

Bachelor of Science in Computer Science/Cyber Security 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>Catalog Description Change 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>
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Program Level:*	undergraduate-level
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Rationale for Proposed Changes	
(A) Why is the program being revised?*	The program is being revised to address new ABET accreditation criteria. The SLOs are being revised to conform with the new set of criteria required by the ABET accreditation agency. The catalog description is modified to reflect the change in SLOs. In the prior catalog description, a common set of SLOs applied to all three tracks in the program and then specified particular additional SLOs for each track. The common set of SLOs have been removed and each track has been given a unique set of SLOs that reflect the ABET accreditation criteria. Additionally, revisions address several courses which are no longer offered and the discontinuation of CNSS certifications by the National Security Agency.

(B) Identify ALL Program Level Student

Learning Outcomes (PSLO)

Indicate any SLOs that have be changed

highlighting them in red.*

- 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, 356, 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 cyber security.	Assignments, Exams, Projects, Practicum or Internship	COSC 356, 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 cyber security.	Group Projects, Practicum or Internship	COSC 216, 356, Controller and Upper-level electives
6	Apply security principles and practices to the computing environment, hardware, software, and human aspects of a system.	Assignments, Exams, Projects	COSC 345, 356, 362, Upper-level electives
7	Analyze and evaluate systems with respect to maintaining operations in the presence of risks and threats.	Assignments, Exams, Projects	COSC 216, 356, Controller and Upper-level electives

(C) Implications of the change on the program, other

programs and the Students:*

None.

Program Information	
(D) Current Program Title*	B.S. In Computer Science/Cyber Security Track
Proposed Program Title <i>(if changing)</i>	
(E) Current Narrative Catalog Description <i>If copying pasting from current catalog entry, please paste into Word or Notepad first to eliminate potential issues with formatting or special characters in the text.</i>	

UG Course Catalog: <http://www.iup.edu/registrar/catalog/>

Grad Course Catalog: <http://www.iup.edu/graduatestudies/catalog/>

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 software development, scientific and applied mathematical programming, and other computer-related areas and have gone to graduate school.

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.

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/compsci~~.

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.

~~Students in a Computer Science Track should set their goals beyond simple programming and should be preparing to:~~

- ~~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.~~

~~-~~

~~There are additional goals for students dependent on the track they choose.~~

Bachelor of Science—Computer Science/Cyber Security Track

A graduate of this track will be prepared to:

- ~~1. work with business personnel to implement information security policy;~~
- ~~2. work with law enforcement personnel at all levels to prevent information security violations and prosecute those who attack computer systems;~~
- ~~3. manage security in network systems;~~
- ~~4. increase the public's knowledge of cyber security issues;~~
- ~~5. establish procedures that provide information assurance in computer systems for which he/she is responsible;~~
- ~~6. contribute to improving secure data communications;~~
- ~~7. strengthen the security of application programs.~~

<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/Cyber Security 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 <u>other</u> 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 cybersecurity. 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 cybersecurity. 6. Apply security principles and practices to the computing environment, hardware, software, and human aspects of a system. 7. Analyze and evaluate systems with respect to maintaining operations in the presence of risks and threats. 				
<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. Please clearly label the attachment as Program Requirements.</p> <table border="1" data-bbox="224 1071 1490 1176"> <thead> <tr> <th data-bbox="224 1071 909 1123">File</th> <th data-bbox="909 1071 1490 1123">Modified</th> </tr> </thead> <tbody> <tr> <td data-bbox="224 1123 909 1176">Microsoft Word Document BS-CYBR Program Revision Rev 4-25.docx</td> <td data-bbox="909 1123 1490 1176">Apr 25, 2019 by Terrence P. Fries</td> </tr> </tbody> </table>	File	Modified	Microsoft Word Document BS-CYBR 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. Please clearly label the attachment as Supporting Documentation.</p> <table border="1" data-bbox="407 1491 1417 1596"> <thead> <tr> <th data-bbox="407 1491 1088 1543">File</th> <th data-bbox="1088 1491 1417 1543">Modified</th> </tr> </thead> <tbody> <tr> <td data-bbox="407 1543 1088 1596">Microsoft Word Document BS-CYBR Program Revision Rev 4-25.docx</td> <td data-bbox="1088 1543 1417 1596">Apr 25, 2019 by Terrence P. Fries</td> </tr> </tbody> </table>	File	Modified	Microsoft Word Document BS-CYBR 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>
All Liberal Studies courses are required to include perspectives on cultures and have a supplemental reading.	
Please answer the following questions.	
Liberal Studies courses must include the perspectives and contributions of ethnic and racial minorities and of women whenever appropriate to the subject matter. Please explain how this course will meet this criterion.	
Liberal Studies courses require the reading and use by students of at least one non-textbook work of fiction or non-fiction or a collection of related articles. Please describe how your course will meet this criterion.	

Teacher Education Section

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

If Completing this Section, Check the Box to the Right:	NOTE: you must check this box if the Course/Program has previously been approved for Teacher Education related items
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Course Designations:					
Key Assessments					
	<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="397 378 1404 472"> <thead> <tr> <th data-bbox="397 378 1088 409">File</th> <th data-bbox="1088 378 1404 409">Modified</th> </tr> </thead> <tbody> <tr> <td data-bbox="397 430 1088 462">Microsoft Word Document BS-CYBR Program Revision Rev 4-25.docx</td> <td data-bbox="1088 430 1404 462">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-CYBR Program Revision Rev 4-25.docx	Apr 25, 2019 by Terrence P. Fries
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Narrative Description of the Required Content	<i>How the proposal relates to the Education Major</i>				

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>