

Bachelor of Science in Computer Science/Languages and Systems Track-PrgRsv-2019-03-23

- 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*

Proposer*	Terrence Fries	Proposer Email*	tfries@iup.edu
Contact Person*	Terrence Fries	Contact Email*	tfries@iup.edu
Proposing Department/Unit*	Mathematical and Computer Sciences	Contact Phone*	7-4492

<p>Program Revision Options (Check all that apply)</p> <p>Program Revision</p> <p><i>* Teacher Education: Please complete the Teacher Education section of this form (below)</i></p> <p><i>* Liberal Studies: Please complete the Liberal Studies section of this form (below)</i></p>

Program Level:*	undergraduate-level
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Rationale for Proposed Changes	
(A) Why is the program being revised?*	<p>The program is being revised in response to recommendations made by the ABET accreditation team that visited campus and the results of an interim ABET report. Additionally, the revised ABET criteria for computing programs effective 2019-2020 added the following two requirements for:</p> <ol style="list-style-type: none"> Substantial coverage of algorithms and complexity, computer science theory, concepts of programming languages, and software development. A major project that requires integration and application of knowledge and skills acquired in earlier course work. <p>Therefore, we are adding to the Required Courses COSC 420 or 424 (addresses #1) and COSC 473 or 493 (addresses #5) for COSC 473 or COSC 493 which were lacking in the current curriculum. We have moved COSC 345 and 432 to Controlled and Upper-level Electives, respectively, since ABET now only requires "exposure to" networking and operating systems.</p> <p>The SLOs are being revised to conform with the new set of Outcomes required by the ABET accreditation agency.</p> <p>We are also changing the requirement of MATH 126 for the Liberal Studies Requirement to MATH 216 for consistency with the other tracks to help students who change tracks.</p> <p>Footnotes are renumbered in order of appearance in the curriculum.-</p>

<p>(B) Identify ALL Program Level Student</p> <p>Learning Outcomes (PSLO)</p> <p>Indicate any SLOs that have been changed</p> <p>highlighting them in red.*</p> <ul style="list-style-type: none"> • Outcomes must be measurable • 4-6 outcomes recommended for degree programs • Tracks, concentrations, certificates must have at least one outcome that is unique from a related degree program • Minors and majors may share outcomes • PLSLOs will be evaluated as part of the program's assessment plan 	Students will be able to:			
	#	Outcome	How outcome measured	Which course(s) will this outcome be taught & assessed?
	1	Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.	Assignments, Exams, Projects, Practicum or Internship	COSC 319, 460, 473 or 493, Upper-level electives
	2	Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of languages, systems, and/or tools used in the field of computer science.	Assignments, Exams, Projects, Practicum or Internship	COSC 319, 473 or 493, Upper-level electives
	3	Communicate effectively in a variety of professional contexts.	Written Assignments, Oral Presentations	COSC 319, 380, 480
	4	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.	Assignments, Exams, Oral Presentations	COSC 380
	5	Function effectively as a member or leader of a team engaged in activities appropriate to languages, systems, and/or tools used in the field of computer science.	Group Projects, Practicum or Internship	COSC 319, 473 or 493
6	Apply computer science theory, mathematical concepts, and software development fundamentals to produce computing-based solutions.	Assignments, Exams, Projects, Practicum or Internship	COSC 319, 460, 420 or 424, 473 or 493, Upper-level electives	
<p>(C) Implications of the change on the program, other programs and the Students:*</p>	<p>There are no negative implications on the program, other programs, or students. The only implication is that the program will be better prepared for the next ABET accreditation visit.</p>			

Program Information	
(D) Current Program Title*	B.S. in Computer Science/Languages and Systems Track
Proposed Program Title <i>(if changing)</i>	

