

SYLLABUS
First Year Seminar
EGG 101: Introductory Engineering Experience (2 credits)
Spring 2013
Section 1007

Lecture: 8:30 – 9:20 AM on Thursdays; BPB106.

Instructor: Dr Henry Selvaraj

Phone: 702 895 4184

Email: Henry.Selvaraj@unlv.edu

Prerequisite: None

Corequisite: Student must be enrolled concurrently in the laboratory course *EGG 101L – Introductory Engineering Experience Laboratory*.

Office hours: Thursdays: 09:30-10:30 am. TBE B 336 or by appointment.

<p>I-clickers. You must bring an I-clicker to every class meeting, see below. Buy your own at the bookstore or get one as a loan from the department. You can use either the original I-clicker, or the I-clicker2.</p>	 <p style="text-align: center;">I-clicker</p>	 <p style="text-align: center;">I-clicker2</p>
--	---	--

Undergraduate Catalog Course Description: Seminar: Introduction to UNLV learning outcomes and the programs that reside within the College of Engineering. Topics include professional ethics, technical communication, the design process, and technology's impact on a global society.

Course Format: The course consists of a weekly lecture class and a weekly laboratory class. Class lectures are premised on familiarity with assigned readings. Therefore, class material will not necessarily replicate assigned reading material, and both will be covered on exams. Material covered by videos shown in class, videos assigned outside class and speakers presentations will be covered on exams. Students are responsible for reading the appropriate material before it is covered in lecture. **Students shall bring their textbook(s), other reading materials, and portfolio to every lecture.** The particulars for EGG 101L are covered in the EGG 101L syllabus.

Objective and Rationale: This course has been specifically designed to introduce students to the application of the required UNLV Universal Undergraduate Learning Outcomes (UULO's). The basis of the course is centered on topics that would be of interest to engineering students and students who would like to develop an improved perspective and understanding of engineers and engineering. The UULO's are:

1. **Intellectual Breadth and Life-Long Learning Outcome** - Integrate differing perspectives of the natural sciences, social sciences, humanities and fine arts, and develop skills and desire for life-long learning. Competence in the Intellectual Breadth and Life-Long Learning outcome is defined by the following objectives:
 - a. Demonstrate in-depth knowledge and skills in at least one major area.
 - b. Identify the fundamental principles of the natural sciences, social sciences, humanities and fine arts.
 - c. Apply the research methods and theoretical models of the natural sciences, social sciences, humanities and fine arts to define, solve, and evaluate problems. Transfer knowledge and skills gained from general and specialized studies to new settings and complex problems.
 - d. Demonstrate life-long learning skills, including the ability to place problems in personally meaningful contexts, reflect on one's own understanding, demonstrate awareness of what needs to be learned, articulate a learning plan, and act independently on the plan using appropriate resources.
 - e. Be capable of achieving success in one's chosen field or discipline, including applying persistence, motivation, interpersonal, leadership, goal setting, and career skills.
2. **Inquiry and Critical Thinking Outcome** – Use qualitative and quantitative reasoning and appropriate research methods to guide the collection, analysis, and use of information. Competence in the Inquiry and Critical Thinking outcome is defined by the following objectives:
 - a. Identify problems, articulate questions or hypotheses, and determine the need for information.
 - b. Access, collect, and evaluate the needed information from appropriate primary and secondary sources.
 - c. Use quantitative and qualitative reasoning, including the ability recognize assumptions, draw inferences, make deductions, and interpret information to analyze problems in context and draw conclusions.
 - d. Recognize complexity of problems, tolerate ambiguity when appropriate and identify different perspectives from which problems and questions can be viewed.
 - e. Evaluate and report on conclusions, including discussing the basis for and strength of findings, and identify areas where further inquiry is needed.
 - f. Use results of inquiry and analysis to make judgments and guide actions.
3. **Communication Outcome** – Communicate effectively in written, spoken, visual, and digital modes. Competence in the Communication outcome is defined by the following objectives:
 - a. Demonstrate general academic literacy, including how to respond to needs of audiences and to different kinds of rhetorical situations, analyze and evaluate reasons and evidence, and construct research-based arguments using Standard Written English.
 - b. Effectively use the common genres and conventions for writing within a particular discipline or profession.
 - c. Prepare and deliver effective oral presentations.
 - d. Collaborate effectively with others to share information, solve problems, or complete tasks.
 - e. Produce effective visuals using various media.
 - f. Apply the up-to-date technologies commonly used to research and communicate within one's field.

4. **Global and Multicultural Outcome** - Develop knowledge of global and multicultural societies and an awareness of one's place in and effect on them. Competence in the Global and Multicultural Outcome is defined by the following objectives:
 - a. Demonstrate knowledge of the history, philosophy, arts and literature of world cultures.
 - b. Respond to diverse perspectives linked to identity, including age, ability, religion, politics, race, class, gender, ethnicity, and sexuality, both in American and international contexts.
 - c. Apply the concept of social justice.
 - d. Demonstrate familiarity with a non-native language or experience living in a different culture.
 - e. Function effectively in diverse groups.
 - f. Demonstrate awareness of one's own place in and effect on the world.
5. **Citizenship and Ethics Outcome** - Participate knowledgeably and actively in the public life of our communities and make informed, responsible, and ethical decisions in one's personal and professional life. Competence in the Citizenship and Ethics Outcome is defined by the following objectives:
 - a. Acquire knowledge of political, economic, and social institutions.
 - b. Identify the various rights and obligations that citizens have in their communities.
 - c. Apply various forms of citizenship skills such as media analysis, letter writing, community service, and lobbying.
 - d. Explain the concept of sustainability as it impacts economic, environmental, and social concerns.
 - e. Examine various concepts and theories of ethics and how to deliberate and assess claims about ethical issues.
 - f. Apply ethical concepts and theories to specific ethical dilemmas students will experience in their personal and professional lives.

Pedagogical Concepts - Seminar: Learning outcomes will be assessed through reading assignments, critical discussion, oral and written reports, and creative application of learned concepts in the context of engineering design and other open-ended learning exercises related to engineering design. The course will introduce students to academic thought, discourse, and practices applied to the engineering discipline. Students will research assigned topics using the library and/or the online information, critically analyze collected information, and present their results in oral and written reports.

