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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;~~

| <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="228 1077 1235 1178"> <thead> <tr> <th data-bbox="228 1077 911 1125">File</th> <th data-bbox="915 1077 1235 1125">Modified</th> </tr> </thead> <tbody> <tr> <td data-bbox="228 1131 911 1167">Microsoft Word Document BS-CYBR Program Revision Rev 4-25.docx</td> <td data-bbox="915 1131 1235 1167">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 |
| File | Modified | | | | |
| Microsoft Word Document BS-CYBR Program Revision Rev 4-25.docx | Apr 25, 2019 by Terrence P. Fries | | | | |


| <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="412 1503 1417 1604"> <thead> <tr> <th data-bbox="412 1503 1094 1551">File</th> <th data-bbox="1099 1503 1417 1551">Modified</th> </tr> </thead> <tbody> <tr> <td data-bbox="412 1558 1094 1593">Microsoft Word Document BS-CYBR Program Revision Rev 4-25.docx</td> <td data-bbox="1099 1558 1417 1593">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

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| <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> |
|---|--|

Liberal Studies Course Designations (Check all that apply)

| 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="396 380 1406 470"> <thead> <tr> <th data-bbox="396 380 1089 415">File</th> <th data-bbox="1089 380 1406 415">Modified</th> </tr> </thead> <tbody> <tr> <td data-bbox="396 432 1089 470">Microsoft Word Document BS-CYBR Program Revision Rev 4-25.docx</td> <td data-bbox="1089 432 1406 470">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 | | | | | |