TEXAS A&M UNIVERSITY

ENGR 112 - Foundations of Engineering II

COURSE SYLLABUS

Course Information

Foundations of Engineering II - ENGR 112
Spring 2016

Course Instructor

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Ocean Engineering Department

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Teaching Assistant

Rachael E. Ivancic

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Class Schedule

- **Lecture:** Monday, Wednesday 08:00AM - 08:50AM at PMEC 151
- **Laboratory:**

Section 401:	Tuesday, 08:00AM-09:50AM, at PMEC 143
Section 402:	Tuesday, 02:00PM-03:50PM, at PMEC 158
Section 403:	Thursday, 08:00AM-09:50AM, at PMEC 143
Section 404:	Thursday, 02:00PM-03:50PM, at PMEC 158

Office Hours

Monday: 03:00PM-04:00PM,
Wednesday: 03:00PM-04:00PM,
Friday: 03:00PM-04:00PM.
And by appointments.

Grading

Assignments	20%
Midterm Exam	25%
Project I	5%
Project II	10%
Project III	10%
Final Exam	30%

Grading Scale

A $\geq 90\%$
B $\geq 75\%$
C $\geq 60\%$
D $\geq 50\%$
F $< 50\%$

Textbooks

- Camba, Jorge Dorribo and Otey, Jeffrey and Whiteacre, Matthew (2012) "Foundations of Graphics for Engineers," Pearson Learning Solutions.
- Shih, Randy H. (2012), "AutoCAD 2012 Tutorial, Second Level: 3D modeling," SDC Publication, ISBN: 978-1-58503-640-0.
- Chapra, Steven C. (2011), "Applied Numerical Methods with MATLAB for Engineers and Scientists,", McGraw-Hill Science/Engineering/Math.

Course Communications	Course-related material, along with class communications, are held on *eCampus* through *Howdy* portal. Students are expected to check and use the course webpage on regular basis.
Course Description	Continuation of ENGR 111. Topics include, depending on the major: emphasis on computer applications and programming and solids modeling using CAD tools or other software; fundamentals of engineering science. Advanced graphic skills.
Learning Outcomes	The course in intended to familiarize students with fundamental engineering competencies, and to enhance their empirical and quantitative skills, and to assist students to integrate multiple disciplines to construct innovative engineering solutions. In this course, students should gain fundamental knowledge of engineering graphics, three dimensional CAD drawing, MATLAB m-files, and should become familiar with utilizing computer programs in solving engineering problems. Upon completion of this course, students should be able to formulate basic practical engineering problems and use computer programs for solutions, and to present results in a systematic manner. This course supports the ABET criteria b, d, g and k, as following, and criteria 1 and 7: b. An ability to design and conduct experiments as well as to analyze and interpret data; d. An ability to function on multidisciplinary teams; g. An ability to communicate effectively; k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
Prerequisites	ENGR 111, MATH 151
Attendance and Make-up Polices	Information concerning absences is contained in the University Student Rules Section 7 `http://www.tamug.edu/stulife/Academic%20Rules/Rule%207.pdf`. The University views class attendance as an individual student responsibility. All students are expected to attend class and to complete all assignments. Late arrivals count as absences.Please consult the University Student Rules for reasons for excused absences, detailed procedures and deadlines as well as student grievance procedures (Part III, Section 45). If the absence is excused, the student will be provided an opportunity to make up any quiz, exam or other work that contributes to the final grade. The evaluation method will be decided by the instructor. The evaluation date is agreed upon by the student and instructor.
Academic Integrity	*An Aggie does not lie, cheat or steal, or tolerate those who do.* For additional information visit: `http://www.tamug.edu/HonorSystem`.
Americans with Disabilities Act (ADA)	The Americans with Disabilities Act (ADA) is a federal non-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this law requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Counseling Office, Seibel Student Center, or call (409)740-4587. For additional information visit: `http://www.tamug.edu/counsel/Disabilities.html`.

TENTATIVE SCHEDULE: LECTURES

MONDAY		WEDNESDAY	
Jan 18th	**1**	20th Course Introduction	**2**
25th AutoCAD: Isometrics	**3**	27th Eng. Graphics: Isometrics	**4**
Feb 1st AutoCAD: 3D Wireframe Modeling	**5**	3rd Eng. Graphics: Sections	**6**
8th Literature Review Resources	**7**	10th **Midterm Review**	**8**
15th **Midterm**	**9**	17th Introduction to Programming	**10**
22nd Flowcharts	**11**	24th MATLAB: m-files	**12**
29th Decisions	**13**	Mar 2nd Decisions	**14**
7th *While* Loops	**15**	9th *While* Loops	**16**
14th **SPRING BREAK**	**17**	16th **SPRING BREAK**	**18**
21st *For* Loops	**19**	23rd Arrays and Matrices	**20**
28th Arrays and Matrices	**21**	30th Plotting	**22**
Apr 4th Project II: Water Waves	**23**	6th Plotting	**24**
11th Numerical Integration	**25**	13th Project III: Wave Loads	**26**
18th Probability and Statistics	**27**	20th Probability and Statistics	**28**
25th Probability and Statistics	**29**	27th **Final Exam Review**	**30**
May 2nd Redefined Day: FRIDAY	**31**	4th	**32**

Written Midterm Exam: Monday, February 15, 2016, 08:00AM to 08:50AM at PMEC 151.
Final Exam: Monday, May 09, 2016, 8:00AM to 10:00AM at PMEC 151.

TENTATIVE SCHEDULE: LABORATORY

TUESDAY	THURSDAY
Jan 19th **1** AutoCAD: 2D Review-Assignment	21st **2** AutoCAD: 2D Review-Assignment
26th **3** AutoCAD: Isometric Drawing	28th **4** AutoCAD: Isometric Drawing
Feb 2nd **5** AutoCAD: 3D Wireframe	4th **6** AutoCAD: 3D Wireframe
9th **7** Paper Review Selections	11th **8** Paper Review Selections
16th **9** **AutoCAD: Midterm Exam**	18th **10** **AutoCAD: Midterm Exam**
23rd **11** Paper Review: Presentations	25th **12** Paper Review: Presentations
Mar 1st **13** MATLAB Programming	3rd **14** MATLAB Programming
8th **15** MATLAB Programming	10th **16** MATLAB Programming
15th **17** **SPRING BREAK**	17th **18** **SPRING BREAK**
22nd **19** MATLAB Programming	24th **20** MATLAB Programming
29th **21** MATLAB Programming	31st **22** MATLAB Programming
Apr 5th **23** Wave Laboratory Project	7th **24** Wave Laboratory Project
12th **25** Project II Revision	14th **26** Project II Revision
19th **27** Project III Revision	21st **28** Project III Revision
26th **29** **Final Exam Review**	28th **30** **Final Exam Review**
May 3rd **31** Reading Day; No Class	5th **32**

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