Learning Outcomes:

1. **Student Success** - Students will be able to create a personal success strategy and evaluate their strategy,
2. **Engineering Disciplines and Careers** - Students will be able to identify and describe the different engineering disciplines and majors in the College of Engineering.
3. **Ethics** - Students will be able to evaluate an engineering case study based on the National Society of Professional Engineers Code of Ethics.
4. **Citizenship, Society, Globalization and Technology Impact** - Students will be able to formulate a casual-loop diagram showing the impact of a particular technology on a particular society.

Cross tabulation of learning outcomes with UNLV UULO's are presented in the table below.

Learning Outcome	UULO
1. Student Success	1. Intellectual Breadth and Life-Long Learning Outcome 2. Inquiry and Critical Thinking Outcome 3. Communication Outcome
2. Engineering Disciplines and Careers	1. Intellectual Breadth and Life-Long Learning Outcome
3. Ethics	2. Inquiry and Critical Thinking Outcome 3. Communication Outcome 5. Citizenship and Ethics Outcome
4. Citizenship, Society, Globalization and Technology Impact	2. Inquiry and Critical Thinking Outcome 3. Communication Outcome 4. Global and Multicultural Outcome

Course Schedule

The following table provides the lecture schedule and reading assignments. The table provides the learning outcome numbers, which are tied to the UULO's in the Learning Outcome Section. Homework assignments are provided in the section immediately following this section.

Week	Learning Outcome	Lecture Topic	Reading(s) <i>Note - Readings are to be completed prior to the lecture in which they will be covered.</i>
0	1		Oakes et al. (2012) Chapter 19 The Campus Experience, pp 521- 530; Chapter 7 Succeeding in the Classroom, pp 169-197
1	1	Introduction to Student Success	Oakes et al. (2012) Chapter 14 Communication Skills, pp 369-393; Appendix A The Basics of PowerPoint pp 569-571
2	1	Communications	Oakes et al. (2012) Chapter 11 Teamwork, pp 307-323; Chapter 20 Financial Aid pp 533-549
3	1	Financial Aid and Teamwork	
4	1	Examination Covers all lectures, reading assignments and homework assignments for weeks 1 through 4.	Oakes et al. (2012) Chapter 2 Engineering Majors, pp 29-68; Chapter 3 Profiles of Engineers, pp 73-109; Chapter 4 A Statistical Profile of the Engineering Profession, pp 111-129; Chaptern22 Connections: Liberal Arts and Engineering, pp 563-568
5	2	Engineers and Computer Scientists and What They Do	Oakes et al. (2012) Chapter 8 Problem Solving, pp 201-228; Chapter 13 Engineering Design, pp Problem Solving, pp 341-368
6	2	The Engineering Method and Design	Oakes et al. (2012) Chapter 12 Project Management, pp 325-340
7	2	Project Management	
8		Examination Covers all lectures, reading assignments and homework assignments for weeks 4 through 8.	Oakes et al. (2012) Chapter 15 Ethics and Engineering
9	3	Engineering Ethics I	Assigned Case Studies

Week	Learning Outcome	Lecture Topic	Reading(s) <i>Note - Readings are to be completed prior to the lecture in which they will be covered.</i>
10	3	Engineering Ethics II	Oakes et al. (2012) Chapter 5 Global and International Engineering, pp 131-150; Chapter 6 Future Challenges, pp 151-168
11	4	Citizenship, Globalization and Diversity <i>Students will be assigned to teams will be assigned for the project</i>	1. Allenby, Braden R. (2011). <i>The Theory and Practice of Sustainable Engineering</i> , Prentice Hall. Chapter1 So What is Different Now? Or Why We Need Sustainable Engineering, pp 1-35; Chapter 2 Themes of the Anthropocene, pp 36-74 2. Douglas, David, Papadopoulos, Greg and Boutelle, John (2009). <i>Citizen Engineer: A Handbook for Socially Responsible Engineering</i> , Prentice Hall. Chapter 1 “Citizen Engineer” Defined, pp 1-11
12	4	Sustainability	Anderson and Johnson (1999) Chapter 1 What are Systems. pp 1-10; Chapter 2 What is Systems Thinking, pp 17-27; Chapter 3 Uncovering Systematic Structures: Drawing Behavior Over Time Graphs, 37-44
13	4	Systems Thinking	Anderson and Johnson (1999) Chapter 4 Uncovering Systematic Structures: Building Causal Loop Diagrams, pp 51-64; Chapter 5 Complex Systems, pp77-85; Chapter 6 From Loops to Leverage, pp 87-94
14	4	Casual-Loop Diagrams, Complex Systems and the World	
15		Student Team Presentations -	
16		Student Team Presentations Continued <i>Student team presentation for the first hour of the period.</i> Final Examination Covers all lectures, reading assignments and homework assignments for weeks 8 through 15. For	

Homework Assignments and Rules

All homework must be turned in immediately before the start of class. No homework submitted after the class lecture will be accepted, other than as allowed for by University regulations.

Homework Homework will be due at the commencement of the specified class period. Assignments must be submitted before or when due even if the student will be absent from class on the due date. All submitted assignments for the Lecture Section will be completed using word processing software following the guidelines in the Computer Generated Work section of this syllabus. No hand written work will be accepted in the

Lecture Section under any conditions. Assignments should be printed in a high-quality format (at least 300 dpi). Documents should have appropriate margins, spacing, pagination, and formatting. Assignments with spelling, grammatical, or mechanical errors—or with obvious erasures, cramped margins, coffee stains, etc.—will be downgraded appropriately.

The following table provides the homework assignment schedule. The table provides the learning outcome numbers, which are tied to the UULO's in the Learning Outcome Section.

