



### Memorandum

To:

The Faculty of the College of Engineering

From:

The School of Mechanical Engineering

Date:

December 7, 2016

RE:

Change to Existing ME 20000 – Thermodynamics I

The Faculty of the School of Mechanical Engineering has approved the following changes to an existing course and now seeks the approval at the college level. We are adjusting the listed pre-requisite for ME 20000 to include ENGR 16200 with a minimum grade of C- since this course will now replace the old ENGR 14200. Also, we added the [may be taken concurrently] statement to ENGR 13300 for consistency. Finally, the Math Department now requires students to earn a grade of a C- or higher in all prerequisite Math courses. Thus, we are also adjusting the listed pre-requisite for ME 27000 include ENGR 16200 with a minimum grade of C- since this will now be the new honors option rather than ENGR 14200.

Course:

ME 20000- Thermodynamics I

## **Proposed Requisites:**

(Undergraduate level MA 26100 Minimum Grade of C- [may be taken concurrently] or Undergraduate level MA 26300 Minimum Grade of C- [may be taken concurrently]) or MA 18200 Minimum Grade of C- [may be taken concurrently] or MA 27100 Minimum Grade of C- [may be taken concurrently] and (Undergraduate level CHM 11500 Minimum Grade of C- or Undergraduate level CHM 12300 Minimum Grade of C-) or CHM 11100 and CHM 11200 Minimum Grade of C- and Undergraduate level ENGR 13200 Minimum Grade of C- [may be taken concurrently] or Undergraduate level ENGR 16200 Minimum Grade of C- [may be taken concurrently] or Undergraduate level ENGR 16200 Minimum Grade of C- [may be taken concurrently].

**Description:** First and second laws of thermodynamics, entropy, reversible and irreversible processes, properties of pure substances. Application to engineering problems.

Approved for the faculty of the Schools of Engineering by the Engineering Gurriculum Committee

ECC Minutes Da Chairman ECC

Office of the Registrar FORM 40 REV. 5/11

## **PURDUE UNIVERSITY**

# REQUEST FOR ADDITION, EXPIRATION, OR REVISION OF AN UNDERGRADUATE COURSE (10000-40000 LEVEL)

DEPARTMENT	Mechanical Engine	ering	EFFECTIVE SESSION	Fall 2017					
INSTRUCTIONS	S; Please check the items b	elow which describe the purpose	of this request.						
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PROPOSED:		EXISTING:			TERMS OFFERED				
Subject Abbreviation	on	Subject Abbreviati	ion ME	✓ Summe	Check All That Apply: r				
Course Number		Course Number		20000 Calumet	CAMPUS(ES) INVOLVED  N. Central				
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Short Title T	hermodynamics I			[ Indianap	olis				
Ab	breviated title will be entered by the	e Office of the Registrar if omitted. (30 CHA	RACTERS ONLY)						
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Schedule Type	Minutes Med Per Mtg	etings Per Weeks % of Cr Week Offered Allocal	edit		Cross-Listed Courses				
Laboratory Studio Distance Clinic Experiential Research Ind. Study Pract/Observ  COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):  Requisities - MA 26100, minimum grade C- (may be taken concurrently) or MA 27100, minimum grade C- (may be taken concurrently). CHM 11500, minimum grade C- (may not be taken concurrently) or CHM 12300, minimum grade C- (may not be taken concurrently). ENGR 13200, minimum grade C- (may be taken concurrently), ENGR 13200, minimum grade C- (may be taken concurrently), ENGR 13200, minimum grade C- (may be taken concurrently), ENGR 13200, minimum grade C- (may be taken concurrently), ENGR 16									
Calumet Departme	ent Head	Date Calumet School Dean	Date	-					
Fort Wayne Depa	rtment Head	Date Fort Wayne School Dea	n Date	-					
Indianapolis Depa	utment Head	Date Indianapolis School Dea	an Date	•					
North Central Fac	uith Senate Chair	Date Vice Chapcellor for Aca	Harin 13/14	West Lafayette Registra	ar Date				
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### SCHOOL OF MECHANICAL ENGINEERING

### Memorandum

To:

The Faculty of the College of Engineering

From:

The School of Mechanical Engineering

Date:

December 7, 2016

RE:

Change to Existing ME 26300 – Introduction to Mechanical Engineering

Design, Innovation and Entrepreneurship

The Faculty of the School of Mechanical Engineering has approved the following changes to an existing course and now seeks the approval at the college level. The Math Department now requires students to earn a grade of a C- or higher in all prerequisite Math courses to proceed. The course will remain restricted to students majoring in Mechanical Engineering.

Course:

ME 26300- Introduction to Mechanical Engineering Design, Innovation

and Entrepreneurship

# **Proposed Requisites:**

( CGT 16300 for a total of 1 conditions )

CGT 16300

Minimum Grade of D
May be taken concurrently.

#### and

.: ME 20000 for a total of 1 conditions ME 20000

Minimum Grade of D-

May not be taken concurrently.

