

Course Change Request

Indiana University

IUPUI Campus

Check Appropriate Boxes:

Undergraduate credit

Graduate credit

Professional credit

1. School/Division School of Engineering and Technology
2. Academic Subject Code MET 3. Current Course Number 472 4. Current Credit Hours 3
5. Current Title Vehicle Dynamics
6. Effective Semester/Year for changes listed below: Spring 2009 7. Instructor: Pete Hylton

Type of Change Requested (Check appropriate boxes and indicate changes)

- 8. Change course number to: (must be cleared with University Enrollment Services)
9. Current course title: Change to: Recommended abbreviation (optional)
10. Current credit hours fixed at: or variable from: to Change to credit hours fixed at: or variable from: to
11. Current lecture contact hours fixed at: or variable from: to Change to lecture contact hours fixed at: or variable from: to
12. Current non-lecture contact hours fixed at: or variable from: to Change to non-lecture contact hours fixed at: or variable from: to
13. Is this course currently graded with S-F (only) grades? Yes No
14. Does this course presently have variable title approval? Yes No
15. Is this course being discontinued? For all campuses or for this campus only
16. Current course description

Course description is not changing. Only an additional pre-requisite option is being added (MET213 was formerly the only pre-requisite, now it will be MET 213 or MSTE 210)

Change course description to (not to exceed 50 words)

Course description is not changing. MSTE 210 is being added as a prerequisite option in addition to MET 213.

17. Justification for change Course will be in 2 plans of study so an option from each will be available as a prereq.

18. Are the necessary reading materials currently available in the appropriate library? Yes

19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of this course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by: Richard E. Opel Date 10/22/08
Department Chairman/Division Director

Approved by: H. U. Akay Date 10-28-08
Dean

Dean of Graduate School (when required) Date

Chancellor/Vice-President Date

University Enrollment Services Date

PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION,
OR REVISION OF AN UNDERGRADUATE COURSE
(100-400 LEVEL)

DEPARTMENT Motorsports Engineering EFFECTIVE SESSION Fall 2009

INSTRUCTIONS: Please check the items below which describe the purpose of this request.

- | | |
|---|---|
| <input type="checkbox"/> 1. New course with supporting documents | <input type="checkbox"/> 7. Change in course attributes (department head signature only) |
| <input type="checkbox"/> 2. Add existing course offered at another campus | <input type="checkbox"/> 8. Change in instructional hours |
| <input type="checkbox"/> 3. Expiration of a course | <input type="checkbox"/> 9. Change in course description |
| <input type="checkbox"/> 4. Change in course number | <input checked="" type="checkbox"/> 10. Change in course requisites |
| <input type="checkbox"/> 5. Change in course title | <input type="checkbox"/> 11. Change in semesters offered (department head signature only) |
| <input type="checkbox"/> 6. Change in course credit/type | <input type="checkbox"/> 12. Transfer from one department to another |

PROPOSED: Subject Abbreviation Course Number Long Title Vehicle Dynamics Short Title Vehicle Dynamics

EXISTING: Subject Abbreviation MET Course Number 472

Abbreviated title will be entered by the Office of the Registrar if omitted. (22 CHARACTERS ONLY)

TERMS OFFERED
Check All That Apply:
 Summer Fall Spring

CAMPUS(ES) INVOLVED

<input type="checkbox"/> Calumet	<input type="checkbox"/> N. Central
<input type="checkbox"/> Cont Ed	<input type="checkbox"/> Tech Statewide
<input type="checkbox"/> Ft. Wayne	<input type="checkbox"/> W. Lafayette
<input checked="" type="checkbox"/> Indianapolis	

CREDIT TYPE		COURSE ATTRIBUTES: Check All That Apply	
1. Fixed Credit: Cr. Hrs. <u>3</u>	2. Variable Credit Range: <input type="text"/>	1. Pass/Not Pass Only <input type="checkbox"/>	7. Registration Approval Type <input type="checkbox"/>
3. Equivalent Credit: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	4. Thesis Credit: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	2. Satisfactory/Unsatisfactory Only <input type="checkbox"/>	8. Variable Title <input type="checkbox"/>
		3. Repeatable <input type="checkbox"/>	9. Remedial <input type="checkbox"/>
		4. Credit by Examination <input type="checkbox"/>	10. Honors <input type="checkbox"/>
		5. Designator Required <input type="checkbox"/>	11. Full Time Privilege <input type="checkbox"/>
		6. Special Fees <input type="checkbox"/>	12. Off Campus Experience <input type="checkbox"/>