Week	Homework Assignment(s) <i>Note – Detailed requirements for each homework will be distributed in class.</i>	Submission Schedule
1	<p>A. Visit the College of Engineering Advising Center, Lied Library, Financial Aid & Scholarships Office, Office of Student Conduct, Registrar's Office, Student Health Center, Writing Center, Student Support Services Program Office, Disability Center, Student Recreation and Wellness Center. When visiting each location collect information about their purpose and what it is that they can do that specifically support your needs.</p> <p>B. Identify three things you can do to keep a positive attitude toward your studies. Write a report describing these three things.</p>	
2	<p>C. Write a report that includes a one-paragraph description for each of the campus offices you visited during the previous week and the services provided by each. Do not use the UNLV Undergraduate Catalog or UNLV website description. The description is to be in your own words</p> <p>D. Prepare a 5-minute PowerPoint presentation to be given to your peers on good rules of communication Write a 1-page resume</p> <p>E. Locate a grammar or writing book in the Lied Library. Carefully read through the Table of Contents. Write down any topics with which you may be unfamiliar. Read through the material in the book related to any unfamiliar or forgotten parts of speech, and write a brief report detailing new information you learned.</p>	<ol style="list-style-type: none"> 1. Have completed homework assignment A 2. Submit homework assignment B
3	<p>F. Prepare a written personal success strategy with appropriate metrics based upon the homework assignments, reading assignments, and material learned in classes 1 through 3. Review Oakes et al. (2012) problems: 7.3, 7.4, 7.5, 7.7, 7.8, 7.9, 7.10, 7.11, 7.22, 7.25, 7.27, 7.28, 7.30, 7.31, 7.32, 7.34 to assist you in developing your strategy. The strategy should include day-by-day activities for the remainder of the fall 2012 semester. You are to evaluate your personal success strategy over the succeeding weeks and update it and resubmit it in week 8. Then continue to evaluate and update it and resubmit it in week 15. The final submission should include an evaluation of the success of the strategy,</p>	<ol style="list-style-type: none"> 1. Submit homework assignment C. 2. Submit homework assignment D. 3. Submit homework assignment E.

Week	Homework Assignment(s) <i>Note – Detailed requirements for each homework will be distributed in class.</i>	Submission Schedule
4	Examination	1. Submit homework assignment F your Personal Success Strategy.
5	G. Select a career area of interest and interview an industry partner regarding a career in, computer science or an engineering discipline. Write a 5- page report of the interview.	
6	Continue working in homework assignment G.	
7	H. Using a hypothetical engineering or computer science project prepare a project staffing plan based upon the lecture material, reading assignments, and homework assignments of weeks 4 through 7. What computer science, and engineering disciplines would be required to properly execute the project? Consult with an industry partner to verify your assumptions and approach.	1. Submit homework assignment G
8	Examination	1. Submit updated homework assignment F your Personal Success Strategy. 2. Submit homework assignment H.
9	I. Develop a written Personal Code of Ethics. Use the UNLV Student Academic Misconduct Policy and various professional and engineering societies' codes of ethics to assist in formulating your personal code of ethics. J. Incorporate your Personal Code of Ethics into your Personal Success Strategy.	
10	K. Evaluate a case study involving engineering ethics using the National Society of Professional Engineers Code of Ethics.	1. Submit homework assignment I.
11	L. Watch video: <i>MIT's John Sterman: A Call to Action on the World's Gravest Problems</i> (5:12 min.) http://asmarterplanet.com/blog/2010/04/mits-john-sterman-a-call-to-action-on-the-worlds-gravest-problems.html M. Watch video: <i>Why Bad Things Happen to Good Technologies</i> (55:08) http://video.mit.edu/watch/why-bad-things-happen-to-good-technologies-9329/ N. Prepare a written report summarizing the videos and the important ideas that each video conveys. O. Formulate a casual loop diagram model showing the impact of a particular technology on a particular society. Prepare a written report explaining the model and the assumptions of the model. Prepare an oral presentation of the model. <i>Note – This is a team project and will not be due until week 14.</i>	1. Submit homework assignment K.
12	P. Watch video: <i>2010 Almaden Institute: A Banquet of Consequences: Management Flight Simulators for Climate Change and Health Policy</i> (1:10:10) http://www.youtube.com/watch?v=quI96ZfM13I Q. Prepare a written report summarizing the video and the important ideas conveyed in the video. O. Continue work on team project.	1. Submit homework assignment N.

Week	Homework Assignment(s) <i>Note – Detailed requirements for each homework will be distributed in class.</i>	Submission Schedule
13.	O. Continue work on team project.	1. Submit homework assignment P.
14.	O. Continue work on team project.	
15.		1. Submit homework assignment O. 2. Begin oral presentations of team assignment O.
16,	Examination Completion of presentations of team assignment O.	3.

Date, Time, and Location of Final Examination

To Be Determined. Building TBE in room number A107.

Required Textbooks:

1. Oakes, William C., Leone, Les L. and Gunn, Craig J. (2012). *Engineering Your Future: A Comprehensive Introduction to Engineering*, Seventh Edition, Oxford University Press, New York, NY.
2. Anderson, Virginia and Johnson, Lauren (1997). *Systems Thinking Basics: From Concepts to Casual Loops*, Pegasus Communications, Inc., Waltham, MA.

Other Reference Material: Reference material from the library or online resources as assigned. The following two references have already been identified.

1. Allenby, Braden R. (2011). *The Theory and Practice of Sustainable Engineering*, Prentice Hall.
2. Douglas, David, Papadopoulos, Greg and Boutelle, John (2009). *Citizen Engineer: A Handbook for Socially Responsible Engineering*, Prentice Hall.

Assessment

Assessment	
Personal Success Strategy	10%
Project Staffing	5%
Personal Ethics Code	5%
Ethics Case Study	10%
Casual Loop Diagram of impact of a particular technology on a particular society	10%
Other Homework and Class Participation	5%
Examinations 1 and 2	10%
Final Exam	10%
Design Project Reports (EGG 101 Lab)	35%
Total	100%

Grading scale:

<i>Letter Grade</i>	<i>Numerical Score</i>	<i>Subjective Criteria</i>	
A	> 93%	Superior knowledge	<i>Acceptable Range</i>
A-	≥ 90%	Exceptional knowledge	
B+	≥ 87%	Good knowledge	
B	≥ 83%	Above average knowledge	
B-	≥ 80%		
C+	≥ 77%	Average knowledge – met minimum knowledge standards	<i>Marginally Acceptable Range</i>
C	≥ 73%		
C-	≥ 70%	Did not meet minimum knowledge standards	<i>Unacceptable Range</i>
D+	≥ 67%		
D	≥ 63%		
D-	≥ 60%		
F	< 60%		

Extra Credit Assignment Options: In this course there are **NO** extra credit options available. So don't even ask.

Portfolio: Each student is required to keep a course portfolio. Please purchase at least a 2-inch, 3-ring binder with divider tabs (divider tabs shall be appropriately labeled) that will be used to document:

1. All notes taken in lecture
2. All completed course work.
3. Handouts
4. Questions, issues, or perspectives you gained from lectures and the readings, and would like to raise in class
5. Your opinion of each chapter of the text
8. All notes taken in laboratory
9. All laboratory assignments
11. Personal Success Strategy
12. Personal Code of Ethics
13. Ethics Case Study
13. Team Project – Casual Loop Diagram of the effect of a particular technology on a particular society
14. All homework assignments

You shall bring this Portfolio to every lecture and laboratory class meeting commencing with the second EGG 101 Lecture Class.

