizes the integration of teamwork, problem solving, and verbal communication skills into a design project. Two lecture. Two lab.
Prerequisite/Co-requisite:	MAT 187
Course Content:	1. Engineering as a career and profession 2. Ethics 3. Analysis and problem solving 4. Design processes 5. Project management and teamwork skills
Learning Outcomes:	Upon successful completion of this course, the learner will be able to: 1. Describe the engineering profession. (1)

	2. Describe engineering ethics, including professional practice and licensure. (1,2) 3. Use technical communication skills when presenting the results of group projects. (3) 4. Explain engineering analysis and design processes. (3-4) 5. Analyze data collected during laboratory procedures from a variety of engineering disciplines. (3,5) 6. Design a simple engineering device, write a design report, and present the design. (4,5)
Assessment Measures	SolidWorks Labs SolidWorks exams Value Engineering quizzes Value engineering Team resentation Value Engineering Team Final Report Engineering Topics Short Papers VHDL Labs VHDL Team project Final exam
Grading (credit) criteria:	SolidWorks Labs: 15 @ 20 points each based on SolidWorks grading rubric SolidWorks exams: 4 @ 30 points possible each; percentage score equals number correct divided by total possible. Value Engineering quizzes: 7 @ 40 points possible each; percentage score equals number correct divided by total possible. Value Engineering assignments: 8 @ 20 points each Value Engineering Team Presentation (100 points based on presentation rubric) Value Engineering Team Final Report (100 points based on report rubric) Engineering Topics Short Papers (4 @ 50 points each) VHDL Labs: 6 @ 30 points each possible VHDL Team Project: 100 points possible based on project rubric Final exam: 100 points possible: percentage score equals number correct divided by total possible SolidWorks Labs: 300 points possible SolidWorks exams: 120 points possible Value Engineering quizzes: 280 points possible Value Engineering Assignments: 160 points Value engineering presentation: 100 points possible Value Engineering team final report: 100 points possible Engineering Topics Short Papers: 200 points possible VHDL Labs: 180 points possible VHDL Team Project: 100 points possible (optional) Final Exam: 100 points possible **Total points possible: 1,540** Grading: A = 1,386-1,540 points (90%) B = 1,232-1,385 points (80%) C = 1,078-1,231 points (70%) D = 924-1,077 points (60%) F = 923 or less *I will do my best to respond to email, voice mail within 24 hours during the week. I will return graded assignments within 7 days after the scheduled due date. If you*

	have questions regarding an assignment, contact me prior to the due date so your question can be answered in a timely manner.)
C. Textbooks, software, supplies, equipment and/or tools	Parametric Modeling with SolidWorks, Randy H. Shih, Paul J. Schilling, SDC Publications 2014 Edition; ISBN: 978-1-58503-852-7 Optional texts for Value Engineering Section *"Value Engineering Theory & Practice in Industry"*,Thomas R. King (Available online or through SAVE Intl. ISBN: 0-9679217-1-6) Supplemental Text: "*Techniques of Value Analysis and Engineering*", Lawrence Miles (Available online as a download) Supplemental Resource: *"Value Standard and Body of Knowledge"*, Society of Value Engineers, available online Scientific calculator SolidWorks Software 60-day free software trail: www.solidworks.com/SDK SKD-ID: TEMPDL During the download process you will receive an e-mail with the 24-character serial number needed to install and activate. PLEASE NOTE: This is a large, slow download: make sure you've got enough room for it on your PC and prepare to download it more than once as it tends to crash often.

Student Resources (as applicable)	
Campus Resources:	Campus Resources available through Student Services (http://www.yc.edu/v4content/student-services/default.htm).
***myYC* Portal:**	All Yavapai College students will be required to use the *myYC* Portal to register, add, or drop classes online at http://my.yc.edu/. First-time students will create a log-on username and password. The *myYC* Portal includes: • Links to your College email • Your degree audit system – *DegreeWorks* – to track your progress • Registration information - also your schedule • View transcripts, update information, and more! For assistance with the Portal, go to http://portalinfo.yc.edu/support.asp

