

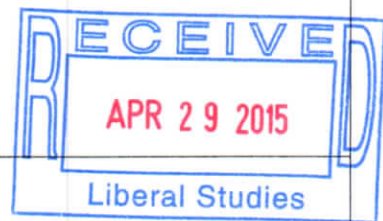
## New Course Proposal Template

Steps to the approval process:

1. Complete the applicable template(s) and email them to the departmental or program curriculum committee chair.
2. The curriculum chair emails the proposal to the curriculum committee, then to the department/program faculty for a vote and finally to the department/program chair.
3. The department/program chair emails the proposal to [curriculum-approval@iup.edu](mailto:curriculum-approval@iup.edu): this email will also serve as an electronic signature.
4. Curriculum committee staff will log the proposal, forward it to the appropriate dean's office(s) for review within 14 days and post it on the X Drive for review by all IUP faculty and administrators. Following the dean's review the proposal goes to the UWUCC/UWGC and the Senate.
5. Questions? Email [curriculum-approval@iup.edu](mailto:curriculum-approval@iup.edu).

Contact Person:	Dr. Laura Helmrich-Rhodes	Email Address:	lhrhodes@iup.edu
Proposing Depart/Unit:	Safety Sciences	Phone:	724-357-3017

Course Prefix/Number	See the Registrar's list of Unavailable course numbers at <a href="http://www.iup.edu/WorkArea/linkit.aspx?LinkIdentifier=id&amp;ItemID=129323">http://www.iup.edu/WorkArea/linkit.aspx?LinkIdentifier=id&amp;ItemID=129323</a> SAFE 204		
Course Title	Principles of Safety in the Natural Gas Industry		
Dual/Cross Listed	<small>Dual Listed - Courses listed at two levels, such as undergraduate and graduate, masters and doctoral, etc. Cross Listed - Course has more than one prefix such as GEOG RGPI, 233.</small> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes with: <a href="#">Click here to enter text.</a>		
Number of Credits	(UG) Class Hours - 3 (UG) Lab Hours - 0 Credits - 3		
Prerequisite(s)	SAFE 104 Introduction to Safety in the Natural Gas Industry		
Corequisite(s)	<small>This means that another course must be taken in the same semester as the proposed course</small> <a href="#">Click here to enter text.</a>		
Additional Information (Check all that apply. Note: Additional documentation will be required)	<input type="checkbox"/> Liberal Studies (please also complete Template C) <input type="checkbox"/> Teacher Education (Is it Step 1 a prerequisite or is it part of the Professional Education Sequence If so please also complete Template D) <input type="checkbox"/> Distance Education (Please also complete Template E)		
Recommended Class Size (optional) (provide justification)	Are you recommending a class size: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No     Number: 25 If yes: (check one of the following reasons and provide a narrative explanation) <input checked="" type="checkbox"/> Pedagogical <input checked="" type="checkbox"/> Physical limitation of classroom <input type="checkbox"/> Accreditation body standards/recommendations <input type="checkbox"/> Other Explanation (required): Equipment availability in the safety laboratory such as fall protection, confined space entry, tools and material demos is limited. Also, the instructor will be expected to coordinate and supervise the class for out-of-class sessions on an active drilling, pipeline or processing operation.		



