MECH 3351

Design of Mechanical Systems

Spring 2016

Instructor: Terry V. Baughn Phone: 972 883-3584

Office: ECSN 3.908 Email: tvbaughn@utdallas.edu

Classroom: ECSS 2.412 Class Time: Mon & Wed 8:30 – 9:45 AM

Office Hours: Monday 1:00 to 2:00 PM, Other hours by appointment

Teaching Assistants

Grading

Satish Krishnasamy Radha, Office ECSN 2.124

Phone: 214 518-1352 Email: sxk146630@utdallas.edu

Hours: Monday and Tuesday 4-5PM or by appointment

Grade Management (eLearning)

Sumair F. Sunny, Office: ECSN 2.124

Phone: 832 641-3976 Email: sfs150030@utdallas.edu

Hours Tuesday 4-5 PM or by appointment

Text Book: Budynas, R. G. and J. Keith Nisbett, Shigley's Mechanical Engineering Design, 10th Ed.

Course Pre-requisites

Prerequisite: MECH 2320 and ENGR 3300. Pre or Co-requisite: MECH 3350

Grading

Home Work	10%
Quizzes	15%
Exam 1	25%
Exam 2	25%
Team Project	25%
Total	100%

Course Description

The course will focus on the application of strength of materials techniques along with industry standards and codes and use of statistics to the design of machine components. The course will also include a team project including design, building and testing a mechanical system of components.

Learning Objectives

- Develop the ability to analyze mechanical components and mechanical systems. **(a,c)**
- Learn how to design important mechanical components such as shafts, bearings, gears and others. **(c,e)**
- Work in teams to interpret and solve an open-ended design problem involving mechanical components and/ or systems**.(c,e,f,g,j,k)**

Syllabus

Chapter	Units
1: Introduction to Mechanical Engineering Design ……	1
2 Materials……	3
3 Load and Stress Analysis……..	3
4 Deflection and Stiffness …….....	3
5 Failures Resulting from Static Loading……..	2
6 Fatigue Failure Resulting from Variable Loading……	2
7 Shafts and Shaft Components …….....	3
8 Screws, Fasteners & the Design of Nonpermanent Joints……..	3
9 Welding, Bonding and the Design of Permanent Joints …….	3
10 Mechanical Springs……..	3
14 Spur and Helical Gears ……	3
Total Units……	**29**

One unit = 75 minutes

Home work

Home work is generally due every one to two weeks and typically due one week after assigned. If you have to be absent on the due date, you need to place the submission in the collection folder in front of my office **before** the due date.

Academic Integrity

Academic integrity is a serious matter. Students can discuss assignments but are expected to complete their individual work. Direct copying from someone else or from a solution manual is not permitted. Any violation of the academic conduct policy will be dealt with according to the University Policy.

Grading Policy

Grade appeals shall be submitted within *one week* of the return date for the assignment or exams and *must be* ***submitted in writing***. The reason for requesting a re-grade must be clearly stated. Requests submitted later than one week after the return date or not in writing will not be processed.

Course Policies

Make-up exams

No makeup exams will be given with the exception of a serious emergency.

Late Work

Late work will be graded, but not included in your composite grade point.

Class Attendance

Students are expected to attend each class.

Cell phone/electronic device usage

Cell phone and any other type of electronic devices for communication must be turned off during the class. A computer or tablet can ONLY be used for the purpose of taking notes.

Email usage

Please note that all email communication with regard to the course must be handled through your UT Dallas email address according to University policy.

UT Dallas Syllabus Policies and Procedures

> The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.
>
> Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.

Prepared by: Terry V Baughn, January 12, 2016: revised 01/14/16