

ENGR 100: *Intro to Engineering*

Spring 2014 — Allan Hancock College

THURSDAY 4:00–4:50 pm — Room M-212

1.0 Unit — CRN: 41995

<http://www.ah-engr.com/engr100>

All information subject to change.

Instructor Dominic. J. Dal Bello, Professor

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Voicemail..... 922-6966 x3498

Office Hours (in M-309-A, except as noted)

M.....5:15–6:15 pm

T.....5:30–6:00 pm (M-212 or M-309- A)

W5:15–6:15 pm

Th1:00–3:00pm, 5:00-5:30 pm (M-212)

or by appointment

COURSE PURPOSE	To Enhance Your Success as a STEM (Science, Technology, Engineering, Math) Student.
REQUIRED TEXT	<i>Studying Engineering: A Road Map to Success, 4th edition</i> (brown cover), Raymond Landis, Discovery Press, 2013; ISBN: 978-0-9793487-4-7. Handouts to be distributed in class/posted online.
SOFTWARE	Internet browser (to access web site). Microsoft <i>Word</i> or other word-processing program (required). All homework must be done with a word-processing program. It is highly recommended that you obtain a working knowledge of <i>Word</i> <u>and</u> <i>Excel</i> as you move on in your studies and career (for whatever field you end up in).
ADVISORY	Concurrent in <i>English 514</i> or eligibility for <i>English 101</i> .
DATES	First Day Th., Jan. 30 NO CLASS during first week: Th., Jan. 23. Last Day Th., May 8 Final Period .. Th., May 15, 2:00pm – 4:00pm Spring Break M 3/17– F 3/21

COURSE DESCRIPTION (abridged)

An overview of engineering; also applicable for science, math and architecture majors. Topics include engineering branches and how they relate to science; academic success strategies and planning; employment opportunities and duties; the design process and problem solving.

STUDENT LEARNING OUTCOMES

By the end of the course, students will be able to:

- explain the basic differences between the various engineering branches, and how these branches relate to fields in science.
- describe the engineering design process; i.e., the steps of problem-solving.
- describe academic requirements, attitudes, and skills that lead to success in STEM study of science and of engineering.
- create a schedule of courses for their next 2–4+ academic terms at AHC (and/or transfer institution).
- complete a basic engineering design and a simple engineering report with 3D drawings.

GRADE BREAKDOWN (subject to modification)

Class Activities.....	20%
Book Assignments.....	50%
SEP Project.....	15%
<u>Design Project</u>	<u>15%</u>
Total.....	100%

GRADE SCALE (subject to modification)

A	≥ 90 % of possible points
B	≥ 80 %
C	≥ 70 %
D	≥ 60 %
F	< 60 %

INSTRUCTIONAL ACCOMMODATION

If you are a student with a disability and would like to discuss special academic accommodations, please contact your instructor as soon as possible. You must contact the instructor 1 week before any scheduled exam to ensure appropriate scheduling, etc.

GENERAL GUIDELINES

EMAIL AND THE WEB

- Each student should have an active email account for communication and participation in any online activities. Check your email on a consistent basis.
- By default, your **my.hancockcollege.edu** account will be used for your primary email address. You may wish to set your preferences so that any email is forwarded to your preferred address.
- The course website: **www.ah-engr.com/engr100** has announcements, due dates, solutions, links, etc.
- Some online engineering tools are available at **www.ah-engr.com**.

ATTENDANCE

- ENGR100 is scheduled to meet 15 times for a total of 15 hours. By enrolling in this class, you have contracted with AHC and your instructor to attend lecture, and to study/work at least 2–3 hours outside of class for every lecture hour.
- **Attendance is MANDATORY.**
 - Attendance will be noted at the start of each class meeting (mark the roll sheet, etc.).
 - You have 2 absences (13%) without penalty. For each class you miss beyond 2, your total possible score may be reduced by 5%.
 - If you cannot make this schedule, please contact your instructor as soon as possible.
- If you miss class, it is your responsibility to arrange for other students to turn in your work on time, have notes taken, get announcements, etc. These are only a few reasons why study groups are important.
- You do not need to contact me if you are going to miss class.
- If you have a **dire emergency** (medical, family emergency, etc.) that requires you to **miss more than one class**, please leave a message for me at the phone number/email address listed above.
- If you decide to drop the course, it is your responsibility to withdraw prior to the deadlines published in the AHC *Schedule of Classes*.

