

# CHEM 481 Topics in Industrial Chemistry-DEAdd-2019-03-28

- The workflow icon is no longer available. Please click on the Page Status after the orange circle icon near the page title. \*

Form Information

 The page you originally access is the global template version. To access the template document that progresses through the workflow, please complete the following steps:

**First Step:** ONLY change the text in the [brackets] so it looks like this: **CRIM 101 Intro to Criminology-CrsRvs-2015-08-10**

- If DUAL LISTED list BOTH courses in the page title***

**Second Step:** Click "SAVE" on bottom right

- DO NOT TYPE ANYTHING INTO THE FIRST PAGE OTHER THAN THE TEXT IN BRACKETS***
- Please be sure to remove the Brackets while renaming the page***

**Third Step:** Make sure the word ***DRAFT*** is in yellow at the top of the proposal

**Fourth Step:** Click on "**EDIT CONTENTS**" (*not EDIT*) and start completing the template. When exiting or when done, click "**SAVE**" (*not Save Draft*) on bottom right

When ready to submit click on the workflow icon and hit approve. It will then move to the chair as the next step in the workflow.

*\*Indicates a required field*

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<b>Course Level*</b>	undergraduate-level
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## Distance Education Section

- Complete this section only if adding Distance Education to a New or Existing Course - If adding to an Existing Course - please check to see if it has already been approved [HERE](#) (On Documents Page) - **before** completing the form

**NOTE** - if already approved - a new proposal **DOES NOT NEED TO BE COMPLETED**

<b>Course Prefix /Number*</b>	481
<b>Course Title*</b>	Topics in Industrial Chemistry
<b>Type of Proposal*</b>	<i>See CBA, Art. 42.D.1 for Definition</i> online
<b>Brief Course Outline*</b>	<i>Give an outline of sufficient detail to communicate the course content to faculty across campus. It is not necessary to include specific readings, calendar or assignments</i>  <i>As outlined by the federal definition of a "credit hour", the following should be a consideration regarding student work - For every one hour of classroom or</i>  <i>direct faculty instruction, there should be a minimum of two hours of out of class student work.</i>  This course introduces the student to industrial chemistry. Students will learn about unit operations, unit processes, equipment in chemical industry, diagrams for understanding chemical processes, fundamentals of material and thermal/heat balance, principles of process design, and separation processes design. These concepts will be used to study some organic and inorganic manufacturing processes.
<b>Rationale for Proposal (Required Questions from CBA)</b>	

<p><b>How is/are the instructor (s) qualified in the Distance Education delivery method as well as the discipline?*</b></p>	<p>I previously taught Environmental Pollution Control classes using a Zoom type system (some of the students in the Zoom room and some in a remote location).</p> <p>I participated to a D2L training session (May 2017) and use D2L on a daily basis for my classes.</p> <p>I currently use on line systems for homework and quizzes (e.g. Sapling).</p> <p>I am eligible to teach graduate courses.</p> <p>I hold a BS in Chemical Engineering and a PhD in Materials Science and have been a professor in the Chemistry Department at IUP since 2016. My main teaching responsibilities include Physical Chemistry lab II, General Chemistry I, College Chemistry I and II, Chemistry Seminar, and Chemical Engineering of Materials.</p> <p>I was previously teaching Analysis and Synthesis of Chemical Processes and Chemical Technology classes to chemical engineering students for more then 15 years.</p> <p>My research focuses on synthesis of processes and catalysts for wastewater treatment.</p>
<p><b>For each outcome in the course, describe how the outcome will be achieved using Distance Education technologies.*</b></p>	<p>Objective #1 – Identify unit operations and processes with their specific equipment. Explain how the equipment works. Use process diagrams to collect information about a chemical process.</p> <p>How objective #1 will be met: Assigned readings from the text and supplemental materials. Videos will be used to provide insights on how industrial equipment operates. Learning management system will be used to deliver class material and to communicate weekly assignments or quizzes.</p> <p>Objective #2 – Solve material and heat balances in chemical systems.</p> <p>How objective #2 will be met: Assigned readings from the text and supplemental materials. Several examples of solving material and heat balances will be available for students. Step by step analyses of the systems and how to approach balance problems will be provided. A learning management system will be used to deliver class material and to communicate weekly assignments or quizzes.</p> <p>Objective #3 – Design a chemical process.</p> <p>How objective #3 will be met: Assigned readings from the text and supplemental materials. Steps involved in chemical process design will be clearly explained using videos and/or other specific materials. A detailed example will be available for students, with emphasis on the chemical steps. A learning management system will be used to deliver class material and to communicate weekly assignments or quizzes.</p> <p>Objective #4 – Design a separation process</p> <p>How objective #4 will be met: Assigned readings from the text and supplemental materials. Steps involved in a separation process design will be clearly explained using videos and/or other specific materials. A detailed example on how to design a distillation separation process will be available for students. A learning management system will be used to deliver class material and to communicate weekly assignments or quizzes.</p>

<b>How will the instructor-student and student-student interaction</b>	