Student Email Accounts:	Yavapai College requires enrolled students to have an e-mail address to which official College communications can be sent called 'Scholar', accessed by clicking on the email icon in your *myYC* portal. Students are expected to check their Yavapai College Scholar account for college-related information and for class information and announcements, as directed by the instructor. For assistance, go to http://www.yc.edu/content/myyc/emailinfo.htm Students may elect to forward their e-mail to an address different from their official Yavapai College account (see instructions on website), but assume full responsibility for reading e-mail at the forwarded location.
Library Services:	Library services are available at the Prescott and Verde Valley Campuses. Both are members of a countywide library network, which provides access to a wide range of information and resources at libraries throughout Yavapai County. Both libraries also include public computer access.
Learning Centers & Tutoring:	Learning Centers are available on both the Prescott and Verde Valley Campuses. These centers provide a variety of learning support for students including tutoring, adaptive computer and learning equipment for students with disabilities, and a networked general computer lab for registered students. Please call for details: Prescott - 776-2085, or Verde Valley – 634-6562. Web link: http://www.yc.edu/v4content/learning-center/
Online resources and services:	Online writing tutoring for any academic subject is available at http://www.yc.edu/v4content/learning-center/
Open Computer Labs:	Most campuses have open computer lab hours for currently-enrolled students. Please check your campus site for availability and schedules.
Holidays & Closures:	**Monday, January 19th – Martin Luther King Day (no class)** **March 9-13, 2015 – Spring Break**
Important Dates:	Instruction Begins – **January 12, 2015** Last Day to Add/Drop Regular class –**January 18, 2015** Last Day for 100% refund – **January 18, 2015** Last Day of Student-initiated Withdrawals (no refunds) – **March 8, 2015** Last Day of classes – **May 4, 2015**

Institutional Policies and Instructor Procedures

Attendance:	Students are expected to attend and participate in all class meetings, laboratories, and field trips. A student who expects to be absent due to another school-sponsored activity or compelling personal reason must make prior arrangements with the instructor. All course work must be made up as directed by the instructor. A student who does not adhere to instructor and College attendance requirements may be dropped from the course as defined in the Yavapai College General Catalog.

Course Withdrawal:	A student-initiated drop date is established by the College. For Spring semester 2014, this date is **March 8th, 2015.** Students are responsible to drop a class through the Self-Service option on the *myYC* Portal. If you have not withdrawn from a class by the student-initiated drop date, you will receive the letter grade earned in the course at the end of the semester. An instructor may withdraw students from class after the student-initiated date. If a student does not follow official procedures for withdrawing from a course, failing grades may be posted on your student permanent record.
Satisfactory (S) Unsatisfactory (U) Grades	An "S" grade is defined as equivalent to a grade of "C" or better on the conventional grading scale of A-F. A course completed with an "S" grade indicates appropriate subject area knowledge to satisfy the prerequisite requirement of a related higher-level course. Specified courses are graded only S/U. Students who prefer the S/U grading option must notify the class instructor. Conditions of Satisfactory/Unsatisfactory (S/U) grading: • Since some college and universities limit the number of credits completed with S/U grading that will transfer, or restrict the way that such credits may be applied to degree requirements, it is recommended that students preparing to transfer select the S/U grading option only for elective courses. • A maximum of twelve (12) hours of "S" credit from 100- and 200-level courses may be applied toward Yavapai College graduation requirements. • S/U grading is not an option for courses applied to the Arizona General Education Curriculum (AGEC). • S/U grades are not computed in the student's Yavapai College grade point average.
Academic Integrity:	Honesty in academic work is a central element of the learning environment. It will be assumed that you will present your own work. The presentation of another individual's work as one's own or the act of seeking unfair academic advantage through cheating, plagiarism or other dishonest means are violations of the College's Student Code of Conduct. Definitions of plagiarism, cheating, and violation of copyright and penalties for violation are available in the Yavapai College Student Code of Conduct (http://www.yc.edu/v4content/student-services/code-conduct.htm)