#### and

ME 27000 or CE 27100 for a total of 1 conditions <u>CE</u> 27100 Minimum Grade of D-May **not** be taken concurrently. <u>ME</u> 27000 Minimum Grade of D-May not be taken concurrently.

#### and

.: MA 26200 for a total of 1 conditions MA 26200 Minimum Grade of C-May be taken concurrently.

Or

MA 26600

Minimum Grade of C-



# SCHOOL OF MECHANICAL ENGINEERING

May be taken concurrently

and

.: ME 29000 for a total of 1 conditions  $\underline{\text{ME}}$  29000 Minimum Grade of D-May be taken concurrently.

**Description:** The product design process. Development of product design specifications using customer inputs, benchmarking, product/market research and patent review. Concept generation and evaluation using brainstorming, functional decomposition, modeling and decision matrices. Detailed product design including assembly, economic analysis, CAD, and bill of materials. Oral and written design reviews. Key skills developed include teamwork, communication, project planning, innovation, design, and entrepreneurship.

Office of the Registrar FORM 40 REV. 5/11

# PURDUE UNIVERSITY REQUEST FOR ADDITION, EXPIRATION, OR REVISION OF AN UNDERGRADUATE COURSE (10000-40000 LEVEL)

INSTRUCTIONS: Please check the Items below which describe the purpose of this request.    1. New course with supporting documents   7. Change in course attributes (department head signature only)	DEPARTMENT M	lechanical Engineering		EEEECTIVE SES	Eall 201	7		
1. New course with supporting documents   7. Change in course offered at snother campus   8. Change in in course admirated and instructional hours   9. Change in course offered at snother campus   9. Change in course description   10. Change in course offered (department head signature only)   10. Change in course offered (department head signature only)   11. Change in course offered (department head signature only)   12. Transfer from one department head signature only)   13. Transfer from one department head signature only)   14. Change in semesters differed (department head signature only)   15. Change in course or deliber   15. Change in semesters differed (department head signature only)   15. Change in course or deliber   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semesters differed (department head signature only)   15. Change in semisters differed (department head signature only)   15. Change in			ch describe the purpose of		SION   Fall SOF			
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Course Number								
1. Place/Not Pass Orly 2. Variable Credit Cr. Hrs. 2. Variable Credit Range: Michaum Cr. Hrs. (Check One) 1. Department   Department   Instructor   Department	Course Number  Long Title Introdu	esign, Innov, & Entrp	Course Number	vation, and Entrep		CAI  Calumet  Cont Ed  Ft. Wayne	Fall Spring MPUS(ES) INVOLVED N. Central Tech Statewide	
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Lecture Rechtation Presentation Presentation Presentation Presentation Presentation Presentation Presentation Distance Clotic Clotic Experientiat Receserch Ind. Study Pract/Deery Pract/D	Variable Credit Range:     Minimum Cr. Hrs     (Check One)     Maximum Cr. Hrs     S. Equivalent Credit:	To Or	2. Satisfactory/Unsatisfactor 3. Repeatable Maximum Repeatable 4. Credit by Examination 5. Fees COOP Lab	e Credit:	Depa 7 Variable Title 8 Honors 9 Full Time Privi	artment	Instructor	
Lecture Rectation Presentation Laboratory Lab Prep Studio Obstance Clinic Experientiat Research Ind. Study Preact/Diserv  COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):  Requisites - CGT 16300, minimum grade D- (may be taken concurrently). ME 20000, minimum grade D- (may not be taken concurrently) ME 27000 or CE 27100, minimum grade D- (may not be taken concurrently). MA 26200 or MA 26600, minimum grade C- (may be taken concurrently) ME 29000, minimum grade D- (may be taken concurrently). Please see attached memorandum for additional information.  **COURSE LEARNING OUTCOMES**  1. Instill the philosophy that real engineering design problems are open-ended and multifaceted. 2. Teach a systemic design methodology. 3. Provide guidance in applying engineering principles to open-ended problems. 4. Develop the ability to mathematically model and analyze engineering systems. 5. Sharpen skills in leadership, teamwork, communication, project planning, innovation, design and entrepreneurship. 6. Instance a philosophy of professional and ethical behavior. 7. Provide a foundation for the rest of the mechanical engineering curriculum and future career	Schedule Type		Weeks % of Credit				Cross-Listed Courses	- -
Provide guidance in applying engineering principles to open-ended problems. 4. Develop the ability to mathematically model and analyze engineering systems. 5. Sharpen skills in leadership, teamwork, communication, project planning, innovation, design and entrepreneurship. 6. Insa a philosophy of professional and ethical behavior. 7. Provide a foundation for the rest of the mechanical engineering curriculum and future career	Recitation Presentation Laboratory Lab Prep Studio Olstance Clinic Experiential Research Ind. Study Pract/Observ COURSE DESCRIPTION Requisites - CGT 27000 or CE 2710 ME 29000, minimu	16300, minimum grade I 00, minimum grade D- (m um grade D- (may be tak итсомеs	D- (may be taken conc lay not be taken concu en concurrently). Plea	rrently). MA 26200 se see attached m	or MA 26600, emorandum fo	minimum grade r additional info	e C- (may be taken concurren rmation.	itly).
Calumet Department Head Date Calumet School Dean Date	Provide guidance i engineering syster	in applying engineering p ms. 5. Sharpen skills in le	principles to open-ende eadership, teamwork,	ed problems. 4. De communication, pr	velop the ability bject planning,	y to mathematic innovation, desi	ally model and analyze ign and entrepreneurship. 6.	Instill eers.
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Indianapolis Department Head Date Indianapolis School Dean Date	Indianapolis Department H	lead Date	Indianapolis School Dean		ate			
North Central Faculty Senate Chair  Date  Vice Chancellor for Academic Affairs  Date  Date  Vice Chancellor for Academic Affairs  New York Chancellor for Academic Affairs  Date  Vice Chancellor for	North Central Faculty Seni	ata Chair Date 4 101 12/7/16	Market !	Ham)	2/14/11	Lafayette Registrar	·	Date





