SYLLABUS
MENG 3212 : Topics in Engineering Fundamentals
{Required Course}
Spring 2019

Instructor: Dr. J. Brink
Office No.: MY 137
Telephone: 397-4589
E-mail: jan.brink@msutexas.edu
Office Hours: TR: 9-11 am and 1-4 pm
Course Schedule: Monday 14.00-15.50 pm
Lecture McCoy Hall 136

CATALOG DESCRIPTION:
Review of topics covered on the general session of the Fundamentals of Engineering exam
COURSE PREREQUISITES
Must be in your Senior Year of Engineering. You must have taken all mathematics classes, physics classes and freshman, sophomore and junior engineering classes.
OTHER PREREQUISITES
Basic computer skills, hand calculator
REQUIRED TEXT BOOKS
(1). FE Mechanical Review Manual by Michael R. Lindeburg from Professional Publications, Inc., ISBN #: 978-1-59126-441-5 and
(2). NCEES Reference Handbook 9.3 version for Computer Based Testing ISBN #: 978-1-932613-67-4. You can get this book for free on line from the NCEES website.
You will have to get your own books from for example Amazon. Our bookstore will not sell the books.
TOPICS COVERED
Engineering Economics
Statics
Dynamics, Kinematics, and Vibrations
Mechanics of Materials
Material Properties and Processing
Fluid Mechanics
Thermodynamics
Heat Transfer
Measurements, Instrumentation, Controls
Mechanical Design and Analysis
Computational Tools
Probability and Statistics
Ethics and Professional Practice
Mathematics
Electricity and Magnetism
All fifteen topics as tested on the FE Mechanical Engineering Exam

Outcome Related Course Learning Objectives	3 a	3 b	3 c	3 d	3 e	3 f	3 g	3 h	3 i	3 j	3 k
Student will be competent in working Mathematics problems related to Analytic Geometry, Calculus, Linear Algebra, Vector Analysis, Differential Equations and Numerical Methods	x		x								
Student will be able to work probability and statistics problems	x		x								
Student will be able to work computational tool problems	x		x								
Student will be able to solve ethics and professional problems	x		x								
Student will be able to solve engineering economics problems	x		x								
Student will be able to work electricity and magnetism problems	x		x								
Student will be able to solve statics problems	x		x								
Student will be able to solve dynamics, kinematics, and vibrations problems	x		x								
Student will be able to solve mechanics of materials problems	x		x								
Student will be able to solve materials science and processing problems	x		x								
Student will be able to solve thermodynamics problems	x		x								
Student will be able to solve heat transfer problems	x		x								
Student will be able to solve mechanical design and analysis problems	x		x								
Student will be able to solve measurements, instrumentation and control problems	x		x								

3a: an ability to apply knowledge of mathematics, science, and engineering
3b: an ability to design and conduct experiments, as well as to analyze and interpret data
3c: an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
3d: an ability to function on multidisciplinary teams
3e: an ability to identify, formulate, and solve engineering problems
3f: an understanding of professional and ethical responsibility
3g: an ability to communicate effectively
3h: the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
3i: a recognition of the need for, and an ability to engage in life-long learning
3j: a knowledge of contemporary issues
3k: an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

COURSE ORGANIZATION AND ASSESSMENT

- Lecture Format
  Review sessions will be held by different engineering professors in 15 different topics. These topics will be on the Fundamentals of Engineering exam for mechanical engineering.

- Class Attendance
  You are expected to attend class and are responsible for notes and study material. Attendance will be taken at random times during lecture and lab. You are only allowed to sign yourself in. (Ethics)

- Student Attitude
  Once class starts, the use of cell phone and/or pager, reading a newspaper, conducting private discussions, using the computer (unless asked by your instructor), working on anything that is not directly related to the course, making derogatory remarks about a classmate or your instructor will not be accepted and may result in your dismissal from the class. You can come see the instructor in his office for any concerns you have regarding the class.

- Exam Make-up
  You are expected to take the exams on the scheduled date and time it is given. However, if for some acceptable reason you are not able to do so, then you must inform the instructor in advance. The instructor will then decide whether you will be allowed to take a make-up exam, depending on the validity of your excuse. No exceptions will be made, unless an official written statement is given by a physician or attorney.

- Exam Content
  Most of the exam problems are based on the material covered and have a similar degree of difficulty as those done in class.

- Evaluation Method
  Your performance will be tested before midterm by one exam (one hour) that will cover five different topics and one final exam (two hours) given during the final exam period that covers ten different topics.

- Course Grade
  The final grade for the course will be based on the exam scores and your attendance and attitude. The overall average score (X) for the course is determined as follows:
  X =
  0.30 x (exam1) + 0.60 x (exam 2) +
  0.10 x (attitude/participation/attendance)

  Note: You will be given a course grade of an A if you pass the FE exam. You must provide me with official written proof by May 5, 2019 before 5 pm.

The final letter grade for the course is based on the value of X and is determined from to the following grade levels: TABLE Grading Ranges and Letter Grades

Value of X (in %)	Letter Grade
89.5-100	A
79.5-89.4	B
69.5-79.4	C
59.5-69.4	D
< 59.4	F

GENERAL GUIDELINES
- This course is a preparation course for the FE Mechanical Engineering Exam. Do expect to have to do a lot of self study. This course will help you prepare for this FE exam, but it will not be able to cover all topics as are listed in the study manual.

- Use a systematic approach to solve problems.
- Although you are strongly encouraged to study in group, you must work individually when you solve problems otherwise you will not do well on the exams, and the real FE exam.

GENERAL EDUCATION STATEMENT
Students in this course must demonstrate their competency in oral and written communication through exams. They must also demonstrate their ability to use the English language.

ACADEMIC INTEGRITY POLICY
Scholastic dishonesty will not be tolerated and will be prosecuted to the fullest extent. You are expected to have read and understood the current issue of the

student handbook regarding student responsibilities & rights, and the intellectual property policy information about procedures and what constitutes acceptable on-campus behavior.

LICENSED HANDGUN HOLDERS

Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information regarding campus carry, please refer to the University's webpage at http://mwsu.edu/campus-carry/rules-policies.

DISCLAIMER STATEMENT
Information contained in this syllabus, other than grading, and attendance policies, may be subject to change with advance notice, as deemed appropriate by the instructor.

The Final Exam will be held on Wednesday, May 8th from 5.45-7.45 pm.