COURSE CONDUCT

- Class time is to be used for appropriate in-class activities. Other activities are distracting, disruptive, and/or disrespectful. Such activities may cause you to be asked to leave the room.
- **Turn off all cell-phones, etc.** Do not disturb the class, else you will be asked to leave. If you are expecting an important call, please put the phone on vibrate or silent mode.
- **Do not text in class.**
- Do not read outside materials, do homework (even for this course), etc., during the class period.
- Please display professional attitude and behavior: reliability, respect for and cooperation with colleagues, willingness to work calmly and cordially under difficult conditions, determination to do first-rate work while meeting deadlines, respect for equipment and systems, and appropriate response to constructive criticism.
- Please respect your fellow classmates, guest speakers and instructor. Pay attention to what they have to say. In turn, you should be respected when you wish to speak.
- If you are late, or must leave early, please do so with as little distraction to the class as possible.
- Do not leave trash on tables, in drawers, on the floor, or otherwise dirty the room. You will be penalized if you leave your work area messy.
- Health and Safety Code Regulations prohibit food and drink in the classroom. Please do not eat during class. *Water bottles are OK.*
- AHC Board Policy prohibits children in the classroom.
- Do not: run, jump over tables, crawl under tables, etc.
- AHC Board Policy prohibits auditing. You must be enrolled in the course to attend it.

HOMEWORK AND ASSIGNMENTS

WORKLOAD

- One in-class hour plus 2–3 hours of studying/homework per week (16-week class).

BOOK ASSIGNMENTS

- Read the questions/problems **one week** before they are due (right after class). Some questions ask you to do stuff for the week **before** the assignment is due.
- **All homework (HW) shall be typed** (use a computer/word processor) and submitted on standard 8.5"×11" paper. **Do not fold the paper.**
- **Staple** the packet in the upper left-hand corner if there is more than one page. It is recommended that you purchase a small stapler to carry with you for this and other classes. The instructor will not be responsible for loose sheets.
- Turn in each HW assignment as a separate packet (do not staple two or more HWs together; one HW, one packet).
- Do not email the HW. Turn in a hard-copy.
- **Late Work**
 - Work is due at the start of each class (4:00pm).
 - Late work turned in **within one week of its due date** (by the start of the next class) is subject to an automatic reduction of 25%.
 - Late work turned in **within two weeks of its due date** (by 4:00pm, 2 weeks after it is due) is subject to an automatic reduction of 50%.
 - **NO work may be turned in more than two weeks late.**
 - You have two (2) late-HW "passes".
- Late HW may be turned in at my mailbox in Room **M-309**, the Mathematical Sciences Department office; M-309 **closes at 4:30 pm, Mon.-Th., and 4:00 pm, Friday.**
- Late HW may also be turned in at the Homework Drop Box in **M-208.**
- **All homework must conform to the following standards:**
 - **Name/ENGR100/HW number/due date** in the upper right-hand corner. The problem assignment (**chapter** and **problem numbers**) **centered** at the top of the page. **See Figure 1 on Page 4.**
 - When the book asks for a 200–1,000-word essay (about 10–50 sentences, or one-half to 3 pages), you may do a shorter answer and still receive credit (e.g., instead of 3 pages, 1 page). **See the Note column on the assignment sheet.** However, do not cut too much... writing "3 sentences" instead of "3 pages" is unacceptable.
- **Answer the questions seriously.** They are meant to help you to: think about your goals; determine if you are ready to take on study in a STEM field; and strengthen you academically. While there is not always a right/wrong answer, incomplete/non-serious answers will be marked down, as will failure to following formatting and other instructions, and obvious spelling errors.

