

## Introduction to Engineering

De Anza College Spring 2016

**Manizheh Zand & Ahmed Banafa**

### Office S48

#### Office hours:

Wed 8:30 am to 9:30 am

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#### Course objectives

Introduction to Engineering is to explore engineering through Students learn about various profession and acquire both technical skills, in areas such as and engineering ethics. Students factors as well as design factors including product life cycle stages.

M.A. Rosenoff: *"Mr. Edison, please tell me what lab rules you want me to observe."*

Thomas Edison: *"There ain't no rules around here. We're trying to accomplish something."*

A whole New Engineer by  
David E. Goldberg and Mark  
Somerville

designed to allow students hands-on design projects. aspects of the engineering technical skills and non-communication, teamwork, would learn about human within an overall process and

By designing and implementing an actual engineering project, students will be exposed to many ideas and principals. Students will form teams of 2-3 and choose project which excite them – and importantly, projects that have a good purpose. Successfully completing the project is not required; this provides the opportunity to deeply understand and analyze different technical and non-technical aspects of the project.

Theory is an important part of the projects. The actual goal of the projects is to prove or disprove a theory by gathering supporting data by creating proper tests and analyzing why or why not the expected outcome was achieved.

It is highly recommended to create a diverse team so students would get a good sense of the different engineering fields and how they overlap. Students will understand the importance of team work and leadership. They would learn to understand the concept of project management by experiencing the importance of organizational skills and time management skills while keeping track of the budget. They would create PERT and Gantt chart.

Throughout the course, students will be reminded to check for engineering ethics.

Students would be able to have several mini-presentations and draft reports opportunities before submitting their final ones. As a class, students would do peer evaluations by providing constructive feedbacks.

### **Course Requirement:**

Begin this course with an open mind.

### **Text**

Recommended but not required

ENGINEERING YOUR FUTURE, A Comprehensive Introduction to Engineering By William C. Oakes, PhD  
2009-2010 Edition

A Whole New Engineering, The Coming Revolution in Engineering Education by DAVID R. GOLDBERG and  
Mark SOMERVILLE

### **Grading Policy**

The weights of the whole course work assignments are listed as below:

· <b>Project Proposal</b>	<b>5%</b>
· <b>Pert &amp; Gantt chart</b>	<b>5%</b>
· <b>Theory</b>	<b>5%</b>
· <b>Part status/order</b>	<b>5%</b>
· <b>Draft PPT</b>	<b>10%</b>
· <b>Draft Report</b>	<b>10%</b>
· <b>Final PPT</b>	<b>10%</b>
· <b>Final Report</b>	<b>10%</b>
· <b>Excel-HW</b>	<b>10%</b>
· <b>Written Assignments*</b>	<b>10%</b>
· <b>Quizzes</b>	<b>10%</b>
· <b>Class participation</b>	<b>10%</b>

\*Written Assignments

1. Ted Talk
2. Mentor Interview
3. Ethics
4. Your project experience

Mentor interview

And the overall course grade (letter-grade) will be assigned based on the distribution below:

· 100% to 86%:	Distributed for A+, A, and A-
· 85% to 71%:	Distributed for B+, B, and B-
· 70% to 56%:	Distributed for C+, C, and C-

- 55% to 41%: Distributed for D+, D, and D-
- 40% and below: F

**Excel HWs and written assignments must be submitted on time otherwise up to 50% credit will be given**

**No Makeup quiz will be given**

**Project reports, PPTs and the presentation must be on time. No exception!  
All team members must be present and participate during presentation; otherwise they will lose up to 50% credit.**

**Class participation is mandatory if a guest speaker is scheduled and during class presentation**

**Please refer to the calendar for the days that each team must be present and work on their projects during class time.**

#### **Written Reports**

- 10% Overall content**
- 10% Format**
- 10% Summary/Introduction/Abstract**
- 15% Theory**
- 20% Project management such as Pert, Gantt, budget, Part, task assignment,...**
- 20% Test/Verification/Result/Setup- technique and interoperations**
- 10% Conclusion**
- 5% References/Appendixes**

#### **PPT**

- 20% Overall content**
- 10% Format**
- 30% Presentation (team and individual)**
- 10% Theory**
- 30% Verifications/Outcome**

Please note that the instructor will create a master project folder on dropbox during the first week of class to create access for each team. Students are required to conscientiously upload their work **to** this folder. Students are responsible to check the calendar folder on a regular basis to see if there is a change in the schedule.