<p>(E) Current Narrative</p> <p>Catal og Descript ion</p> <p><i>If copying pasting from current catalog entry, please paste into Word or Notepa d first to eliminat e potentia l issues with formatti ng or special charact ers in the text.</i></p>	<p>UG Course Catalog: http://www.iup.edu/registrar/catalog/</p> <p>Grad Course Catalog: http://www.iup.edu/graduatestudies/catalog/</p> <p>The programs in computer science at IUP lead to the BS or BA degree and are designed primarily to prepare graduates for productive work in highly computer-dependent areas of business, government, and industry. In recent years, majors graduating from the program have attained their first jobs in business applications, programming and systems analysis, computer soft-ware development, scientific and applied mathematical programming, and other computer-related areas and have gone to graduate school.</p> <p>In a rapidly developing field such as computer science, it is important that the graduate's education be broad and fundamental so that new trends can more readily be followed. The goal is to balance fundamentality and breadth with sufficient supervised practice so that the graduates are produc-tive at the time they graduate but ready and willing to change with the field.</p> <p>The Computer Science Department, working with its Corporate Advisory Board, has identified objectives of a computer science professional over the length of his/her career (Program Educational Objectives). These Program Educational Objectives can be found on the departmental website, www.iup.edu/compsei.</p> <p>The department encourages computer science majors to take a strong minor (or area concentration) in a second area of interest. Some students may wish to double major. Majors in other disciplines at IUP are also welcome to take computer science courses for which they are qualified or to complete a Computer Science minor or Cyber Security minor.</p> <p>Students in a Computer Science Track should set their goals beyond simple programming and should be preparing to:</p> <ol style="list-style-type: none"> 1. apply computer science knowledge to application areas from science and industry; 2. apply appropriate data structures and algorithms to analyze and solve new problems; 3. apply software engineering techniques to designing, implementing, documenting, testing, and maintaining software systems; 4. contribute to improving the design and implementation of databases; 5. use more than one programming language and choose an appropriate one for the project; 6. work with and communicate effectively with professionals in various fields; 7. continue a lifelong professional development in computing; 8. act ethically and professionally. <p>-</p> <p>There are additional goals for students dependent on the track they choose.</p> <p>Bachelor of Science—Computer Science/Languages and Systems Track</p> <p>A graduate of this track will be prepared to:</p> <ol style="list-style-type: none"> 1. improve (a) the software tools that programmers and analysts use, (b) operating systems, (c) Web-based applications and interfaces, and (d) networks and system security; 2. develop (a) better languages for communicating with computers and (b) software that takes computer organization into account, and enter graduate studies.
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<p>Proposed Narrative</p> <p>Catalog Description (if changing)</p>	<p>The programs in computer science at IUP lead to the BS or BA degree and are designed primarily to prepare graduates for productive work in highly computer-dependent areas of business, government, and industry. In recent years, majors graduating from the program have attained their first jobs in business applications, programming and systems analysis, computer soft-ware development, scientific and applied mathematical programming, and other computer-related areas and have gone to graduate school.</p> <p>In a rapidly developing field such as computer science, it is important that the graduate's education be broad and fundamental so that new trends can more readily be followed. The goal is to balance fundamentality and breadth with sufficient supervised practice so that the graduates are productive at the time they graduate but ready and willing to change with the field.</p> <p>The Department of Mathematical and Computer Sciences, working with its Corporate Advisory Board, has identified objectives of a computer science professional over the length of his/her career (Program Educational Objectives). These Program Educational Objectives can be found under each program category on the departmental website, www.iup.edu/math-computer-sciences/undergrad/computer-sciences/.</p> <p>The department encourages computer science majors to take a strong minor (or area concentration) in a second area of interest. Some students may wish to double major. Majors in other disciplines at IUP are also welcome to take computer science courses for which they are qualified or to complete a Computer Science minor or Cyber Security minor.</p> <p>Bachelor of Science—Computer Science/Languages and Systems Track</p> <p>A graduate of this track will be prepared to:</p> <ol style="list-style-type: none"> 1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions. 2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of languages, systems, and/or tools used in the field of computer science. 3. Communicate effectively in a variety of professional contexts. 4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles. 5. Function effectively as a member or leader of a team engaged in activities appropriate to languages, systems, and/or tools used in the field of computer science. 6. Apply computer science theory, mathematical concepts, and software development fundamentals to produce computing-based solutions. 				
<p>(F) Current and Proposed Program Requirements</p>	<p>Attach a Word document showing a side-by-side comparison of the current and proposed program requirements.</p> <p>Please clearly label the attachment as Program Requirements.</p> <table border="1" data-bbox="228 1199 1235 1297"> <thead> <tr> <th>File</th> <th>Modified</th> </tr> </thead> <tbody> <tr> <td>Microsoft Word Document BS-LGSY Program Revision Rev 4-25.docx</td> <td>Apr 25, 2019 by Terrence P. Fries</td> </tr> </tbody> </table>	File	Modified	Microsoft Word Document BS-LGSY Program Revision Rev 4-25.docx	Apr 25, 2019 by Terrence P. Fries
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<p>(G) Supporting Documents*</p>	<p>Are you making a major change?</p> <p>NO</p> <p>If making a major change, please attach a document with a summary of any/all changes.</p> <p>Please clearly label the attachment as Supporting Documentation.</p> <table border="1" data-bbox="412 1625 1414 1717"> <thead> <tr> <th>File</th> <th>Modified</th> </tr> </thead> <tbody> <tr> <td>Microsoft Word Document BS-LGSY Program Revision Rev 4-25.docx</td> <td>Apr 25, 2019 by Terrence P. Fries</td> </tr> </tbody> </table>	File	Modified	Microsoft Word Document BS-LGSY Program Revision Rev 4-25.docx	Apr 25, 2019 by Terrence P. Fries
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Liberal Studies Section


