Template G

14-169b
Provost-app 4/14/15
UWUCC: Ap. 4/14/15
Senate App-4/28/15

Program Revision 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; 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.

Contact Person:	Terrence P. Fries	Email Address:	t.fries@iup.edu
Proposing Depart/Unit:	Computer Science	Phone:	724-357-4492

Program Revisions (Check all that apply): ☒ Program Revision ☐ Program Title Change ☐ Catalog Description Change ☐ Credit Hour Change ☐ Liberal Studies Requirement Changes ☐ Variability of Delivery ☐ Other: Click here to enter text.

Current Program Information		Proposed Changes	
Current Program Title	Bachelor of Science - Computer Science/Information Assurance Track	Proposed Program Title *(if changing)*	Click here to enter text.
Current Narrative Catalog Description	Click here to enter text.	Proposed Narrative Catalog Description *(if changing)*	Click here to enter text.
Current Program Requirements	**Bachelor of Science - Computer Science/ Information Assurance Track** **Liberal Studies:** As outlined in Liberal Studies section with the following specifications: **43-44** **Social Science:** CRIM 101 (1) **Mathematics:** **3cr**, MATH 125 (2) **Liberal Studies Electives:** **3cr**, MATH 216, no courses with COSC prefix **Major:** **49** ~~**Required**~~ **Courses:** COSC 105 Fundamentals of Computer Science 3cr	Proposed Program Requirements *(if changing)*	**Bachelor of Science - Computer Science/ Information Assurance Track** **Liberal Studies:** As outlined in Liberal Studies section with the following specifications: **43-44** **Social Science:** ***3cr***, CRIM 101 (1) **Mathematics:** **3cr**, MATH 125 (2) **Liberal Studies Electives:** **3cr**, MATH 216, no courses with COSC prefix **Major:** **49** ***Core*** **Courses:** COSC 105 Fundamentals of Computer Science 3cr

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	COSC 110 Problem Solving and Structured Programming	3cr		COSC 110 Problem Solving and Structured Programming 3cr
	COSC 210 Object-Oriented and GUI Programming	3cr		COSC 210 Object-Oriented and GUI Programming 3cr
	COSC 220 Applied Computer Programming	4cr		COSC 220 Applied Computer Programming 4cr
	COSC 300 Computer Organization and Assembly Language	3cr		COSC 300 Computer Organization and Assembly Language 3cr
	COSC 310 Data Structures and Algorithms	3cr		COSC 310 Data Structures and Algorithms 3cr
	COSC 319 Software Engineering Concepts	3cr		COSC 319 Software Engineering Concepts 3cr
	COSC 341 Intro to Database Management Systems	3cr		COSC 341 Intro to Database Management Systems 3cr
	COSC 380 Seminar in Computing Profession and Ethics	2cr		COSC 380 Seminar in Computing Profession and Ethics 2cr
	COSC 480 Seminar on Technical Topics	1cr		COSC 480 Seminar on Technical Topics 1cr
	Information Assurance Required Courses:			**Information Assurance Required Courses:**
	COSC 316 Host Computer Security (3,4,5)	3cr		COSC 316 Host Computer Security (3,4,5) 3cr
	COSC 345 Computer Networks	3cr		COSC 345 Computer Networks 3cr
	COSC 356 Network Security (3,4,5)	3cr		COSC 356 Network Security (3,4,5) 3cr
	Select one of the following:			Select one of the following:
	COSC 473 Software Engineering Practice or COSC 493 Internship in Computer Science (6)	3cr		COSC 473 Software Engineering Practice or COSC 493 Internship in Computer Science (6) 3cr
	Controlled Electives: 6cr from the following: (7)			**Controlled Electives:** 6cr from the following: (7,8)
	COSC/IFMG 354 Testing and Controlling LANs	3cr		COSC/IFMG 354 Testing and Controlling LANs 3cr
	COSC 362 Unix Systems	3cr		COSC 362 Unix Systems 3cr
	COSC 365 Web Architecture and Application Development	3cr		COSC 365 Web Architecture and Application Development 3cr
	COSC 481 Special Topics in Computer Science (only sections approved for majors)	3cr		COSC 481 Special Topics in Computer Science (only sections approved for majors) 3cr
	IFMG 382 Auditing for EDP Systems	3cr		IFMG 382 Auditing for EDP Systems 3cr
	Upper level Electives: 3cr from the following:			**Upper level Electives:** 3cr from the following: (8)
	COSC 432 Operating Systems	3cr		COSC 432 Operating Systems 3cr
	COSC 427 Introduction to Cryptography	3cr		COSC 427 Introduction to Cryptography 3cr
	COSC 429 Digital Forensics	3cr		COSC 429 Digital Forensics 3cr
	COSC 454 Information Assurance Administration (5)	3cr		COSC 454 Information Assurance Administration (5) 3cr
	COSC 465 Distributed Processing and Web Services	3cr		COSC 465 Distributed Processing and Web Services 3cr
	COSC 482 Independent Study	3cr		COSC 482 Independent Study 3cr
	~~COSC 400-level course with department approval~~	~~3cr~~		
	Minor in Criminology (1)	**15**		**Minor in Criminology** (1) **15**
	Other Requirements	**6**		**Other Requirements** **3**
	Additional Writing:			**Additional Mathematics:**
	~~ENGL 222 Technical Writing~~	~~3cr~~		MATH 219 Discrete Mathematics 3cr
	Additional Mathematics:			
	MATH 219 Discrete Mathematics	3cr		**Free Electives:** **9-10**
	Free Electives:	**6-7**		**Total Degree Requirements:** **120**
	Total Degree Requirements:	**120**		(1) CRIM 101 (taken as part of the social science requirement) is counted as part of the 18cr Criminology minor. Fifteen (15) additional credits of CRIM are required.
	(1) CRIM 101 (taken as part of the social science requirement) is			