Additional information regarding the Portfolio will be provided at a later date.

Computer Generated Work:

Documents shall have:

- 8-1/2" x 11" white paper
- Black ink for text
- 1.5-inch top and bottom margins

- 1-inch left and right margins
- Text shall be 12-point Times New Roman
- Paragraphs shall be right and left justified
- Text shall be 1.5 line spacing
- Single line spacing between paragraphs
- Page number centered at the bottom of the page
- Table titles to be at the top of all tables.
- Figure titles to be at the bottom of all figures
- Printed in a high-quality format (at least 300 dpi)

Every Document shall have a cover page containing the following information:

- Assignment Title
- Your name
- Course number and title
- Date assignment submitted
- Text shall be bold 14-point Times New Roman
- Text shall be double spaced

An example of how the cover page is to be prepared is as follows:

<p>Electrical and Computer Engineering Presentation</p> <p>My Name</p> <p>EGG 101 Introduction to Engineering and Computer Science</p> <p>January 24, 2013</p>
--

Some assignments may have different requirements. So be careful to note when different formats are required.

Lecture Notes: Lecture notes may be hand-written or computer generated. If a computer is used in the Lecture Section to take notes, web surfing is absolutely prohibited. The Graduate Teaching Assistant will monitor the lecture session to ensure conformance with this policy. If lecture notes are computer generated they will follow the guidelines in the Computer Generated Work section of this syllabus. All handwritten notes, whether script or printing, shall be extremely legible and easily read. Assignments with spelling, grammatical, or mechanical errors—or with obvious erasures, cramped margins, coffee stains, etc.—will be downgraded.

Lab Notes: Lab notes may be hand-written or computer generated. If a computer is used in the laboratory to take notes web surfing is absolutely prohibited. The Laboratory Instructor or Graduate Teaching Assistant will monitor the lecture session to ensure conformance with this policy. If lab notes are computer generated they will follow the guidelines in the Computer Generated Work section of this syllabus. All handwritten notes, whether script or printing, shall be extremely legible and easily read. Sloppy notes will be downgraded.

Examinations: Examinations will be closed book and closed notes. Missed examinations/quizzes will count as zero if prior authorization is not granted. Prior authorization will only be granted for medical or officially excused University absences. The honor system is observed. Make-up examinations will be given in accordance with the prior authorization policy circumstances only. No make-up examinations will be given beyond one week (7 days) after the original exam date. Make-up examinations will cover material similar to the original exam, but may be of a different format and different composition of types of questions.

Communication Skills: Communication skills are paramount to a successful career. Therefore, communication skills, written and oral, will be evaluated in all coursework. Lengthy and major assignments involving significant writing will have writing as 30 percent of their evaluation criteria. To get more help with writing you may access at: <http://writingcenter.unlv.edu/>

Class Attendance Policy: Class attendance is vital for student and professor communication and learning. Attendance is mandatory. The following is directly quoted from the 2012-2014 University Undergraduate Catalog: <http://catalog.unlv.edu/content.php?catoid=4&navoid=164>

“Class Attendance Policy: Registration in a course obligates the student to be regular and punctual in class attendance. Students who without previous arrangement with the instructor or department fail to attend the first two class meetings of a course that meets multiple times per week or the first meeting of a class that meets one time per week may be dropped from the course. Nonattendance for a web-based course shall be defined as failure to log onto Web Campus or other instructor-designed website within one week of course start date without previous arrangements with the instructor or department. A student may be dropped for nonattendance only during the regular drop/add period of the term. Nonattendance does not release students from the responsibility to officially drop any course for which they have enrolled and choose not to complete, nor from financial obligation to pay for the course.

Class Absences: There are no official absences from any university class. It is the student's responsibility to consult with the teaching faculty regarding absences from their class. Students may be dropped from classes for nonattendance during the first week of instruction upon notification by the instructor. It is the policy of the Nevada System of Higher Education to be sensitive to the religious obligations of its students. Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The makeup will apply to the religious-holiday absence only. It shall be the responsibility of the student to notify the instructor no later than the last day of late registration of his or her intention to participate in religious holidays that do not fall on state holidays or periods of class recess. This policy shall not apply in the event that administering the test or examination at an alternate time would impose an undue hardship on the instructor or the university that could not reasonably have been avoided. Any student who is denied a make-up option after appropriately notifying the teaching faculty, shall have the right to appeal that decision through the normal appeal mechanism in place at the university.”

The student is personally responsible for acquiring the information missed as a result of an absence, excused or otherwise. If you miss class for any reason, you are still responsible for the material and content of the class and for any assignment given for the

next class. Also, assignments must be submitted when due even if the student will be absent from class on the due date. Students who are not present for the entire class period or who are unprepared for class may also accrue absences. Late arrivals, early departures, and class sessions for which you are unprepared are all considered equivalent for attendance purposes. Religious holidays and university activities are covered in a later section.

Disability Resource Center (DRC) Statement: The Disability Resource Center (DRC) coordinates all academic accommodations for students with documented disabilities. The DRC is the official office to review and house disability documentation for students, and to provide them with an official Academic Accommodation Plan to present to the faculty if an accommodation is warranted. Faculty should not provide students accommodations without being in receipt of this plan. UNLV complies with the provisions set forth in Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, offering reasonable accommodations to qualified students with documented disabilities. If you have a documented disability that may require accommodations, you will need to contact the DRC for the coordination of services. The DRC is located in the Student Services Complex (SSC-A), Room 143, and the contact numbers are: Voice (702) 895-0866, fax (702) 895-0651. For additional information, please visit: <http://drc.unlv.edu/>.

Tutoring: The Academic Success Center (ASC) provides tutoring and academic assistance for all UNLV students taking UNLV courses. Students are encouraged to stop by the ASC to learn more about subjects offered, tutoring times and other academic resources. The ASC is located across from the Student Services Complex, #22 on the current UNLV map. Students may learn more about tutoring services by calling (702) 895-3177 or visiting the tutoring web site at: <http://academicsuccess.unlv.edu/tutoring/>.

