

GENG 101  
**Ethics and the Engineering Profession**

Fall 2015

Lecture TR 8:00-9:15 am ECC 111

All labs in ECC 103A Sections 1, 2, 3 M, W, F 8:00-9:50 am and Sections 4, 5 T, Th 4:00-5:50 pm.

Also, there are open labs on Wednesdays, 4:00-6:00 pm.

**Instructors:** Dr. S. Covey, PE, ECC 101d, 320/308-5161, [covey@stcloudstate.edu](mailto:covey@stcloudstate.edu)  
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**Catalog:** Major ethical theories; sources of ethics; professional responsibilities; social impact of engineering ethics; teamwork skills; design; engineering careers. 3 cr

**Text:** *Studying Engineering*, R. Landis, Discovery Press, 2013, 4<sup>th</sup> Ed, ISBN 978-0-9793487-4-7 (softcover)

**References:**

- 1) *Engineering Your Future – A Comprehensive Approach*, by Oakes, Leone, and Gunn, Great Lakes Press, Inc., 7<sup>th</sup> edition, 2011, ISBN 978-0199797561
- 2) *Justice – What’s the Right Thing to Do?*, Michael J. Sandel, Published by Farrar, Straus and Giroux, 2009, ISBN 978-0-374-53250-5 and video lectures <http://www.justiceharvard.org/>
- 3) *The Elements of Moral Philosophy*, James Rachels, McGraw-Hill, 4<sup>th</sup> edition, 2002
- 4) *Ethics in Engineering*, M. Martin & R. Schinzinger, McGraw Hill, 4<sup>th</sup> Ed, 2005, ISBN 978-0-07-283115-3
- 5) Various course handouts and internet sources

**Outcomes:** After completing this course the students will have:

1. an understanding of the major ethical theories and sources of ethics as demonstrated by completing associated homework and quizzes
2. exposure to the professional ethics codes and the impact of ethics in the engineering profession as demonstrated by writing a paper on the topic
3. completed one or more engineering type design projects as demonstrated during a lab project
4. experience on multidisciplinary and/or multicultural teams as demonstrated during a lab project
5. adequate understanding of various engineering fields and associated responsibilities to facilitate the choice, study, and success of their engineering career as demonstrated by associated paper, homework, and/or quizzes.

**Labs:** Labs meet only about the first half of the semester as necessary to finish the project.

**Office:** M 9-12, 2-3, W11-12, 2-3, by appointment

**Grading:**

Homework	14% (14, all equal weight, 1% each)
Papers	44% (2 of equal weight, 22% each)
Quizzes	12% (4 ~12 minutes, open book/notes, 2 <sup>nd</sup> half of course, 3% each, no final exam)
Design project	30% (explained in handout)
Grades	A > 90%, B > 80%, C > 70%, D > 60%
Assessment	Two extra percentage points for completing the on-line assessment before or during the final exam time period (Thursday, 5/7, 7:30 – 10:00 am). There is NO final exam.

**Note:** Work is due before the Drop Box closes. In general, late work will not be accepted or graded. Your oversight, submitting wrong files, submitting files of an unreadable format, computer issues, etc., do not change the due date. If complications prevent proper submission of your work into a drop box, email the file ASAP (12:05 am?). You may or may not get any credit. The acceptable file format is pdf or WORD: any other formats are submitted at your own risk and will not be graded if they cannot be opened.

**Agenda:**

<i>Date</i>	<i>Topic</i>	<i>Sources</i>	<i>Required work, D2L week</i>
8/25T	Intro, engineering course requirements, project	Handouts	
8/27Th	How to earn better grades, keys to success	Notes, Ch 1	HW1 Importance of Engr
9/1T	Engineering career, rewards, and majors	Ch 2	HW2 Why Engineering?
9/3Th	Learning styles	Ch 3	HW3 Learning Styles
9/8T	Preparing for learning	Ch 4	HW4 Mistakes
9/10Th	The learning process	Ch 5	HW5 Success!
9/15T	Lab tours		HW6 Time Management
9/17Th	Personal growth	Ch 6.1-4	Jung Test, HW7 Engineer
9/22T	Strengths and weaknesses	Ch 6.5-8	HW8 Barriers
9/24Th	Learning opportunities	Ch 7.1-4	HW9 Stress Manage
9/29T	Lifelong learning	Ch 8.3-7	HW10 Plan for Success
10/1Th	Guest speaker roundtable discussion		
10/6T	Introduction to ethics and morality	Notes, Ch 1, E1	Paper 1 World Class
10/8Th	<b>No class, Fall Break!</b>		
10/13T	Design Project test		Project test
10/15Th	Design Project test		Project test
10/20T	Minor theories: Cultural Relativism, Subjectivism, Egoisms	Notes	
10/22Th	Utilitarianism (or Consequentialism)	Notes, Ch 2, E2	
10/27T	<b>Quiz #1</b> , Libertarianism	Notes, Ch 3, E3	HW11 Cases - Teams
10/29Th	Deontologicalism (or nonConsequentialism)	Notes, Ch 5, E6	
11/3T	Rights ethics	Notes, Ch 6, E8	
11/5Th	Divine command theory, Virtue/Gold Rule/Rights	Notes, 3Ch 9-10	HW12 Cases - Patents
11/10T	<b>Quiz#2</b> , Best ethical theory?, NSPE Ethics Code	Notes, Ch 10, E12	
11/12Th	Applied ethics: GM, harvesting body parts	Notes	
11/17T	Applied ethics: cont'd	Notes	HW13 Cases - Ethics
11/19Th	<b>Quiz#3</b> , Open mic (~5-10 minute student presentations regarding the ethics of issues of concern)*		
11/24T	Incident at Morales	Video	
11/26Th	<b>No class, Thanksgiving Break!</b>		
12/1T	My Sister's Keeper	Video	Paper2 Ethics, Week 16
12/3Th	My Sister's Keeper, Cont'd		
12/8T	Environmental ethics	Notes	HW14 Cases - Videos
12/10Th	<b>Quiz #4</b> , Wrap up	Notes	

**Correlation between Course Outcomes and Program Outcomes:**

Program outcomes can be viewed at <https://www.stcloudstate.edu/mme/accreditation.asp>)

Program Outcomes → Course Outcomes ↓	1	2	3	4	5	6	7	8	9	10	11	12
1) ethical theories and sources						X						
2) application of ethics						X			X		X	
3) completed design project	X											
4) multidisciplinary/cultural				X								
5) successful engineering career												

\*5-7 volunteers can sign up for ~8 minute Powerpoint presentations regarding the ethical issues important to them followed by brief discussion. Focus must be on the ethics of the topic with a case for or against using a specific ethical theory. Two extra credit points will be provided to those who volunteer. First come first served. Topics must be approved by the instructor ahead of time.