# Template A

<p><b>Catalog Description</b></p>	<p><i>Guidelines: Do not include pre-requisite information here. The registrar prefers a concise description of course content beginning with an active verb.</i></p> <p>Examines safety, health, fire and environmental issues in the natural gas procurement process by showcasing the complexity of hazard control. The course uses applicable OSHA-promulgated standards, American Petroleum Institute standards and various consensus standards as a basis for understanding hazards and their control requirements, such as the use of personal protective equipment. Emphasis is given to well site construction, layout and equipment, and hazards associated with gas procurement construction and operations, such as fall potential, confined spaces, fire and explosion, trenching and excavation, and health hazards. Safety program implementation and interaction with enforcement agencies is also highlighted.</p>
<p><b>Student Learning Outcomes</b></p> <p><i>(These should be measurable, appropriate to the course level, and phrased in terms of student achievement, not instructional or content outcomes)</i></p> <p><i>If dual listed, indicate additional learning objectives for the higher level course.</i></p>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>A. Identify and distinguish among risks associated with each step of the gas procurement process.</li> <li>B. Demonstrate competency in the legal aspects of safety by applying the Occupational Safety and Health Administration (OSHA) standards to perform audits and identify specific violations of current standards.</li> <li>C. Identify additional safety and health standards, such as the American Petroleum Institute (API), National Fire Protection Association (NFPA), and American National Standards Association (ANSI), which are applicable to gas procurement operations.</li> <li>D. Define the specific classes and uses of equipment used on a well site, the common safety, health, and hazards associated with their operation and control strategies to reduce hazards.</li> <li>E. Describe environmental considerations in the gas procurement process, such as permitting and notification requirements.</li> <li>F. Prepare documentation typical of post-incident regulatory investigations, informal hearings and formal investigations, such as those required by OSHA, EPA, and the Chemical Safety Board.</li> </ol>
<p><b>Brief Course Outline:</b></p> <p><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></p>	<ol style="list-style-type: none"> <li>A. Overview of well site construction and layout <span style="float: right;">(4 hours)</span> <ol style="list-style-type: none"> <li>1. Site planning</li> <li>2. Site clearing and preparation (i.e., logging, excavation &amp; asphalt)</li> <li>3. Typical equipment layout of active drilling and completion</li> <li>4. Egress, traffic control and general security issues</li> <li>5. Sanitation and personnel facilities</li> </ol> </li> <li>B. Risk assessment of gas procurement equipment <span style="float: right;">(4.5 hours)</span> <ol style="list-style-type: none"> <li><b>Part 1</b></li> <li>1. Basics of mechanical, electrical and hydraulic hazards</li> <li>2. Fall hazard exposures and controls</li> <li>3. Typical dropped object and their impact on people and equipment</li> <li>4. Anatomy of kicks and blow outs</li> <li>5. Review of health hazards related to equipment use (NORM, Silica, Noise, Hydrogen Sulfide, Benzene, Diesel Particulate, Formaldehyde)</li> </ol> <p style="text-align: right;"><b>Part 2</b> <span style="float: right;">(6.5 hours)</span></p> </li> </ol>

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	<ol style="list-style-type: none"> <li>1. Inventory of equipment (not including vehicles) associated with each step of the process             <ol style="list-style-type: none"> <li>a. Detailed look at oilfield equipment                 <ol style="list-style-type: none"> <li>i. Snubbing</li> <li>ii. Wireline</li> <li>iii. Coiled tubing</li> <li>iv. Hydraulic fracturing</li> <li>v. Drilling rig</li> <li>vi. Workover rig</li> <li>vii. Production equipment (i.e., tanks, piping, compression, processing equipment)</li> <li>viii. BOPs</li> </ol> </li> <li>2. The use of safety, health, fire and environmental risk assessment techniques, such as HAZOP, JSA and industry best practice including "Integrated Hazard ID"</li> <li>3. Application of equipment specific regulations</li> <li>4. Maintaining equipment testing documents for enforcement review</li> </ol> </li> </ol> <p>C. Vehicles used at well sites <span style="float: right;">(3 hours)</span></p> <ol style="list-style-type: none"> <li>1. Classes of industrial trucks/vehicles</li> <li>2. Vehicle specific regulations</li> <li>3. Safe operation of vehicles</li> <li>4. Maintenance and inspection of vehicles</li> <li>5. Training of operators and document management</li> </ol> <p>D. Confined space hazard identification and controls <span style="float: right;">(3 hours)</span></p> <ol style="list-style-type: none"> <li>1. Identifying confined space versus permit-required confined space</li> <li>2. Training requirements</li> <li>3. Equipment needs for entry</li> <li>4. Permit use, completion and maintenance</li> <li>5. Rescue planning and preparations for well sites</li> <li>6. Document preparation and retention</li> </ol> <p>E. Walking and working surfaces <span style="float: right;">(2 hours)</span></p> <ol style="list-style-type: none"> <li>1. Significance of exposure</li> <li>2. Slips and falls</li> <li>3. Stairways and ramps</li> <li>4. Controls</li> </ol> <p>F. Hand and power tools <span style="float: right;">(2 hours)</span></p> <ol style="list-style-type: none"> <li>1. Typical hand tools used</li> <li>2. Identification of hazards</li> <li>3. Control of hazards</li> </ol> <p>G. Employee training <span style="float: right;">(3 hours)</span></p> <ol style="list-style-type: none"> <li>1. Federally mandated training topics</li> <li>2. Industry specific training</li> <li>3. Evaluation of training packages, vendors and delivery media</li> <li>4. Deliver short training session</li> </ol> <p>H. Management of contractors for safety, health and environmental considerations <span style="float: right;">(4 hours)</span></p> <ol style="list-style-type: none"> <li>1. Statistical data bases</li> <li>2. Master service agreements</li> <li>3. Evaluation of contractors' SHE performance</li> </ol>
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	<ul style="list-style-type: none"> <li>a. On-site inspections and audits</li> <li>b. Written program audit</li> <li>c. Conducting contractor meetings</li> </ul> <p>I. Interacting with enforcement agencies for positive outcomes <span style="float: right;">(4 hours)</span></p> <ul style="list-style-type: none"> <li>1. Projecting positive SHE commitment to stakeholders prior to inspections</li> <li>2. Inspection preparation and procedure development</li> <li>3. Typical inspection expectations for various agencies</li> <li>4. Common citations by various agencies</li> <li>5. Rights and responsibilities for contesting and/or abatement of hazard citations</li> <li>6. Using citation history to improve operations (i.e., choosing subcontractors and vendors, safety program priorities)</li> <li>7. The role and responsibility of the SHE professional and professional organizations on influencing regulation development</li> </ul> <p>J. Emergency Preparedness <span style="float: right;">(3 hours)</span></p> <ul style="list-style-type: none"> <li>1. Written programs</li> <li>2. Interacting with local EMA/FEMA</li> <li>3. Communications with the public and handling media outlets in a crisis</li> <li>4. Dealing with loss as a safety professional at the personal level</li> <li>5. Leading/contributing to table top drills</li> </ul> <p>K. Current issues in the gas industry <span style="float: right;">(3 hours)</span></p> <ul style="list-style-type: none"> <li>1. Lessons learned from near miss and recent catastrophic accidents</li> <li>2. Regulatory status</li> <li>3. Enforcement activities</li> <li>4. Projected SHE concerns</li> </ul> <p>Final Examination (Finals Week) <span style="float: right;">(2 hours)</span></p>
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### Rationale for Proposal

