



Course:

Design of Machine Elements II

Instructor: Dr. M. Asgari

Time: Saturday and Wednesday, 13:30-14:45.

Office hours: Saturdays, 15-17, Wednesdays, 10:30- 12:00

T.A hours: Mondays, 12:00-13:00

Web site: <http://wp.kntu.ac.ir/asgari/courses.html>

Syllabus (Main Topics):

- Introduction and Basic concepts of Mechanical Engineering Design
- Rolling-Contact Bearings
 - Bearing Types
 - Selection of Different Types of Roller Bearings
 - Bearing designation system
 - Mounting and Enclosure
- Lubrication and Journal Bearings
 - Types of Lubrication
 - Hydrodynamic Theory
 - Bearing Types
 - Pressure-Fed Bearings
- Gears
 - General Nomenclature and Fundamentals
 - Analysis and Design of Spur and Helical Gears
 - Analysis and Design of Bevel and Worm Gears
- Clutches and Brakes
 - Types of Clutches and Brakes
 - Analysis of Different Types of Clutches and Brakes
 - Energy Considerations and Temperature Rise
 - Flywheels
- Flexible Mechanical Elements
 - Types of Belts
 - Roller Chain
 - Wire Rope

Reference Texts:

- *Shigley's Mechanical Engineering Design*, Richard G. Budynas, and J. Keith Nisbett, Ninth Edition (9e), McGraw Hill, 2011.
- Related Standards and Manufacturers' Catalogues
- *Class Notes on Selected Subjects.*

Additional References:

- مهدی اخلاقی، طراحی اجزای ماشین انتقال نیرو، ۲ جلد، چاپ دوم، انتشارات دانشگاه صنعتی امیرکبیر تهران، ۱۳۹۱
- M. F. Spotts, Design of Machine Elements,
 - Robert L. Mott, *Machine Elements in Mechanical Design* (4th Edition) 2004,
 - Boris M. Klebanov, *Machine Elements: Life and Design* 2007,

Grading Policy:

<i>Regular Homework</i>	5%
<i>Quiz: 6-8 short quizzes</i>	15%
<i>Project: Technical report, professional engineering drawings</i>	20-30%
<i>Two Midterm Exams: Open book</i>	40%
<i>Final Exam: Open book</i>	20%

- * A high quality project may have up to 10% extra grade.
- * A minimum grade of **8** *from quizzes and exams* is mandatory for passing the course.
- * If the *Project* is not submitted, course grade will directly be F.
- * *Late* homework or late project will not be graded.

Ethics:

- All work prepared and submitted in this course in the form of projects and problem solutions are *expected to be original* and produced by the submitting student.
- Any portion that may have been borrowed from a previous work must be clearly identified and *referenced*. The origin of each figure, photograph, table as well as text used from other sources must be clearly identified.
- Cheating or *copying* on homeworks or the project, are grounds for *failing* the course.

"You cannot teach a man anything, you can only help him find it within himself."

Galileo Galilei