	counted as part of the 18cr Criminology minor. Fifteen (15) additional credits of CRIM are required. (2) MATH 125 can be substituted by MATH 121. (3) A CNSS 4011 certificate will be granted on completion of COSC 316, COSC 356, CRIM 321, and CRIM 323. (4) A CNSS 4012 certificate will be granted on completion of COSC 316, COSC 356, COSC 454, CRIM 321, and CRIM 323. (5) A CNSS 4013 certificate will be granted on completion of COSC 220, COSC 316, COSC 356, CRIM 321, and CRIM 323. (6) COSC 493 may be selected after completion of sophomore year. Note: Only 3cr of first 6cr of COSC 493 can be counted toward controlled electives or 6cr of a total 12cr of COSC 493 can be counted towards major. A student who does not complete all 12cr of COSC 493 must take COSC 473. (7) Upper-level electives may be counted as controlled electives. 3cr of Intermediate Level foreign language may be applied toward controlled electives.		(2) MATH 125 can be substituted by MATH 121. (3) A CNSS 4011 certificate will be granted on completion of COSC 316, COSC 356, CRIM 321, and CRIM 323. (4) A CNSS 4012 certificate will be granted on completion of COSC 316, COSC 356, COSC 454, CRIM 321, and CRIM 323. (5) A CNSS 4013 certificate will be granted on completion of COSC 220, COSC 316, COSC 356, CRIM 321, and CRIM 323. (6) COSC 493 may be selected after completion of sophomore year. Note: Only 3cr of first 6cr of COSC 493 can be counted toward controlled electives or 6cr of a total 12cr of COSC 493 can be counted towards major. A student who does not complete all 12cr of COSC 493 must take COSC 473. (7) Upper-level electives may be counted as controlled electives. 3cr of Intermediate Level foreign language may be applied toward controlled electives. *(8) Controlled and upper level electives may not be applied toward more than one track in Computer Science.*

Rationale for Proposed Changes	
Why is the program being revised?	This program revision represents the department's effort to comply with PASSHE Policy 1990-06-A which limits a Bachelor of Science degree to no more than 60 semester credit hours in courses required by the major, including required cognate courses in related disciplines. The Department of Computer Science has been designated as a National Center of Academic Excellence in Information Assurance Education (CAE/IAE) by the National Security Agency and the Department of Homeland Security based upon this track. It is not possible to reduce the number of major and cognate credits to 60 due to the stringent requirements of the designation. This is primarily due to the 18 credits necessary for a minor in Criminology. However, we were able to discover small adjustments that allowed us to reduce the number of credits. This revision reduces the major and cognate requirements, not including the Criminology minor, to 58 credits. A request for a waiver of the credit limit was submitted. The revision also adds minor adjustments to the controlled and upper level electives to limit the ability to apply credit for a single class to multiple tracks in Computer Science. The specifics are: a. Remove ENGL 222 as an additional writing requirement. This was done to reduce the number of required credits as close to 60 as possible while maintaining the requirements necessary for the department's designation as a Center of Academic Excellence in Information Assurance Education by the Department of Homeland Security and the National Security Agency.

	b. Add note (8) to limit the ability to apply credit for a single class to multiple tracks in Computer Science.
Identify the **Program** Student Learning Outcomes (SLO). Mark any SLOs that are changing as a part of the Program Revision.	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. 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 information assurance 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. There are no changes to the SLOs..

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Implication of the Change on: - Program - Other programs - Current Students	There is no effect on this program or current students. This change may affect the enrollment in ENGL 222. While the department is reluctant to remove that requirement, it is necessary to reduce the number of cognate credits as required by the Board of Governors.