UNLV Writing Center: One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 895-3908. The student's Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at: <http://writingcenter.unlv.edu/>

Library Research Tutorials: Students are required to attend the **Library Orientation: Find It!:** Great place to start! Get familiar with the library and its resources. Learn the tips and tricks for finding books and full text articles on your topic. http://library.unlv.edu/inst/ws_descriptions.php Students must submit a certificate of attendance to the Library Orientation: Find It! by the fourth class meeting. Students are required to successfully complete the library's on-line research tutorial which consists of 2 sections: Finding Books and Finding Journal Articles. You can do this on your own time from home or on campus. You must present your two printed confirmation receipts to your instructor by the fourth class meeting. You may turn these in early if you wish; failure to complete the tutorial will affect your participation grade.

<http://library.unlv.edu/help/tutorial/bookstutorial.htm>
<http://library.unlv.edu/help/tutorial/findarticles09AUDIO/findarticles09AUDIO.htm>

To help familiarize you with UNLV Library computer use policies, the university encourages you to visit at:

<http://library.unlv.edu/services/policies/computeruse.html>

Copyright: The University requires all members of the University Community to familiarize themselves and to follow copyright and fair use requirements. **You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you nor assume any responsibility for employee or student violations of fair use laws.** Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: <http://www.unlv.edu/committees/copyright/>

Academic Misconduct: Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution. An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the Student Academic Misconduct Policy (approved December 9, 2005) located at: <http://studentconduct.unlv.edu/misconduct/policy.html>

STUDENT ACADEMIC MISCONDUCT POLICY

Statement Of Purpose UNLV is first and foremost an academic community, with its fundamental purpose being the pursuit of learning and student development. UNLV believes that any instance of academic misconduct hurts the entire community and that the values of honesty, trust, respect, fairness, responsibility and professionalism are paramount. Therefore, to uphold and support standards of personal honesty and integrity for all members of the campus community consistent with the goals of a community of scholars and students seeking knowledge, it will be the policy of UNLV to enforce these standards through fair and objective procedures governing instances of alleged student academic misconduct. The following three sections are taken from the UNLV undergraduate catalog at <http://catalog.unlv.edu/content.php?catoid=4&navoid=170> an additional information regarding student academic misconduct may be found there also.

I. Expectations Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility, and professionalism. By choosing to join the UNLV community, students accept the expectations of the Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution.

- A. HONESTY** Honesty is the foundation of teaching, learning, research and service and is the prerequisite for full realization of trust, fairness, respect and responsibility. Students and faculty alike must be honest with themselves and others.
- B. TRUST** The UNLV community fosters a climate of mutual trust, encourages the free exchange of ideas, and enables all to reach their highest potential. Only with trust can the public at large believe in the social value and meaning of an institution's scholarship and degrees.

- C. **FAIRNESS** We strive to establish clear standards, practices, and procedures, and we expect fairness in the interactions of students, faculty and administrators. Important components of fairness are predictability, clear expectations, and a consistent and just response to dishonesty.
- D. **RESPECT** As an academic community of integrity, we recognize the participatory nature of the learning process and honor and respect a wide range of opinions and ideas. Students and faculty must respect themselves and each other as individuals. All must show respect for the work of others by acknowledging their intellectual debts.
- E. **RESPONSIBILITY** Every member of an academic community—each student, faculty member and administrator—is responsible for upholding the integrity of scholarship and research. Individuals must take responsibility for their own honesty and must discourage and seek to prevent misconduct by others.
- F. **PROFESSIONALISM** Because students are aspiring professionals, our community expects them to exercise professional conduct during their career as students and uphold the core value of academic integrity.

II. ACADEMIC MISCONDUCT VIOLATIONS - DEFINITIONS

Academic misconduct is defined as any of the following:

- A. Using the words or ideas of another, from the Internet or any source, without proper citation of the sources, commonly called plagiarism.
- B. Receiving external assistance during an examination or any academic exercise for credit unless expressly permitted by the instructor. This includes, but is not limited to:
 1. Providing or receiving aid not permitted by the instructor in connection with any academic assignment;
 2. Unauthorized use or possession of camera telephones, text messages, computer disks, audio recorders, calculators, solution materials, photocopies, materials from previous classes, commercial research services, notes or other means to copy or photograph materials used or intended for academic evaluation not authorized by the instructor for use during the academic evaluation or assignment;
 3. Communication in any manner with another student not permitted by the instructor during an examination;
 4. Working with others on graded course work, including in-class and take-home examinations, unless expressly permitted by the instructor; or
 5. Possessing, reading, buying, selling or using any materials intended for an academic evaluation or assignment in advance of its administration without the knowledge and consent of the instructor.
- C. Turning in the same work in more than one class (or when repeating a class), unless permission is received in advance from the instructor.
- D. Falsifying information for inclusion in an assigned paper, project or exercise; including inventing or altering data from a laboratory or field project, or creating fictional citations for a paper.
- E. Attempting to influence or change any academic evaluation, assignment or academic records for reasons having no relevance to academic achievement. This includes, but is not limited to, bribery, threats and making unauthorized changes to any academic record.
- F. Falsifying or misrepresenting hours or activities in relationship to an internship, externship, field experience, clinical activity or similar activity.
- G. Acting or attempting to act as a substitute for another, or using or attempting to use a substitute, in any academic evaluation or assignment.

- H. Facilitating, permitting or tolerating any of the above-listed items. Facilitating, permitting or tolerating any of the above-listed items.

III. PROCEDURES FOR HANDLING STUDENT ACADEMIC MISCONDUCT

These procedures are designed to encourage a fair and appropriate response to allegations of student academic misconduct. They may be modified in individual cases, so long as the student agrees to the proposed modifications, is provided an opportunity to respond to allegations of academic misconduct within a reasonable time after the allegations have been made, and the modifications do not violate fair process.

