



ENGR 112 - Foundations of Engineering II

COURSE SYLLABUS

COURSE INFORMATION **Foundations of Engineering II - ENGR 112
Fall 2014**

COURSE INSTRUCTOR Masoud Hayatdavoodi, Ph.D. *Office:* MERC 117
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CLASS SCHEDULE

- **Lecture:** Monday, 08:00AM - 08:50AM at Kirkham Hall 207
- **Laboratory:** Tuesday, 4:00PM - 6:50PM at Powell Marine Engineering Comp 143.

OFFICE HOURS Monday: 01:00PM-03:00PM,
Tuesday: 01:00PM-03:00PM,
Wednesday: 01:00PM-03:00PM,
And by appointment.

GRADING Assignments 20%
Midterm Exam I 20%
Midterm Exam II 10%
Project 20%
Final Exam 30%

GRADING SCALE A ≥ 90%
B ≥ 75%
C ≥ 60%
D ≥ 50%
F < 50%

TEXTBOOKS

- Chapra, Steven C. (2011), "Applied Numerical Methods with MATLAB for Engineers and Scientists," McGraw-Hill Science/Engineering/Math.
- Wohlers, Terry T. (2010), "Applying AutoCAD 2011," McGraw-Hill Science/Engineering/Math.
- Camba, Jorge Dorribo and Otey, Jeffrey and Whiteacre, Matthew (2012) "Foundations of Graphics for Engineers," Pearson Learning Solutions.

COURSE COMMUNICATIONS	Course-related material, along with class communications, are held on <i>eCampus</i> through <i>Howdy</i> 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	<p>The course is 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 MATLAB and FORTRAN programming 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 the results in a systematic manner. This course supports the ABET criteria b, d, g and k, as following, and criteria 1 and 7:</p> <ul style="list-style-type: none">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	<p>Information concerning absences is contained in the University Student Rules Section 7 http://www.tamug.edu/stulife/Academic%20Rules/Rule%207.pdf.</p> <p>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.</p>
ACADEMIC INTEGRITY	<p><i>An Aggie does not lie, cheat or steal, or tolerate those who do.</i></p> <p>For additional information visit: http://www.tamug.edu/HonorSystem.</p>
AMERICANS WITH DISABILITIES ACT (ADA)	<p>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.</p>

TENTATIVE
SCHEDULE

MONDAY	TUESDAY
Sep 1st Course Introduction 1	2nd AutoCAD Introduction/Review 2
8th 3-D Drawing: Sections 3	9th 3-D Drafting & CAD Drawing 4
15th 3-D Drawing: Sections 5	16th 3-D Drafting & CAD Drawing 6
22nd 3-D Drawing: Oblique Views 7	23rd 3-D Drafting & CAD Drawing 8
29th 3-D Drawing: Oblique Views 9	30th 3-D Drafting & CAD Drawing 10
Oct 6th 3-D Drawing: Isometrics 11	7th 3-D Drafting & CAD Drawing 12
13th Midterm Review 13	14th Midterm Exam I 14
20th Linear Algebra 15	21st MATLAB m-files 16
27th Plotting 17	28th MATLAB Loops 18
Nov 3rd Arrays and Matrices 19	4th MATLAB Matrix Operation 20
10th Statistics & Midterm Review 21	11th Midterm Exam II 22
17th Introduction to FORTRAN 23	18th Wave Tank Experiment 24
24th Input-Output in FORTRAN 25	25th FORTRAN Programming & Project Revision 26
Dec 1st Loops in FORTRAN 27	2nd FORTRAN Programming 28
8th Final Exam Review 29	9th Reading Day; No Class 30

Final Exam: Tuesday, December 16, 2014, 8:00AM to 10:00AM