

Course Title: Machine Design II
Course Prefix: MCEG

Course No.: 4043

Section No.: P02

Department of Mechanical Engineering | College of Engineering

Instructor Name: Dr. Jianren Zhou
Office Location: C. L. Wilson 102D
Office Phone: 936-261-9960
Fax: 936-261-9969
Email Address: jizhou@pvamu.edu
U.S. Postal Service Address: Prairie View A&M University
P.O. Box 519
Mail Stop 2525
Prairie View, TX 77446

Office Hours: Posted
Virtual Office Hours: None

Course Location: New Electrical Engineering Bldg 137
Class Meeting Days & Times: 8:00 – 9:50 Monday and Wednesday

Catalog Description: This is a design course featuring a design project using strength of materials, kinematics of machines, machine element design (e.g. gears and shafts), and CAD.

Prerequisites: MCEG 3043 Machine Design I
Co-requisites: MCEG 3053 Kinematics Design and Analysis

Required Text: Budynas, R. G. and Nisbett, J. K., Shigley's Mechanical Engineering Design, 10th edition, McGraw-Hill Book Company, ISBN 9780073398204.

Recommended Text/Readings: Provided in Class

Access to Learning Resources: PVAMU Library:
phone: (936) 261-1500;
web: <http://www.tamu.edu/pvamu/library/>
University Bookstore:
phone: (936) 261-1990;
web: <https://www.bkstr.com/Home/10001-10734-1?demoKey=d>

Course Goals or Overview:

This course is designed to introduce seniors in mechanical engineering to the process of mechanical design. The student will design mechanical systems using concepts developed in design of machine elements, engineering graphics and other related courses.

Course Outcomes/Objectives

At the end of this course, the student will

- 1 Master mechanical systems design skills;
- 2 Successfully analyze mechanical engineering systems;
- 3 Design and analyze various types of machine elements;
- 4 Complete a mechanical system design project.

Course Requirements & Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.

Assignment and Quizzes – homework and quizzes on machine design

Design Project – a design project on mechanical design

Midterm Exam – the midterm test

Final Exam – the final exam

Grading Matrix (*points will vary according to instructor's grading system*)

Instrument	Value (points or percentages)
Attendance & Participation	10%
Homework Assignments	10%
Quizzes	20%
Design projects	20%
Midterm exam	20%
Final exam	20%

Grade Determination:

A = 90 – 100pts;

B = 80 – 89pts;

C = 70– 79pts;

D = 60 – 69pts;

F = 59 pts and below

Course Procedures

Formatting Documents:

Microsoft Word is the standard word processing tool used at PVAMU. If you're using other word processors, be sure to use the "save as" tool and save the document in either the Microsoft Word, Rich-Text, or plain text format.

Exam Policy

Exams should be taken as scheduled. No makeup examinations will be allowed except under documented emergencies (See Student Handbook).

Homework assignments should be submitted on the due date listed on the cover sheet.

Taskstream

Taskstream is a tool that Prairie View A&M University uses for assessment purposes. At least one of your assignments is **REQUIRED** to be submitted as an "artifact," an item of coursework that serves as evidence that course objectives are met. More information will be provided during the semester, but for general information, you can visit Taskstream via the link in eCourses.

16 WEEK CALENDAR

Week One - Three:

GEARING - GENERAL

Chapter: 13
Assignment (s): 1,2,5,6,8,15,16,31,33,34,2 additional problems

Week Four - Five:

SPUR AND HELICAL GEARS

Chapter: 14
Assignment (s): 2,6,11,13

Week Six - Seven:

FAILURE RESULTING FROM VARIABLE LOADING

Chapter: 6
Assignment (s): 2,3,5,7,10,12,17,20,25

Week Eight - Nine:

SHAFTS AND SHAFT COMPONENTS

Chapter: 7
Assignment (s): 1, 2, 23

Week Eight:

MIDTERM EXAM

Week Nine:

DESIGN PROJECT ILLUSTRATION

Chapter: 18

Week Ten - Eleven:

BEARINGS

Chapter (s): 11,12
Assignment (s):

Week Twelve - Thirteen:

DESIGN PROJECT PRESENTATIONS

Week Fourteen - Fifteen:

CLUTCHES, BRAKES, COUPLINGS, AND FLYWHEELS

Chapter: 16

Week Fifteen:

FLEXIBLE MECHANICAL ELEMENTS

Chapter: 17

Week Sixteen

FINAL EXAM

University Rules and Procedures

Disability statement (See Student Handbook):

Students with disabilities, including learning disabilities, who wish to request accommodations in class should register with the Services for Students with Disabilities (SSD) early in the semester so that appropriate arrangements may be made. In accordance with federal laws, a student requesting special accommodations must provide documentation of their disability to the SSD coordinator.

Academic misconduct (See Student Handbook):

You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct. Students who engage in academic misconduct are subject to university disciplinary procedures.