- A. Anyone with a good-faith basis for believing a student has violated this policy may report the alleged violation to the responsible instructor, chair / director, dean or appropriate designee within the academic unit. The person who pursues the allegation may be the responsible instructor or a designee appointed by the supervisor of the academic unit in which the course is located. It is expected that appropriate review and consultation with a supervisor and/or chair/director is a part of this process.
- B. A faculty member or primary course instructor who suspects that a student has committed an act of academic misconduct shall notify the student and offer the student an opportunity for an initial meeting to discuss the allegation and to present any relevant information. When possible, this initial meeting shall occur within seven calendar days of discovery of the alleged violation.
- C. Proceedings in case discussions are informal and non-adversarial. The responsible instructor/designee may make a verbal agreement on, or provide the student with a written or electronic notice of, a scheduled meeting. The responsible instructor/designee may request a witness to be present for this meeting. In compelling circumstances, this initial meeting may also be referred to the appropriate Office of Student Conduct (OSC) officer or designee. This option shall occur only after consultation with OSC.
- D. The purpose of this initial meeting will be to review and discuss the charges before a decision is reached. The responsible instructor/designee may use documentary evidence, provided the student is allowed to respond to it at the meeting. At the sole discretion of the responsible instructor/designee, a student may bring relevant witnesses and/or an advisor. Neither the responsible instructor/designee nor the student may have legal counsel as their advisor at an initial meeting. An advisor is not permitted to participate directly or speak for the student, but may only be present during initial meetings or any subsequent university hearings.
- E. At this initial meeting, the following results may occur:
 - 1. The allegations are dismissed.
 - 2. The student accepts responsibility for the violation and accepts the academic sanction(s).
 - 3. The responsible instructor/designee believes a violation occurred with the student not admitting responsibility and requesting a hearing.
 - 4. The student accepts responsibility for the violation but does not accept the academic sanction(s) and requests a hearing.
- F. In any of the above circumstances, the UNLV Alleged Academic Misconduct Report form (see Appendix A) should be completed, with a signed copy being provided to the student. Authority and jurisdiction for actual determination of academic misconduct and appropriate academic sanctions are with the primary instructor of the class and/or assignment in accordance with the academic unit chairs/directors/supervisors approval. If the responsible instructor/designee facilitating the initial meeting is not the primary instructor, appropriate

communication regarding such sanctions is necessary before signing the UNLV Alleged Academic Misconduct Report form.

- G. Upon completion of this initial meeting, if the responsible instructor/designee believes academic misconduct has occurred at any level, he or she shall notify the Office of Student Conduct (OSC) for resolution of a UNLV Student Conduct Code violation. Notification to OSC shall include a copy of the signed UNLV Alleged Academic Misconduct Report form and copies of any relevant documentation used in determining the violation.
- H. OSC will notify the charged student per notification procedures specified in the UNLV Student Conduct Code, which can be found at www.unlv.edu/studentlife/judicial/. The student will be informed of his or her applicable rights and the process(es) for accepting the academic and judicial sanctions and/or appealing the academic decision and sanctions.
- I. If the student does not attend the initial meeting, the instructor shall forward the charge to the Office of Student Conduct.

Bottom line: **Follow the Student Academic Misconduct Policy to the letter!**

Classroom Conduct: As part of this course's requirements the student is required to read and be responsible for knowledge of all material covered by the University's Academic Policies which may be accessed at <http://catalog.unlv.edu/content.php?catoid=4&navoid=164> Students have a responsibility to conduct themselves in class and in the libraries in ways that do not interfere with the rights of other students to learn or of instructors to teach. *Use of electronic devices such as pagers, cellular phones, or recording devices, or other potentially disruptive activities, is permitted only with the prior explicit consent of the instructor. The instructor may rescind permission at any time during the class.* If a student does not comply with established requirements or obstructs the functioning of the class, the instructor may initiate an administrative drop. The instructor must record circumstances. The approval of the dean of the college offering the course is required. Prior to a decision, the dean will consult with the student and other parties as appropriate. *It is policy in EGG 101 that students may not eat or drink in the classroom during the conduct of a lecture or laboratory. There are no exceptions to this rule.*

Religious Holidays Policy: Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor no later than the last day at late registration of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. This policy shall not apply in the event that administering the test or examination at an alternate time would impose an undue hardship on the instructor or the university which could not be avoided. For additional information, please visit: <http://catalog.unlv.acalog.com/content.php?catoid=1&navoid=44&bc=1>

Official Extracurricular Activities: Students who represent the University of Nevada, Las Vegas, at any official extracurricular activity shall have the opportunity to make up any assignments or examinations missed as a result of this event. It is the responsibility of the student to provide official written notification to the instructor of the course(s) at the earliest time possible of his or her intention to participate in a university-sponsored event but no less than one week prior to the date of the missed class. This policy shall not apply

in the event that completing the assignment or administering the examination at an alternate time would impose an undue hardship on the instructor or the university that could reasonably have been avoided. There should be good-faith effort by both faculty and student to come to a reasonable resolution. When disagreements regarding this policy arise, they can be appealed to the program director/department chair, dean of the college, and the Faculty Senate Academic Standards Committee. For purposes of definition, extracurricular activities may include, but are not limited to, intercollegiate athletics, band, drama, forensics, recruitment, or any other activity sanctioned by the college dean and/or the Executive Vice President and Provost.

Email Policy: By policy, faculty and staff should e-mail students' Rebelmail accounts only. Rebelmail is UNLV's Official e-mail system for students. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. Students' e-mail prefixes are listed on class rosters. The suffix is always @unlv.nevada.edu

Based on the above University Policy, only mail from a student's Rebelmail account or Web Campus mail will receive responses. Mail with other than a Rebelmail or Web campus mail address will be treated as spam (hotmail, g-mail, Yahoo mail, or employer or commercial accounts etc. are considered spam). In general mail pertaining to this course will be addressed during scheduled office hours and as time permits. A return mailing, if not immediate, may wait until the next scheduled office hours' period. Thus, it is possible that a response to a student email could take up to several days. Any email sent to a faculty member must follow rules of spelling, grammar, punctuation, and capitalization. **Any email message which appears to disregard or have been written with a deliberate ignorance of these guidelines will not receive a response.** Always sign your messages with you full name. **An unsigned email message will not receive a response.** For more details about University use of email and policies you can access at: <http://provost.unlv.edu/committees/policy/reviewed/pdf/Student-email-signed.pdf>

Faculty and Guest Lecturer Titles: Students are to address faculty members and guest lecturers in a professional manner with their appropriate title. If the individual holds the Doctor of Philosophy degree (Ph.D.), Doctor of Engineering (D.Eng.), Doctor of Science (Sc.D.), Doctor of Education (Ed.D.) or other doctoral degree and is instructing your class you may address them as Dr. (surname) or Professor (surname) depending on that faculty member's preference. In all other cases the faculty member shall be addressed as Professor (surname). Do not address a faculty member as Mr., Mrs., or Ms. as that does not convey your acknowledgement of the faculty member's professional relationship to you. Under no circumstances are you to address the faculty member or guest lecturer in a familiar manner using their first name, nickname, or just their surname.

Telephone Policy: Telephone calls of a routine nature concerning the course should be kept to a minimum or avoided and email communication used as the preferred method.

