

POLICIES AND SYLLABUS

— ROAD VEHICLE DYNAMICS 2 — SPRING 2007

Time and Location: MWF 3:00PM to 3:50PM, 4 Knox Hall

Road Vehicle Dynamics 1 is a prerequisite for this course.

Text: *Chassis Design: Principles and Analysis*, Milliken & Milliken, ISBN 0768008263, SAE, 2002.

Course Website: found on UBLearn

Instructor: Dr. Edward M. Kasprzak kasprzak@eng.buffalo.edu
805 Furnas Hall 645-2593 x 2320
Office Hours: Monday 4-5pm. Wednesday 2-3pm.

TA: None

Class begins: Wednesday 1/17 Last Class: Monday 4/30 No Class: 3/12, 3/14, 3/16

Outlook: This course will provide a more in-depth look at vehicle dynamics, building on the material covered in Road Vehicle Dynamics 1. The major topics to be covered are vehicle suspensions and transient handling. Reading of the text and other material outside of class will be expected. Development of the ability to read critically, write technical reviews and perform in-class presentations is also a focus of this course. This is the first time this class is being offered, and the plan for the course will evolve as the semester progresses.

Tentative Syllabus:

- Introduction to Maurice Olley and early vehicle dynamics (Ch. 1)
- Steady-state cornering (Ch. 2, 3)
- Transient Cornering (Ch. 4)
- Ride (Ch. 5)
- Oscillations of the Unsprung Masses (Ch. 6)
- Independent Front Suspension (Ch. 7)
- Roll and Roll Moments (Ch. 8)

Grading: Regular Assignments 40%

1 Mid-Term Exam 20%

2 Projects with In-Class Presentations 20% each

Students in MAE 500 will have extra assignments and an extra question on the mid-term exam

About the Instructor: Dr. Edward M. Kasprzak is an Adjunct Lecturer in the MAE department at UB, having completed his Ph.D. in December 2006. He is the advisor to the UB Formula SAE team, co-Director of the Formula SAE Tire Test Consortium, a vehicle dynamicist at Milliken Research Associates, Inc., (where he has been employed since 1996) and a contributor to Racecar Engineering magazine. He founded the original Road Vehicle Dynamics course with Dr. William Rae (previous instructor) as an undergrad in 1996, and he has taught this course, now renamed "Road Vehicle Dynamics 1", since Spring 2002. Spring 2007 marks the initial offering of "Road Vehicle Dynamics 2". Dr. Kasprzak was heavily involved in the production of the text used in this course, with responsibility for all of the mathematics and as a proofreader.