OTHER ASSIGNMENTS – PROJECTS

- Other Assignments include (1) the **SEP/www.assist.org** Project and (2) a design project.
- Each project is worth 15%. The details of these projects are distributed separately.

ERRORS IN SCORES

- If a mathematical error in adding your score was made, please submit your homework/exam with a note (on a separate piece of paper) attached on top, indicating the error, so I know why I have the assignment. Corrections will be made as soon as possible.
- If you feel a problem/question was graded incorrectly, please submit your paper/exam with a note (on a separate piece of paper) attached on top justifying why your answer was correct/should be re-graded. The instructor reserves the right to re-grade your entire paper/exam.

HONOR, TRUST AND INTEGRITY

- **All work submitted by a student is to be his/her own work.** While study groups are recommended and encouraged as a learning tool, your solution must be your own.
- If it is apparent that you have copied any material, turned in work not your own, represent another's work as your own, are academically dishonest, or you otherwise cheat, you will be subject to receiving a zero on the assignment, if not an "F" in the course, and such activity reported to the administration.
- **Cheating includes, but is not limited to:**
 - **copying another's work** (e.g., another student's or person's work, an online or printed resource, a solution manual, etc.).
 - **allowing others to copy your work.**
- **Do YOUR best. Seek help BEFORE you find yourself tempted to simply copy another's work.**
- Please refer to "Guidelines for Student Conduct," in the *AHC Catalog*.

HOMWORK FORMAT

GENERAL INSTRUCTIONS

- **Type it. Proof-read it.**
- Use **Spell-check** and check your grammar.
- **Staple your HW before coming to class.**
- Place a **blank line** between each question.
- **DO NOT** simply write “Yes” or “No” for an answer. **DO NOT** simply write a single sentence. **Elaborate/explain your answers.** Answers not deemed “complete” will result in a reduction in your score.
- **Take this opportunity to think seriously about where you have been, and where you are going – your life, your goals, etc.**
- You may find some questions more personal than others, or may cause you to think more deeply about your personal goals and attitudes. **DO NOT** answer “*This is too personal*”, or otherwise attempt to dodge the question. Your instructor will not judge you. Nor will he publish your responses... they are strictly between you and the instructor. The instructor may comment/respond to your response to direct you toward resources or another way to consider the topic.
- **DO NOT just write the answer as if the reader knows what the question is. Assume the reader does not have the textbook.** If a reader cannot figure out what you are writing about, your answer cannot be graded. Your homework answers should stand on their own.
- **Start each response by either (1) quoting the question from the text, or (2) writing your answer in such a way that the reader (grader) can figure out what question you are answering without having to look at the questions themselves.** Let the reader know the context of your answer.
- Do not just insert a table of numbers/answers without explaining what the table means. Introduce the table with words before it is given in the paper, e.g.: “Academic skill sets and their rankings are given in the following table:” or “...Academic skill sets and their rankings are given in Table 1.” Label and title tables as necessary.

CORRECT FORMAT OF RESPONSE

(example using a very simple question/response)

- If the question is: “4. What is the largest state in the United States?” then these three possible responses would be **CORRECT**:

- **Correct** (question retyped/answer given):

4. What is the largest state in the United States?

A: Alaska.

Please separate the question and answer with a line, or use different styles (e.g., **bold** or *italic* for the question; plain text for the answer).

- **Correct** (question is restated in response):

4. The largest state in the United States is Alaska.

- **Correct** (question is restated in response, with additional explanation/justification):

4. The largest state in the United States is Alaska. At over 656,000 square miles, Alaska is over twice as large as Texas.

- The following response is **INCORRECT** – the reader does not know what question is being asked. The question could be: “What is the northernmost state?” “What state is closest to Russia?” Be clear.

4. Alaska.

Staple

Joe Student
ENGR100
HW #1
02/12/14

Ch. 1: 2, 6, 7, 9, 10

Prob. 2 Type the question (or write the answer in such a way that the reader knows what question you are answering. Type the answer here, and continue until you are finished. ...