**Course Schedule:** Please refer to the calendar folder

April 2016						
◀ Mar 2016						May 2016 ▶
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3 Week 1	4 First day of class	5	6	7	8	9
10 Week 2 Ted Talk writing assignment Due	11 Guest Speaker	12	13 Team Creation Excel-Lecture	14 Excel-Lecture	15	16
17 Week 3 Gantt Chart Due Pert Chart Due Project Proposal PPT and Written Report Due	18 Guest Speaker Project Proposal Presentation	19 Project Proposal Presentation	20 Project Proposal Presentation Excel-Lecture	21 Project Proposal Presentation	22 Project Proposal Presentation	23
24 Week 4 Copies of Purchase order & invoices Due (must be uploaded to the dropbox project folder). Excel HW Due	25 Guest Speaker	26	27 Excel-Quiz 1 Excel-Lecture	28	29	30

May 2016						
◀ Apr 2016						Jun 2016 ▶
Sun	Mon	Tue	Wed	Thu	Fri	Sat
<b>1</b> Week 5 <b>Theory PPT and Written Report Due</b> <b>Excel HW Due</b>	<b>2</b> Guest Speaker Theory Presentation	<b>3</b>	<b>4</b> Theory Presentation	<b>5</b>	<b>6</b>	<b>7</b>
<b>8</b> Week 6 <b>Mentor Interview assignment Due</b>	<b>9</b> Guest Speaker	<b>10</b>	<b>11</b> Excel-Quiz 2	<b>12</b>	<b>13</b>	<b>14</b>
<b>15</b> Week 7 <b>Test Strategy Written Report Due</b>	<b>16</b> Guest Speaker	<b>17</b>	<b>18</b> Excel-Quiz 3 Excel Lecture	<b>19</b>	<b>20</b>	<b>21</b>
<b>22</b> Week 8 <b>Draft PPT and Written Report Due</b>	<b>23</b> Guest Speaker Draft Presentation	<b>24</b>	<b>25</b> Draft Presentation	<b>26</b>	<b>27</b>	<b>28</b>
<b>29</b> Week 9 <b>Excel HW Due</b> <b>Ethics writing assignement Due</b>	<b>30</b> Guest Speaker Draft Presentation	<b>31</b>	<b>Notes:</b>			

June 2016						
◀ May 2016						Jul 2016 ▶
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			<b>1</b> Draft Presentation	<b>2</b>	<b>3</b>	<b>4</b>
<b>5</b> Week 10	<b>6</b> Guest Speaker	<b>7</b>	<b>8</b> Excel-Quiz 4	<b>9</b>	<b>10</b>	<b>11</b>
<b>12</b> Week 11 Final PPT and Written Report Due 3 Universities Paper Due	<b>13</b> Final Presentation	<b>14</b> Final Presentation	<b>15</b> Final Presentation	<b>16</b> Final Presentation Written Report-Hard Copy Due	<b>17</b>	<b>18</b>
<b>19</b> Project Experience Paper Due	<b>20</b>	<b>21</b> Final Exam	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>
<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>Notes:</b>	

July 2016						
◀ Jun 2016						Aug 2016 ▶
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	<b>Notes:</b>					



August 2016						
◀ Jul 2016						Sep 2016 ▶
Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	Notes:		

# September 2016

◀ Aug 2016

Oct 2016 ▶

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	Notes:

More Calendars from WinCalendar.com: [2016 Calendar](#), [2017 Calendar](#), [Web Calendar with Holidays](#)

# October 2016

◀ Sep 2016

Nov 2016 ▶

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	<b>Notes:</b>				

# November 2016

◀ Oct 2016

Dec 2016 ▶

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	Notes:		

December 2016						
◀ Nov 2016						Jan 2017 ▶
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31