Forms of academic dishonesty:

1. Cheating: deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered; giving or receiving aid unauthorized by the instructor on assignments or examinations.
2. Academic misconduct: tampering with grades or taking part in obtaining or distributing any part of a scheduled test.
3. Fabrication: use of invented information or falsified research.
4. Plagiarism: unacknowledged quotation and/or paraphrase of someone else's words, ideas, or data as one's own in work submitted for credit. Failure to identify information or essays from the Internet and submitting them as one's own work also constitutes plagiarism.

Nonacademic misconduct (See Student Handbook)

The university respects the rights of instructors to teach and students to learn. Maintenance of these rights requires campus conditions that do not impede their exercise. Campus behavior that interferes with either (1) the instructor's ability to conduct the class, (2) the inability of other students to profit from the instructional program, or (3) campus behavior that interferes with the rights of others will not be tolerated. An individual engaging in such disruptive behavior may be subject to disciplinary action. Such incidents will be adjudicated by the Dean of Students under nonacademic procedures.

Sexual misconduct (See Student Handbook):

Sexual harassment of students and employers at Prairie View A&M University is unacceptable and will not be tolerated. Any member of the university community violating this policy will be subject to disciplinary action.

Attendance Policy:

Prairie View A&M University requires regular class attendance. Excessive absences will result in lowered grades. Excessive absenteeism, whether excused or unexcused, may result in a student's course grade being reduced or in assignment of a grade of "F". Absences are accumulated beginning with the first day of class.

Student Academic Appeals Process

Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.

Technical Considerations for Online and Web-Assist Courses

Minimum Recommended Hardware and Software:

- Intel PC or Laptop with Windows 7; Mac with OS X; Smartphone or iPad/Tablet with Wi-Fi
- High speed Internet access
- 8 GB Memory
- Hard drive with 320 GB storage space
- 15" monitor, 800x600, color or 16 bit
- Sound card w/speakers; Microphone and recording software; Keyboard & mouse
- Most current version of Google Chrome, Safari, Internet Explorer or Firefox

Note: Be sure to enable Java & pop-ups in the Web browser preferences

Participants should have a basic proficiency of the following computer skills:

- Sending and receiving email
- A working knowledge of the Internet
- Proficiency in Microsoft Word (or a program convertible to Word)
- Proficiency in the Acrobat PDF Reader
- Basic knowledge of Windows or Mac O.S.

Netiquette (online etiquette): students are expected to participate in all discussions and virtual classroom chats when directed to do so. Students are to be respectful and courteous to others in the discussions. Foul or abusive language will not be tolerated. When referring to information from books, websites or articles, please use APA standards to reference sources.

Technical Support: Students should call the Prairie View A&M University Helpdesk at 936-261-2525 for technical issues with accessing your online course. The helpdesk is available 24 hours a day/7 days a week. For other technical questions regarding your online course, call the Office of Distance Learning at 936-261-3290 or 936-261-3282

Submission of Assignments:

Assignments, Papers, Exercises, and Projects will distributed and submitted through your online course. Directions for accessing your online course will be provided. Additional assistance can be obtained from the Office of Distance Learning.

Discussion Requirement:

Because this is an online course, there will be no required face to face meetings on campus. However, we will participate in conversations about the readings, lectures, materials, and other aspects of the course in a true seminar fashion. We will accomplish this by use of the discussion board.

Students are required to log-on to the course website often to participate in discussion. It is strongly advised that you check the discussion area daily to keep abreast of discussions. When a topic is posted, everyone is required to participate. The exact use of discussion will be determined by the instructor.

It is strongly suggested that students type their discussion postings in a word processing application and save it to their PC or a removable drive before posting to the discussion board. This is important for two reasons: 1) If for some reason your discussion responses are lost in your online course, you will have another copy; 2) Grammatical errors can be greatly minimized by the use of the spell-and-grammar check functions in word processing applications. Once the post(s) have been typed and corrected in the word processing application, it should be copied and pasted to the discussion board.

	IMPORTANT DATES
Aug 23 - Aug 24	Regular Registration
27-Aug	First Class Day
3-Sep	Labor Day Holiday (University closed)
12-Sep	12th class day (Census Date)
12-Sep	Last day to withdraw from course(s) without academic record
Sep 13 - Nov 02	Withdrawal from course(s) with academic record ("W")
Oct 18 - Oct 20	Mid-semester examination
23-Oct	Mid-semester grades due by 11:59 p.m.
2-Nov	Last day for withdrawal from course(s) with academic record ("W")
Nov 22 - Nov 24	Thanksgiving Holidays (University closed)
4-Dec	Last Class Day
4-Dec	Last day to withdraw from the University
Dec 05 - Dec 11	Final Examinations
13-Dec	Final grades due for graduation candidates
15-Dec	Fall Commencement
18-Dec	Final grades due for all other students