TEXAS A&M UNIVERSITY GALVESTON CAMPUS.

ENGR 112 - Foundations of Engineering II *COURSE SYLLABUS*

COURSE INFORMATION	**Foundations of Engineering II - ENGR 112** **Spring 2015**

COURSE INSTRUCTOR

Masoud Hayatdavoodi, Ph.D.
Instructional Assistant Professor
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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:**
  Tuesday: 08:00AM-09:50AM, at PMEC 143
  Tuesday: 02:00PM-03:50PM, at PMEC 158
  Thursday: 08:00AM-09:50AM, at PMEC 143
  Thursday: 02:00PM-03:50PM, at PMEC 158

OFFICE HOURS

Monday: 03:00PM-05:00PM,
Wednesday: 03:00PM-05:00PM,
Friday: 03:00PM-05:00PM.

And by appointments.

GRADING

Assignments	20%
Midterm Exam	30%
Project	20%
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 19th	**1**	21st Course Introduction	**2**
26th Eng. Graphics Review: Orthographic Projection	**3**	28th Eng. Graphics: Isometrics	**4**
Feb 2nd Eng. Graphics: Oblique Views	**5**	4th Eng. Graphics: Dimensioning	**6**
9th Literature Review Resources	**7**	11th Eng. Graphics: Sections	**8**
16th Eng. Graphics: Sections	**9**	18th Eng. Graphics: Sections	**10**
23rd **Midterm Review**	**11**	25th Introduction to Programming	**12**
Mar 2nd Programming: Flowcharts	**13**	4th Programming: MATLAB Language	**14**
9th MATLAB: m-files	**15**	11th Input-Output	**16**
16th **SPRING BREAK**	**17**	18th **SPRING BREAK**	**18**
23rd Decisions	**19**	25th Decisions	**20**
30th Loops	**21**	Apr 1st Loops	**22**
6th Plotting	**23**	8th Project Review	**24**
13th Arrays and Matrices	**25**	15th Arrays and Matrices	**26**
20th Functions	**27**	22nd Errors	**28**
27th MATLAB: Data Analysis	**29**	29th MATLAB: Applications	**30**
May 4th **Final Exam Review**	**31**	6th Reading Day; No Class	**32**

Midterm Exam: Friday, February 27, 2015, 04:00PM to 05:30PM at KIRK 206.
Final Exam: Monday, May 11, 2015, 8:00AM to 10:00AM.

TENTATIVE
SCHEDULE:
LABORATORY

Tuesday		Thursday	
Jan 20th	**1**	22nd	**2**
AutoCAD: 2D Review-Assignment		AutoCAD: 2D Review-Assignment	
27th	**3**	29th	**4**
AutoCAD: 3D Environment - Wireframe Modeling		AutoCAD: 3D Environment - Wireframe Modeling	
Feb 3rd	**5**	5th	**6**
AutoCAD: Isometric Drawing		AutoCAD: Isometric Drawing	
10th	**7**	12th	**8**
AutoCAD: 3D Surface Modeling - Paper Review		AutoCAD: 3D Surface Modeling - Paper Review	
17th	**9**	19th	**10**
AutoCAD: 3D Solid Modeling		AutoCAD: 3D Solid Modeling	
24th	**11**	26th	**12**
AutoCAD: Midterm Exam		**AutoCAD: Midterm Exam**	
Mar 3rd	**13**	5th	**14**
Paper Review: Presentations		Paper Review: Presentations	
10th	**15**	12th	**16**
MATLAB Programming		MATLAB Programming	
17th	**17**	19th	**18**
SPRING BREAK		**SPRING BREAK**	
24th	**19**	26th	**20**
MATLAB Programming		MATLAB Programming	
31st	**21**	Apr 2nd	**22**
MATLAB Programming		MATLAB Programming	
7th	**23**	9th	**24**
MATLAB Programming		MATLAB Programming	
14th	**25**	16th	**26**
Wave Laboratory Project		Wave Laboratory Project	
21st	**27**	23rd	**28**
Galveston Harbor		Galveston Harbor	
28th	**29**	30th	**30**
MATLAB Programming		MATLAB Programming	
May 5th	**31**	7th	**32**
Redefined Day (Friday)		Reading Day; No Class	

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