- Complete this section only for a new Liberal Studies course or Liberal Studies course revision

<p>If Completing this Section, Check the Box to the Right:</p>	<p>NOTE: you must check this box if the Course/Program has previously been approved for Liberal Studies</p>
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Liberal Studies Course Designations (Check all that apply)	
Learning Skills:	
Knowledge Area:	
Liberal Studies Elective	<i>Please mark the designation(s) that apply - must meet at least one</i>
Expected Undergraduate Student Learning Outcomes (EUSLOs)	<i>Describe how each Student Learning Outcome in the course enables students to become Informed Learners, Empowered Learners and/or Responsible Learners</i> <i>See http://www.iup.edu/WorkArea/DownloadAsset.aspx?id=181694</i>
Description of the Required Content for this Category	<i>Narrative on how the course will address the Selected Category Content</i>
<p>All Liberal Studies courses are required to include perspectives on cultures and have a supplemental reading.</p> <p>Please answer the following questions.</p>	
<p>Liberal Studies courses must include</p> <p>the perspectives and contributions</p> <p>of ethnic and racial minorities and</p> <p>of women whenever appropriate to</p> <p>the subject matter. Please explain</p> <p>how this course will meet this</p> <p>criterion.</p>	
<p>Liberal Studies courses require the</p> <p>reading and use by students of at</p> <p>least one non-textbook work of</p> <p>fiction or non-fiction or a collection</p> <p>of related articles. Please describe</p> <p>how your course will meet this</p> <p>criterion.</p>	

Teacher Education Section

- Complete this section only for a new Teacher Education course or Teacher Education course revision

<p>If Completing this Section,</p> <p>Check the Box to the Right:</p>	<p>NOTE: you must check this box if the Course/Program has previously been approved for Teacher Education related items</p>				
<p>Course Designations:</p>					
<p>Key Assessments</p>					
	<p>For both new and revised courses, please attach (see the program education coordinator):</p> <ul style="list-style-type: none"> • The Overall Program Assessment Matrix • The Key Assessment Guidelines • The Key Assessment Rubric <table border="1" data-bbox="393 512 1403 604"> <thead> <tr> <th data-bbox="393 512 1078 558">File</th> <th data-bbox="1081 512 1403 558">Modified</th> </tr> </thead> <tbody> <tr> <td data-bbox="393 562 1078 604">Microsoft Word Document BS-LGSY Program Revision Rev 4-25.docx</td> <td data-bbox="1081 562 1403 604">Apr 25, 2019 by Terrence P. Fries</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • Drag and drop to upload or browse for files  	File	Modified	Microsoft Word Document BS-LGSY Program Revision Rev 4-25.docx	Apr 25, 2019 by Terrence P. Fries
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<p>Narrative Description of the Required Content</p>	<p><i>How the proposal relates to the Education Major</i></p>				

Please scroll to the top and click the Page Status if you are ready to take action on the workflow.
Please submit an ihelp if you have any questions <http://ihelp.iup.edu>