Instructional Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated	Delivery Method (Asyn. Or Syn.)	Delivery Medium (Audio, Internet, Live, Text-Based, Video)	Cross-Listed Courses
Lecture	75	1	15				
Recitation							
Presentation							
Laboratory	120	1	15				
Lab Prep							
Studio							
Distance							
Clinic							
Experiential							
Research							
Ind. Study							
Pract/Observ							

COURSE DESCRIPTION (INCLUDE REQUISITES):
P: ME213 or MSTE210 or equivalent or permission of instructor. This course provides a study of vehicle chassis, suspension, and aerodynamic systems with a focus on high performance.

Calumet Department Head _____	Date _____	Calumet School Dean _____	Date _____
Fort Wayne Department Head _____	Date _____	Fort Wayne School Dean _____	Date _____
Indianapolis Department Head <u>Richard E. Phil</u>	Date <u>10/22/08</u>	Indianapolis School Dean <u>H.U. Akay</u>	Date <u>10-28-08</u>
North Central Department Head _____	Date _____	North Central Chancellor _____	Date _____
West Lafayette Department Head _____	Date _____	West Lafayette College/School Dean _____	Date _____
		West Lafayette Registrar _____	Date _____

MET472 – Vehicle Dynamics

Description: Study of vehicle chassis, suspension, and aerodynamic systems
Class Times: Tuesdays & Thursdays 3:00-4:15
Prerequisites: MET 213 or MSTE 210 or equivalent or permission of instructor
Instructor: Pete Hylton Phone: 317-274-7192 email: phylton@iupui.edu office: ET209G
Text: Race Car Vehicle Dynamics, by William and Douglas Milliken, published by SAE, copyright 1995, ISBN 1-56091-526-9
Grading: Homework/Individual Projects 200 points
 Final Exam 100 points
 Team Project 200 points Total 500 points
Minimum Scale: 90-100 = A, 80-90 = B, 70-80 = C, 60-70 = D, 0-60 = F +/- will be given

Tentative Course Schedule:

Date	Topic	
1/8	Intro, Velocity/Acceleration, G-G Diagram	Ch 1
1/10	Tire Behavior, Slip Angle, Camber, Friction Circle	Ch 2
1/15	Continuation & Lab Time	
1/17	Vehicle Axis Systems	Ch 4
1/22	Continuation & Lab Time	
1/24	Aero Dynamics, Wind Tunnel, Flow Visualization	Ch 3 & 15
1/29	Lab Time	
1/31	More Aero	
2/5	no class	
2/7	no class	
2/12	Lab Time	
2/14	Dynamics Review	
2/19 6:00 pm	Preliminary Design Review	
2/21	Springs & Dampers	Ch 21 & 22
2/26	Continuation & Lab Time	
2/28	Stability & Control	Ch 5
3/4	Continuation & Lab Time	
3/6	More Springs & Dampers, Transient Stability & Control	Ch 6
3/11	Spring Break	
3/13	Spring Break	
3/18	Continuation & Lab Time	
3/20	Force-Moment Analysis	Ch 8
3/25	Continuation & Lab Time	
3/27	G-G Diagram	Ch 9
4/1	Continuation & Lab Time	
4/3	Design Process	Ch 10
4/8	Continuation & Lab Time	
4/10	Racecar Design & Development	Ch 11 & 12
4/15	Continuation & Lab Time	
4/17	Chassis Set-up, Suspension Geometry	Ch 12 & 17
4/22	Continuation & Lab Time	
4/24	Review	
4/29	no class	
5/1	Final Exam 3:30-5:30	

Course Outcomes:

1. Demonstrate an appropriate mastery of the knowledge, techniques, skills and modern tools necessary for analysis of vehicle dynamics and design of vehicle systems.
2. Apply current knowledge and adapt to emerging applications appropriate to the topic of vehicle dynamics.
3. Conduct, analyze and interpret experiments and apply experimental results to improve processes.
4. Apply creativity in the design of systems, components or processes appropriate to program objectives.
5. Function effectively on teams.
6. Identify, analyze and solve technical problems
7. Communicate effectively.