Office of the Registrar
FORM 40 REV. 7/08

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

EFD 69-07

DEPARTMENT: School of Chemical Engineering
EFFECTIVE SESSION: Fall 2010

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

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

PROPOSED:		EXISTING:	
Subject Abbreviation	CHE	Subject Abbreviation	
Course Number	45000	Course Number	
Long Title	Design and Analysis of Processing Systems		
Short Title	Des and Analysis of Proc Sys		

Abbreviated title will be entered by the Office of the Registrar if omitted. (30 CHARACTERS ONLY)

TERMS OFFERED
Check All That Apply:
- [ ] Summer
- [x] Fall
- [ ] Spring

CAMPUS(ES) INVOLVED
- [ ] Calumet
- [ ] Cont Ed
- [ ] Ft. Wayne
- [ ] Indianapolis
- [ ] N. Central
- [ ] Tech Statewide
- [x] W. Lafayette

CREDIT TYPE
1. Fixed Credit: Cr. Hrs. 2
2. Variable Credit Range:
   Minimum Cr. Hrs
   (Check One) To [ ] Or [ ]
   Maximum Cr. Hrs
3. Equivalent Credit: Yes [ ] No [x]

COURSE ATTRIBUTES: Check All That Apply
1. Pass/Not Pass Only [ ]
2. Satisfactory/Unsatisfactory Only [ ]
3. Repeatable [ ]
   Maximum Repeatable Credit: [ ]
4. Credit by Examination [ ]
5. Special Fees [ ]
6 Registration Approval Type
   Department [ ] Instructor [ ]
7 Variable Title [ ]
8 Honors [ ]
9 Full Time Privilege [ ]
10 Off Campus Experience [ ]

Schedule Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated
Lecture	1	50	16	33%
Recitation				
Presentation				
Laboratory	1	110	16	67%
[illegible]				
Distance				
Clinic				
Experiential				
Research				
Ind. Study				
Pract/Observ				

Cross-Listed Courses

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):

Prerequisite: CHE 449 Corequisite: CHE 435 For CHE students only.
Synthesize, develop, and evaluate a preliminary design of a chemical process that meets market requirements for a specific product. Analysis of design alternatives using case studies and optimization methods.

Calumet Department Head	Date	Calumet School Dean	Date
Fort Wayne Department Head	Date	Fort Wayne School Dean	Date
Indianapolis Department Head	Date	Indianapolis School Dean	Date
North Central Department Head	Date	North Central Chancellor	Date
West Lafayette Department Head	8-15-08 Date	West Lafayette College/School Dean	9/9/08 Date
		West Lafayette Registrar	12/17/08 Date

OFFICE OF THE REGISTRAR

12/16/08

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North Central Department Head	Date	North Central Chancellor	Date
5 AVaun	8-15-10		
West Lafayette Department Head	Date	West Lafayette College/School Dean	9/9/10 Date

West Lafayette Registrar Date

OFFICE OF THE REGISTRAR

Engineering Faculty Document No. 69-07
March 5, 2008

To: Faculty of the College of Engineering

From: Faculty of the School of Chemical Engineering

RE: Removal of 1 credit hour from CHE 450

The faculty of the School of Chemical Engineering has approved the following changes to CHE 450. This action is now submitted to the Engineering Faculty with a recommendation for approval.

From:

CHE 450 Design And Analysis Of Processing Systems
Sem 2, Class 2, problem lab. 2, cr. 3
Prerequisites: CHE 306, 348, 378
Corequisite: CHE 435

Use of flowsheet balance calculations, chemical kinetics and thermodynamics, and transfer operations in designing chemical processing systems. Analysis of design alternatives using case studies and optimization methods.

To:

CHE 450 Design And Analysis Of Processing Systems
Sem 2, Class 1, problem lab. 2, cr. 2
Prerequisites: CHE 449
Corequisite: CHE 435

Synthesize, develop, and evaluate a preliminary design of a chemical process that meets market requirements for a specific product. Analysis of design alternatives using case studies and optimization methods.

Rationale: With the creation of CHE 449, there will now be a two semester design course sequence. There is only a need for this course to be 2 credit hours.

APPROVED FOR THE FACULTY
OF THE SCHOOLS OF ENGINEERING
BY THE ENGINEERING
CURRICULUM COMMITTEE
ECC Minutes #25
Date 5/9/08
Chairman ECC

A. Varma, Head
School of Chemical Engineering
Date: 3/5/08

Supporting Documentation – CHE 450

Level: Undergraduate
Course Instructors: Professors R. Agrawal, J. Pekny, G. Reklaitis, and V. Venkatasubramanian
Textbook: Products and Process Design Principles – Synthesis, Analysis and Evaluation, W. D. Seider, J. D. Seader & D. R. Lewin, J. Wiley & Sons, 2004.

Course Outline:

Week(s) *Topics*	
1	Course Introduction
2-3	Adv. material & energy balances for process flow sheets with recycle
4-6	Synthesis and design of process flow sheets
7-8	Advanced equipment costing
9-10	Process flow sheet economic evaluation
11-15	Advanced ASPEN simulation methods

Course Objectives: Synthesize, develop, and evaluate a preliminary design of a chemical process that meets market requirements for a specific product.

Course Outcomes: (numbers in parentheses refer to related program educational objective)

1. Apply systematic strategies for synthesizing chemical process designs that involve conventional unit operations (1, 3).
2. Create process flow sheet through conceptualization, process synthesis, process design and assessment (1, 3, 5).
3. Know where and how to obtain information on industrial chemical processes, process operating parameters, equipment costs, cost of chemicals and materials, and associated safety and environmental hazards (8, 9).
4. Estimate the capital and operating cost of a process and to assess its profitability (1,8).
5. Communicate project progress and final results in a professional manner orally and in written form (7).
6. Work effectively in a team to execute open-ended design projects with time-bound deliverables in a professional and ethical manner (1, 3, 4, 6, 9).

Assessment Methods for Course Outcomes: Each of the outcomes will be assessed by giving the students the appropriate homework problems, exams, team projects, and peer evaluation