Respect for Faculty Time: Faculty have myriad responsibilities ranging far beyond this course within the university environment. I will be as accommodating as reasonably possible. With a class of this size it is impossible to accommodate all student requests.

Lecture Office Hours There are no appointments scheduled or drop-ins on the day an examination is scheduled. All appointments must be scheduled at least one day in advance.

Graduate Teaching Assistant (GTA):

Name To Be Determined
Office: To Be Determined
E-mail: To Be Determined

GTA Office Hours To Be Determined. There are no appointments scheduled or drop-ins on the day an examination is scheduled. All appointments must be scheduled at least one day in advance.

Disclaimer The contents of this document are to be considered “tentative” and subject to change as the instructor deems necessary. A syllabus should not be construed as a contractual document. It simply outlines the rules and regulations that will be enforced in the class and presents the instructor’s expectations to the students.

Library Resources and Reference Materials: The following list is provided for the students’ benefit. These references may be helpful in some homework assignments. Students who may have a deep interest in engineering, and computer science may find many of these interesting reading beyond the scope of this course. Not all references listed are available through UNLV libraries or the Nevada System of Higher Education’s library system and may have to be ordered through interlibrary loan.

- Addis, B. (2007). *Building: 3,000 Years of Design, Engineering and Construction*, Phaidon Press.
- Allen, D.T. and Shonnard, D.R. (2012). *Sustainable Engineering: Concepts, design and case studies*, Pearson.
- Allenby, B.R. (2011). *The Theory and Practice of Sustainable Engineering*, Prentice Hall.
- Anderson, V. and Johnson, L, (1997). *Systems Thinking Basics: From Concepts to Causal Loops*, Pegasus Communications.
- Bertoline, G.R. (2008). *Introduction to Graphics Communications for Engineers*, 4th Edition, McGraw-Hill.
- Baine, C (2004). *Is There An Engineer Inside You?: A Comprehensive Guide to Career Decisions in Engineering*, Professional Publications, Inc.
- Bell, I., McGrane, B., Gunderson, J. and Anderson, T.L. (2011). *This Book is Not Required: An emotional and intellectual survival manual for students*. 4th Edition. Pine Forge Press/Sage.
- Brockman, J.B. (2009). *Introduction to Engineering: Modeling and Problem solving*. John Wiley and Sons, Hoboken, N.J.
- Budinger, T.F. and Budinger, M.D.(2006). *Ethics of Emerging Technologies: Scientific Facts and Moral Challenges*, Wiley.
- Canine, C. (1997). *Dream Reaper: The Story of an Old-Fashioned Inventor in the High-Tech, High-Stakes World of Modern Agriculture* (Sloan Technology Series), University of Chicago Press.
- Crawford, M.B. (2010). *Shop Class as Soulcraft: An Inquiry into the Value of Work*, Penguin.
- Dilworth, C (2009). *Too Smart for our Own Good: The Ecological Predicament of Humankind*, Cambridge University Press.
- Dominick, P.G., Demel, J.T., Lawbaug, W.M., Freuler, R.J., Kinzel, G.L., and Fromm, E. (2001). *Tools and Tactics of Design*. John Wiley & Sons, Inc.
- Donaldson, K. (2005). *The Engineering Student Survival Guide*. 3rd Edition. McGraw- Hill’s BEST.

- Douglas, D., Papadopoulos, G. and Boutelle, J. (2009). *Citizen Engineer: A Handbook for Socially Responsible Engineering*, Prentice Hall, Upper Saddle River, N.J.,
- Dym, C.L. and Little, P., Orwin, E.J., Spjut, R.E. (2009). *Engineering Design: A project based introduction*. 3rd Edition. John Wiley and Sons.
- Dym, C.L. (1994). *Engineering Design: A synthesis of views*, Cambridge University Press.
- Dym, C.L. and Brown, D.C. (2012). *Engineering Design: Representation and Reasoning*, 2nd Edition, Cambridge University Press
- Eide, A.R., Jenison, R.D., Northup, L.L and Mashaw, L.H. (2011). *Engineering Fundamentals and Problem Solving*, 6th Edition, McGraw-Hill.
- Eide, A.R., Jenison, R.D., Mashaw, L.H., and Northup, L.L. (1997). *Introduction to Engineering Design*, McGraw-Hill.
- Eisenberg, A. (1997). *A Beginner's Guide to Technical Communication*, McGraw-Hill.
- Ferguson, E.S. (1994). *Engineering and the Mind's Eye*, MIT Press.
- Fleddermann, C.B. (2012). *Engineering Ethics*. 4th Edition, Pearson..
- Florman, S.C. (1996). *The Introspective Engineer*, Edition, St. Martin's Griffin.
- Florman, S.C. (1996). *The Existential Pleasures of Engineering*, 2nd Edition, St. Martin's Griffin.
- Florman, S.C. (1988). *The Civilized Engineer*, 2nd Edition, St. Martin's Griffin.
- Fogler, H.S, and LeBlanc, S. (2008). *Strategies for Creative Problem Solving*. 2nd Edition. Prentice Hall.
- Finklestein, L.(2008). *Pocket Book of Technical Writing for Engineers and Scientists*. 3rd Edition. McGraw-Hill's BEST.
- Graedel T. E. and Allenby B.R., (2009). *Industrial Ecology and Sustainable Engineering*, Prentice Hall.
- Green, T. (2010). *Bright Boys: The Making of Information Technology*, A.K. Peters.
- Hacker, M., Burghardt, D., Fletcher, L., Gordon, A., Peruzzi, W. Prestopnik, R. and Quissaunee, M (2010). *Engineering and Technology*, Delmar Cengage Learning
- Handley, B.A., Marshall, D.M. and Coon, C. (2012). *Principles of (Project Lead the Way)*, Delmar Cengage Learning.
- Hansen, K.L., Zenobia, K.E. (2011). *Civil Engineer's Handbook of Professional Practice*, Wiley/ASCE Press.
- Hart, H. (2009). *Engineering Communication*, 2nd Edition, Prentice Hall.
- Hayes, W. (2011). *Popular Mechanics What Went Wrong: Investigating the Worst Man-made and Natural Disasters*, Hearst.
- Heppenheimer, T. A. (1998). *Turbulent Skies: The History of Commercial Aviation* (Sloan Technology Series), Wiley.
- Irish, R. and Weiss P.E. (2009). *Engineering Communication: From Principles to Practice*, Oxford University Press.
- James, I. (2010). *Remarkable Engineers: From Riquet to Shannon*, Cambridge University Press.
- Johnson, S. (2010). *Where Good Ideas Come From: The Natural History of Innovation*, Riverhead.
- Karsnitz, J.R. Hutchinson, J.P. and O'Brien, S. (2008). *Engineering Design: An Introduction (Project Lead the Way)*, Delmar Cengage Learning.
- Kanigel, R. (1997). *The One Best Way: Frederick Winslow Taylor and the Enigma of Efficiency* (Sloan Technology Series), Viking.
- Kelly, K. (2010). *What Technology Wants*, Viking.
- Kelly, K. (1995). *Out of Control: The New Biology of Machines, Social Systems, & the Economic World*, Basic Books.
- Kirby, R.S. (1990). *Engineering in History*, Dover Publications.