Why is this course being proposed?	In response to growing emphasis on natural gas extraction in the US, a collaborative effort with IUP's Geosciences and Geography and Regional Planning Departments has been established to offer a shale gas interdisciplinary certificate. This course and the proposed SAFE 104 course will be a part of that certificate program, in addition to being a free elective to students primarily in the Safety, Health, and Environmental Applied Sciences program
How does it fit into the departmental curriculum? (Check all that apply)	<input type="checkbox"/> Major Requirement <input type="checkbox"/> Minor Requirement <input type="checkbox"/> Core Requirement <small>(Interdisciplinary core – e.g. Business-Education)</small> <input type="checkbox"/> Required Elective <input type="checkbox"/> Liberal Studies <input checked="" type="checkbox"/> Open Elective <input checked="" type="checkbox"/> Other - Part of the proposed shale gas interdisciplinary certificate program
Is a similar class offered in other departments?	<input type="checkbox"/> Yes Please provide comment: <a href="#">Click here to enter text.</a> <input checked="" type="checkbox"/> No
Does it serve the college/university above and beyond the role it serves in the department?	<input checked="" type="checkbox"/> Yes Please provide comment: Part of the proposed shale gas interdisciplinary certificate program which students from other IUP departments as well as outside the University may elect to take e <input type="checkbox"/> No

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<p>Who is the target audience for the course?</p>	<p><input type="checkbox"/> Course Designed for Majors ( <input type="checkbox"/> Required <input type="checkbox"/> Not Required)</p> <p><input type="checkbox"/> Course Designed for Minor <span style="float: right;"><input checked="" type="checkbox"/> Departmental Elective</span></p> <p><input type="checkbox"/> Restricted to Majors/Minors <span style="float: right;"><input checked="" type="checkbox"/> Open to Any Student</span></p> <p><input type="checkbox"/> Liberal Studies</p> <p><input checked="" type="checkbox"/> Other - Part of the proposed shale gas multidiscipline certificate program</p>
<p>Implications for other departments</p>	<p>5. What are the implications for other departments (<i>For example: overlap of content with other disciplines, requirements for other programs</i>)?</p> <p>Students in other departments may elect to take this course as part of gaining a shale gas interdisciplinary certificate or as a matter of personal interest.</p> <p>6. How have you addressed this with other department(s) involved? What was the outcome of that attempt? (<i>Attach documents as appropriate</i>)</p> <p>This is a collaborative effort with Geosciences and Geography and Regional Planning Departments to offer an interdisciplinary certificate program in shale gas. Drafts of the course have been shared with each department via Department Chairs.</p>
<p>Are the resources adequate (i.e. faculty, space, equipment, laboratory supplies, library materials, travel funds, etc.)?</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>Please provide comment: Faculty complement who have historically taught safety introductory courses (SAFE 100, SAFE 101) will be assigned to teach SAFE 204. SAFE 100 and SAFE 101 will be taught primarily by graduate assistants. It is anticipated that this course will be offered annually in either the fall or spring terms</p>
<p><b>For Dean's Review</b></p>	
<p>I. Are resources available/sufficient for this course? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p>	
<p>J. Is the proposal congruent with college mission? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p>	
<p>K. Has the proposer attempted to resolve potential conflicts with other academic units? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p>	
<p>Comments: s</p>	