Student Code of Conduct:	Respect for the rights of others and for the College and its property are fundamental expectations for every student. The "Code of Conduct" outlines behavioral expectations, and explains the process for responding to allegations of student misconduct. Students are expected to respond and write in a professional and appropriate manner when activities are assigned to create scenarios, discuss opinions, present on a selected subject, or post to the web discussion board. Inappropriate language or objectionable material will not be tolerated and could result in disciplinary measures and/or a failing grade for the class. Web link for the Student Code of Conduct – http://www.yc.edu/v4content/student-services/code-conduct.htm
Internet Downloading:	Yavapai College technological equipment and resources must be used in accordance with the Copyright Guidelines. Use of Yavapai College equipment and resources to illegally copy, download, access, print or store copyrighted material or download pornographic material is strictly prohibited. For example, file swapping of copyrighted material such as music or movies is strictly prohibited. Users found to violate this policy will have their privileges to use Yavapai College technological equipment and resources revoked.
Disability Resources:	Yavapai College is committed to providing educational support services to students with documented disabilities. Accommodations for a student must be arranged by the student through the Disability Resources Coordinator (Prescott Campus: 928-776-2079 or Verde Valley Campus: 928-634-6563).
Cell Phone, Pages & Texting:	Yavapai College is committed to providing a quality learning environment. All cell phones and pagers must be placed in a non-audible mode while in classrooms, computer labs, the library, the learning center, and testing areas. Cell phones and pagers need to be used outside these facilities. **Cell phones** must be turned off in the lab**. Please turn them off and take them with you to prevent theft. Do not leave them on your desk.**
Tobacco Use:	Yavapai College is committed to limiting exposure to the harmful effects of primary and secondary smoke to campus students, visitors, and employees. If you use the facilities at Yavapai College, we comply with ASRS 36-301.01, Smoke Free AZ. Smoking is prohibited indoors and 25 feet from all doors, windows and vents. **At CTEC the smoking area is designated outside the exterior door nearest the student lounge. NO other areas are permitted for smoking.** In order to reduce the harmful effects of tobacco use and maintain a healthful working and learning environment, the district prohibits the use of tobacco except in specific areas. Tobacco use on college property is defined as lighted pipes, cigars, cigarettes, and the use of snuff and smokeless tobacco in any form.

Drug & Alcohol Free Environment:	Yavapai College's policy is to provide an environment free of drugs and alcohol. The use of illegal drugs and abuse of alcohol pose significant threats to health and can be detrimental to the physical, psychological, and social well-being of the user and the entire Yavapai College community, and is prohibited.
Additional Instructor Information & Procedures:	**LATE WORK:** Assigned work (worksheets, labs, review questions and exams) will be accepted after the due date defined in the calendar **only if prior notice is given** of an absence to the instructor **in advance of the class meeting** (via e-mail or phone). In other words, if you miss class and don't let me know about it in advance you will not be allowed to make up any work that you missed. **Note: All assignments except team projects are due the next class meeting.**
Online System & Assignment Requirements	**All course materials are available 24/7 at the course shell in Blackboard.**

COURSE CALENDAR

Date	Activity	Assessment
1/12/2015	Introduction/syllabus **SolidWorks Unit 1: Getting Started** **NOTE: All assignments are due the next class after they are assigned.**	**Pre-test** (not part of your grade) *SolidWorks Lab #1: Getting Started in SolidWorks (20 points possible)*
1/14/2015	**SolidWorks Unit 2: Parametric Modeling Fundamentals** **SolidWorks Unit 3: Constructive Solid Geometry Concepts**	*SolidWorks Lab #2: Adjuster Part (20 points possible)* *SolidWorks Lab #3: Locator Part (20 points possible)*
1/19/2015	**NO CLASS: Martin Luther King Day**	
1/21/2015	**Value Engineering Unit 1: VE Concepts**	**Chapter 1 exam (50 points possible)**
1/26/2015	**SolidWorks Unit 4: Feature Manager Design Tree**	**Value engineering quiz #1** *(40 points possible)* *SolidWorks Lab #4: Saddle Bracket(20 points possible)*
1/28/2015	**VHDL Unit 1: VHDL Basics**	*VE assignment #1: module 1 review (20 points possible)* *VHDL Lab #1:Getting Started in VHDL (30 points possible)*
2/2/2015	**SolidWorks Unit 5: Geometric Relations Fundamentals**	**SW Exam 1 (Units 1-4)** ***30 points possible*** *SolidWorks Lab #5: Dimensioned Plate (20 points possible)*
2/4/2015	**Value Engineering Unit 2: VE Job Plan and Function Analysis**	**Short Paper 1 due** *(50 points possible)*
2/9/2015	**SolidWorks Unit 6: Geometric Construction Tools**	**Value engineering quiz #2** *(40 points possible)* *VE assignment #2: function determination (20 points possible* *SolidWorks Lab #6: Gasket (20 points possible)*
2/11/2015	**VHDL Unit 2: Schematic Editor**	*VHDL Lab #2: Schematic Editor (30 points possible)*
2/16/2015	**SolidWorks Unit 7: Parent/Child Relationships**	*SolidWorks Lab #7: U-Bracket (20 points possible)*