← Empty line between questions

Prob. 6
If an answer would be best given as a table, try to make one using the table function in Word. Remove the gridlines if necessary.
FYI: part of this syllabus was formatted using tables (see Page 1 and Pages 5 and 6).

Prob. 7
next answer.....

Figure 1. Format of first page of HW assignment. Note the order of information in the upper right hand corner, and the **Chapt: Problems** information centered at the top. **Follow this model.**

Engr. 100: Calendar and Assignments

Spring 2014: THURSDAY, 4:00 pm; CRN 41995

Textbook Problems from: *Studying Engineering*, 4th Ed. (Landis, 2013)

Write answers in your own words. DO NOT copy answers from the textbook, from other books, from online sources, or from other students. **Do not let others copy from you;** you may receive a zero.

- **Look at the questions one week BEFORE they are due** (especially those marked with an asterisk *). You may need to do some work ahead of time. A good habit is to – right after class – read the questions that are due the following week. This will help keep you on track, and give you a preview of the next topic.
- If a web address/link is not working (they change, get broken, etc.), do not stop. Do a web search for the topic.
- If a problem is on the bottom of the page in the textbook, check to make sure it does not continue on the next page.
- If you are **not** an engineering major, you may substitute “Scientist,” “Chemist,” “Biologist,” “Mathematician, etc., for questions that ask about your career path. Adapt as appropriate.
- If your major is currently *undecided*, choose the engineering branch that interests you the most.

Week	Date	Reading (to be done <i>BEFORE</i> class)	Homework Due		
			HW #	HW Questions (Problems) DUE:	Notes
1	1/23	-	First Week: NO CLASS: Martin Luther King Day		
2	1/30	<i>Prologue</i> p.1–7, [~8 pgs]	-	None	-
3	2/6	<i>Prologue</i> p.1–7, [~8 pgs] if you did not already read it. Chapt. 1.1 to 1.4 p.8–26 [~19 pgs]	1	Ch 1: # 3, 4, 9, 17	Make sure that you answer each question so the grader knows what you are writing about without looking at the book. #3: Do not answer just “Yes”/“No”; <u>explain</u> your answers. #4: Use a numbered list in Word. DO NOT write a long paragraph with the items separated with commas or semicolons; how difficult is that to read? #17: Use a table for #17. See course website for a pre-made table in Word , or create your own.
-	2/13	-	NO CLASS: for Washington’s Birthday		
5	2/20	1.5 to 2.4 p.27–59 [~33 pgs]	2	Ch 1: # 21, 22, 24, 26	#21-22: See course website for a pre-made table in Word. #21: Continues on next page in textbook – there are 17 items; rate each item on a scale of 0–10. For your GPA, rate it on a qualitative scale of 0–10, not your actual GPA (i.e., do not perform a calculation to convert GPA from a 4-pt scale to a 10-pt scale). #24: What is the plan? What are things <i>to do</i> ? Be specific ; i.e., what activities/tasks can you do, not just general goals, e.g., “I need to study more”.
6	2/27	2.5 to 2.10 p.60–83 [~24] skim Sec.2.8 (p.67-72)	3	Ch 2: # 1, 3, 6, 14	#3: Write <u>3 good</u> paragraphs, minimum – use <u>your own</u> major (e.g., biology, math, physics, etc.), if not engineering. You three paragraphs should actually end up being about 1 page.

