

# **Course Syllabus**

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## **Course Information**

Spring 2013  
MECH 3350 Design of Mechanical Components  
Room: JSOM 2.115  
Time: Tuesday & Thursday 1:00pm-2:15pm

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## **Professor Contact Information**

Dr. Wooram Park  
Office: ECSN 2.520  
Phone: 4625  
Email: wooram.park@utdallas.edu  
Office Hours: Thursday 2:30-4:00, or by appointment (please use email to set this up)

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## **TA**

David Gehlhausen  
Office: ECSS 3.619  
Email: dgehlhau@utdallas.edu  
Office Hours: TBA.

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## **Course Pre-requisites, Co-requisites, and/or Other Restrictions**

Prerequisites: MECH 2320, ENGR 3300. Recommended co-requisite: MECH 3150.

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## **Course Description**

This course focuses on analyzing given mechanisms for position, velocity, acceleration and static and dynamic forces. In addition, this course covers analysis and design of machine components such as cams and gears.

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## **Student Learning Objectives/Outcomes**

1. Students will be able to compute the position, velocity and acceleration of mechanisms.
  2. Students will be able to obtain the static and dynamic forces and toques of mechanisms.
  3. Students will be able to design cams using design requirements and constraints.
  4. Students will be able to identify and quantify the specifications and trade-offs for the selection and application of gears using design requirements and constraints.
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## **Required Textbooks and Materials**

Theory of Machines and Mechanisms 4th Ed.  
by John Joseph Uicker, Gordon Pennock, Joseph Edward Shigley  
Oxford University Press  
ISBN-13: 978-0195371239

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**Course topics**

Intro to mechanism, DOF, basic mathematics	1.5 week
Position/velocity/acceleration for mechanisms	3.5 weeks
Analysis and design of cams	3 weeks
Analysis and design of gears	3 weeks
Statics for mechanisms and mechanical component	2 weeks
Dynamics for mechanisms and mechanical component	2 weeks

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**Grading Policy**

Midterm1	25%
Midterm2	25%
Final	30%
Homework	20%

The final grades will be assigned according to the following ranges. This guideline is subject to change at the discretion of the instructor.

A+	$97 \leq P$	C+	$77 \leq P < 80$
A	$93 \leq P < 97$	C	$73 \leq P < 77$
A-	$90 \leq P < 93$	C-	$70 \leq P < 73$
B+	$87 \leq P < 90$	D+	$67 \leq P < 70$
B	$83 \leq P < 87$	D	$63 \leq P < 67$
B-	$80 \leq P < 83$	D-	$60 \leq P < 63$
		F	60 and below

The instructor will collect homework in the classroom.

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**Policies and Procedures for Students**

The University of Texas at Dallas provides a number of policies and procedures designed to provide students with a safe and supportive learning environment. Brief summaries of the policies and procedures are provided for you at <http://provost.utdallas.edu/home/index.php/syllabus-policies-and-procedures-text> and include information about technical support, field trip policies, off-campus activities, student conduct and discipline, academic integrity, copyright infringement, email use, withdrawal from class, student grievance procedures, incomplete grades, access to Disability Services, and religious holy days. You may also seek further information at these websites:

- [http://www.utdallas.edu/BusinessAffairs/Travel\\_Risk\\_Activities.htm](http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm)
- <http://www.utdallas.edu/judicialaffairs/UTDJudicialAffairs-HOPV.html>
- <http://www.utsystem.edu/ogc/intellectualproperty/copypol2.htm>
- <http://www.utdallas.edu/disability/documentation/index.html>

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***These descriptions and timelines are subject to change at the discretion of the Professor.***