#### Memorandum -

To: The Faculty of the College of Engineering

From: The School of Mechanical Engineering

Date: December 7, 2016

RE: Change to Existing ME 2700 – Basic Mechanics I

The Faculty of the School of Mechanical Engineering has approved the following changes to an existing course and now seeks the approval at the college level. The Math Department now requires students to earn a grade of a C- or higher in all prerequisite Math courses. Thus, we are also adjusting the listed pre-requisite for ME 27000 include ENGR 16200 with a minimum grade of C- since this will now be the new honors option rather than ENGR 14200.

Course: ME 27000- Basic Mechanics I

## **Proposed Requisites:**

Undergraduate level PHYS 17200 Minimum Grade of C- or Undergraduate level ENGR 162 Minimum Grade of C- [may not be taken concurrently] and (Undergraduate level MA 16200 Minimum Grade of C- or Undergraduate level MA 16600 Minimum Grade of C- or Undergraduate level MA 18100 Minimum Grade of C-) and (Undergraduate level MA 26100 Minimum Grade of C- [may be taken concurrently] or Undergraduate level MA 26300 Minimum Grade of C- [may be taken concurrently]) or MA 18200 Minimum Grade of C- [may be taken concurrently] and Undergraduate level ENGR 13200 Minimum Grade of C- [may be taken concurrently] or Undergraduate level ENGR 13300 Minimum Grade of C- [may be taken concurrently] or Undergraduate level ENGR 13300 Minimum Grade of C- [may be taken concurrently] or Undergraduate level ENGR 16200 Minimum Grade of C- [may not be taken concurrently]

**Description:** Vector operations, forces and couples, free body diagrams, equilibrium of a particle and of rigid bodies. Friction. Distributed forces. Centers of gravity and centroids. Applications from structural and machine elements, such as bars, trusses, and friction devices. Kinematics and equations of motion of a particle for rectilinear and curvilinear motion.

Office of the Registrar FORM 40 REV. 5/11

# PURDUE UNIVERSITY REQUEST FOR ADDITION, EXPIRATION, OR REVISION OF AN UNDERGRADUATE COURSE (10000-40000 LEVEL)

DEPARTMEN	NT Mech	anical Engine	ering		FEFECTI	VE SESSION	Fall 201.7			
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## Memorandum

To:

The Faculty of the College of Engineering

From

The School of Mechanical Engineering

Date:

December 7, 2016

RE:

Change to Existing ME 30900 - Fluid Mechanics

The Faculty of the School of Mechanical Engineering has approved the following changes to an existing course and now seeks the approval at the college level. The Math Department now requires students to earn a grade of a C- or higher in all prerequisite Math courses. Thus, we are adjusting the Math grade requirements to reflect this change.

Course:

ME 30900- Fluid Mechanics

## **Proposed Requisites:**

( Course or Test: ME 26300

Minimum Grade of D-

May not be taken concurrently. )

and

( Course or Test: ME 27400

Minimum Grade of D-

May not be taken concurrently. )

and

(Rule: 1.: MA262or265/266or350/360 for a total of 1 conditions)

and

( MA 26200

Minimum Grade of C-

May not be taken concurrently. )

or

MA 26600

Minimum Grade of C-

May not be taken concurrently. )

**Description:** Continuum, velocity field, fluid statics, manometers, basic conservation laws for systems and control volumes, dimensional analysis. Euler and Bernoulli equations, viscous flows, boundary layers, flow in channels and around submerged bodies, one-dimensional gas dynamics, turbomachinery.

Office of the Registrar FORM 40 REV. 5/11

# PURDUE UNIVERSITY REQUEST FOR ADDITION, EXPIRATION, OR REVISION OF AN UNDERGRADUATE COURSE (10000-40000 LEVEL)

DEPARTMENT	T Mech	nanical Engir	neering		EFFECTIVI	E SESSION	Fall 2017	· · · · · · · · · · · · · · · · · · ·		
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