- Kletz, T. (2009). *What Went Wrong?,: Case Histories of Process Plant Disasters and How They Could Have Been Avoided*, 5th Edition, Butterworth-Heinemann.
- Koen, Billy Vaughn. (2003). *Discussion of The Method: Conducting the Engineer's Approach to Problem Solving*, Oxford University Press.
- Kosky, P., Wise, G., Balmer, R. and Keat, W. (2009). *Exploring Engineering: An introduction engineering and design*. 2nd, Edition. Academic Press, Burlington, MA
- Kurzweil, R. (1999). *Age of Spiritual Machines: When computers exceed human intelligence*, Viking.
- Kuncicky, D.C. and Larsen, R.W. (2009). *Introduction to Excel*, 4th Edition, Prentice Hall, Upper Saddle River, N.J.
- Landis, Raymond B. (2012). *Studying Engineering*, 4th Edition. Discovery Press. Legal Books Distributing, Los Angeles, CA
- Larson, R.W. (2009). *Engineering with Excel*, 3rd Edition, Prentice Hall, Upper Saddle River, N.J
- Lieu, D. and Sorby, S. (2008). *Visualization, Modeling, and Graphics for Engineering Design*, Delmar Cengage Learning.
- Lima, M.and Oakes, W.C. (2006). *Service-Learning: Engineering in your community*, Oxford University Press.
- Locke, E.A. (1975). *Study Methods & Motivation: A practical guide to study*. Second Renaissance Books, New Milford, CN.
- Lumsdaine, E., Lumsdaine, M. and Shelnutt, J.W. (1999). *Creative Problem Solving and Engineering Design*. McGraw-Hill New York, NY.
- Martin, M.W. and Schinzinger, R. (2009). *Introduction to Engineering Ethics*, 2nd Edition, McGraw-Hill - ISBN 0072483113
- Matteson, D., Kennedy, D., Baur, S. and Kultermann, E. (2012). *Civil Engineering and Architecture (Project Lead the Way)*, Delmar Cengage Learning.
- McClellan, J.E. and Dorn, H. (2006). *Science and Technology in World History: An Introduction*, 2nd Edition, The Johns Hopkins University Press.
- McCuen, R.H., Ezzell, E.Z. and Wong, M.K. (2011). *Fundamentals of Civil Engineering: An introduction to the ASCE body of knowledge*, CRC Press.
- Meadows, D.H. (2008). *Thinking in Systems: A Primer*, Chelsea Green.
- Meadows, D.H., Randers, J. and Meadows, D.L. (2004). *Limits to Growth: The 30-Year Update*, Chelsea Green.
- Meyers, F.D., Croft Jr., F.M., Miller, M.J., Demel, J.T., and Enders, H.L (2007). *Technical Graphics*, Schroff Development Corp.
- Pacey, A. (1991). *Technology in World Civilization: A Thousand-Year History*, MIT Press, Cambridge, MA.
- Pahl, G., Beitz, W., Schulz, H.-J., Wallace, J.U., Blessing, K. and Lucienne. T.M. (2007), *Engineering Design. A Systematic Approach*, 3rd Edition, Springer, XXII, 617 p.
- Oakes, W., Leone, L. and Gunn, Craig (2011). *Engineering Your Future: A Comprehensive Introduction to Engineering*, Oxford University Press.
- Petroski, H. (2010). *The Essential Engineer: Why Science Alone Will Not Solve Our Global Problems*, Knopf.
- Petroski, H. (2008). *Success through Failure: The Paradox of Design*, Princeton University Press.
- Petroski, H. (1996). *Invention by Design; How Engineers Get from Thought to Thing*, Harvard University Press, Cambridge, MA.
- Petroski, H. (1992). *To Engineer Is Human: The Role of Failure in Successful Design*, Vintage.

- Pfatteicher, S.K.A. (2010). *Lessons amid the Rubble: An Introduction to Post-Disaster Engineering and Ethics* (Johns Hopkins Introductory Studies in the History of Technology), The Johns Hopkins University Press.
- Riordan, M. and Hoddeson, L. (1997). *Crystal Fire: The Birth of the Information Age* (Sloan Technology Series), W.W. Norton & Company.
- Smith, K.A. (2007). *Teamwork and Project Management*. 3rd Edition. McGraw-Hill's BEST, New York, NY. ISBN 0073103675
- Smith, M.R. and Marx, L. (1994). *Does Technology Drive History? The Dilemma of Technological Determinism*, MIT Press, Cambridge, MA.
- Starfield, A.M., Smith K.A. and Bleloch, A.L. (1994). *How to Model It: Problem Solving for the Computer Age*. Burgess International Group Inc./Interaction Book Co., Edina, MN.
- Stasinopoulos, P., Smith, M.H., Hargroves, K. and Desha, C. (2008). *Whole System Design: An Integrated Approach to Sustainable Engineering*, Routledge.
- Straub, H. (1964). *A History of Civil Engineering: An Outline from Ancient to Modern Times*. MIT Press, Cambridge, MA. (
- Tebeaux, E. and Dragga, S. (2010). *The Essentials of Technical Communication*, Oxford University Press.
- Timoshenko, S.P. (1983). *History of Strength of Materials*, Dover.
- Ulman, D. G. (2010). *The Mechanical Design Process*. 4th Edition. McGraw-Hill, New York, NY.
- Ulrich, K.T. and Eppinger, S.D. (2012). *Product Design and Development*. 5th Edition. McGraw-Hill, New York, NY.
- Walesh, S.G.(2012), *Engineering Your Future: The Professional Practice of Engineering*, 3rd Edition, Wiley.
- Whitbeck, C. (2011). *Ethics in Engineering Practice and Research*, 2nd Edition, Cambridge University Press.