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Calendar and Homework Assignments, *continued*,

Week	Date	Reading (to be done <i>BEFORE</i> class)	Homework Due		
			HW #	HW Questions (Problems) DUE:	
7	3/6	3/6	4	Ch 2: # 11, 16, 21, 24	Yes... I moved problem #11 after problem #14 (in previous homework). #11: ~1 page, at least; expand on the list of rewards on pg. 49; add rewards of your own. #16: <u>Note</u> : answer minimum wage in the U.S., not Calif. #21: Discuss <u>choosing a larger/more general major vs. a smaller/more specialized one</u> (the question is <u>not</u> about choosing your particular major. #24: Write 2 good paragraphs in your own words ; DO NOT just copy from the book or cut-and-paste from an internet site.
8	3/13	3/13	5	Ch 3: # 3, 6, 12, 13, 14	#3: Write 3 paragraphs (not two pages) Also refer to handout on Learning Styles to learn how to compensate for when the teaching style does not match your learning style. TURN IN PRINT-OUT of your Learning Style results from the web-page questionnaire. #12: Your average score = (total points)/16 = a number between -2.0 and +2.0 (“zero” is in the middle). Write results as a decimal number to two digits, e.g., 0.38, 1.06, -0.19, etc. The final answer is the average value to two digits. #14: <u>List</u> the two skills that need work; what is “the plan” to work on them? Be specific ; i.e., what activities/things can you do to improve the skills that need work.
8	3/20	3/20	SPRING BREAK		
9	3/27	3/27	6	Ch 4: # 13, 17, 18	#18: List <u>at least</u> 3 locations to get <u>tutoring</u> help at AHC. Where are they located?
10	4/3	4/3	7	Ch 5: # 5*, 6, 8	#5: Try the schedule for a week and report; don’t worry if things don’t end up being followed perfectly; the schedule is a guide; it’s your schedule – you can modify it as needed. #6: Be <i>specific</i> on things to do; i.e., “Study” is too general; “Review for Math Quiz” is good. #8: 100 hrs or “percent of time”, what percent time would you study alone, in a group; try #9 on your own.
11	4/10	4/10	8	Ch 6: # 3, 8, 12, 20	#3: “Why did you choose <u>to do</u> the behavior?”, not “why did you choose to write it in the answer?” #8: Write at least two paragraphs to answer this question. #20: If you wish, go on to #20 to try to get a better MBTI category (it may surprise you), but DO NOT buy any online services. ☺
12	4/17	4/17	9	Ch 6: # 22, 25, 38*, 39	#38: Try block studying – report on result.

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Calendar and Homework Assignments, *continued*,

Week	Date	Reading (to be done <i>BEFORE</i> class)	Homework Due		
			HW #		
13	4/24	-		SEP/ASSIST PROJECT DUE	-
14	5/1	7.1 to 7.5 [~31] p.211–241	10	Ch 7: # 12, 17 Look at #20; consider getting a summer internship or job; do not turn in #20.	#17: Type out answers to interview questions ; one word answers are not very good answers for interviews; elaborate on your answer for your “weakness” (how do you deal with it). Practice answers on your own; if you want, practice with a friend as implied in Prob. #16.
15	5/8	8.1 to 8.8 p. 246–272 [27]	11	Ch 8: # 3, 12 + GPA Handout (Prob. 11 is part of GPA handout) SEP Returned	#3: Type out the wording of each ABET criteria (a)-(k); see textbook pg. 304. Then rank the criteria in <u>your</u> order. Keep the correct letter with each item. A table (2 columns by 11 rows, not including header row) would be a useful way to organize the answer. The first column is the rank 1, 2, 3...11, and the second column lists the criteria (with their original letters), in order of how <u>you</u> rank them. explain why you ranked your #1 first. #12: Do GPA Handout first.
16	5/15	Final Meeting Period 2 pm – 4 pm.		PUZZLE CUBE Assignment Due	-

Note: When writing *answers and definitions*

1. **DO NOT just cut-and-paste** from a website; or copy from a dictionary.
2. **Use your own vocabulary** to define words – do not just use the words the dictionary uses.
3. **DO NOT use the word in its own definition** (or words with the same root). Unfortunately, dictionaries traditionally do this – because they need to save space. For example, www.merriam-webster.com gives the definition for *intuitive* as: ***intuitive* : known or perceived by *intuition***

This definition uses the word that it is trying to define. **DO NOT** do this; it will be marked wrong. If I did not know what *intuitive* means, I likely do not know what *intuition* means.

The End.

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