2/18/2015	**Value Engineering Unit 3: Teams and Teamwork, Value Concepts, Tools, and Techniques**	
2/23/2015	**SolidWorks Unit 8: Part Drawings and Associative Functionality**	**Value engineering quiz #3** *(40 points possible)* *VE assignment #3: Scope Statement (20 points possible)* *SolidWorks Lab #8: Drawings (20 points possible)*
2/25/2015	**VHDL Unit 3: Programming in VHDL**	*VHDL Lab #3: Simulation (30 points possible)*
3/2/2015	**SolidWorks Unit 9: Reference Geometry and Auxiliary Views**	**SW Exam 2 (Units 5-8)** ***30 points possible*** *SolidWorks Lab #9: Rod Guide (20 points possible)*
3/4/2015	**Value Engineering Unit 4: FAST Diagramming**	**Short Paper 2 due** *(50 points possible)*
3/9/2015	**Spring break – no class!**	
3/11/2015	**Spring break – no class!**	
3/16/2015	**SolidWorks Unit 10: Symmetrical Features in Designs**	**Value engineering quiz #4** *(40 points possible)* *SolidWorks Lab #10: Pulley (20 points possible)*
3/18/2015	**VHDL Unit 4: VHDL Full Adder**	*VE assignment #4: Information Phase (20 points possible)* *VHDL Lab #4: Full Adder (30 points possible)*
3/23/2015	**SolidWorks Unit 11: Advanced 3D Construction Tools**	*SolidWorks Lab #11: Dryer Housing (20 points possible)*
3/25/2015	**Value Engineering Unit 5: Conducting the Value Study - Project Selection and Information Phase**	
3/30/2015	**SolidWorks Unit 12: Sheet Metal Designs**	**Value engineering quiz #5** *(40 points possible)* *VE assignment #5: Functional Analysis/FAST Diagram (20 points possible)* *SolidWorks Lab #12: Actuator Bracket (20 points possible)*
4/1/2015	**VHDL Unit 5: VHDL one-Hertz clock**	**Short Paper 3 due** *(50 points possible)* *VHDL Lab #5: One-Hertz clock (30 points possible)*

4/6/2015	**SolidWorks Unit 13: Assembly Modeling**	**SW Exam 3 (Units 9-12)** ***30 points possible*** *SolidWorks Lab #13: Shaft Support (20 points possible)*
4/8/2015	**Value Engineering Unit 6: Conducting the Value Study - The Middle Stages, Function Analysis and Idea Generation**	
4/13/2015	**SolidWorks Unit 14: Design Library and Basic Motion Study**	**Value engineering quiz #6** *(40 points possible)* *VE assignment #6: Creative Phase (20 points possible)* *SolidWorks Lab #14: Crank Slider (20 points possible)*
4/14/2015	**VHDL Unit 6: VHDL counters**	*VHDL Lab #6: VHDL Counters (30 points possible)*
4/20/2015	**SolidWorks Unit 15: Design Analysis and SimulationXpress**	*SolidWorks Lab #15: Flat Plate (20 points possible)*
4/22/2015	**Value Engineering Unit 7: Conducting the Value Study - Evaluation, Implementation, and Presentation Phases**	
4/27/2015	**SolidWorks Unit 16: CSWA Exam Preparation**	*VE assignment #7: Evaluation Phase (20 points possible)* *VE assignment #8: Development Phase (20 points possible)* **SW Exam 4 (Units 13-15)** ***30 points possible***
4/29/2015		**Value engineering quiz #7** *(40 points possible)* **Short Paper 4 due** *(50 points possible)* **VE Presentation due** *(100 points possible)* **VHDL Team project due** *(100 points possible)*
5/4/2015		**VE Final Report Due** *(100 points possible)* **Final Exam (100 points possible)**

*** end of EGR 102: Introduction to Engineering syllabus ***