

LSC Use Only No: <u>07-165.</u>	LSC Action-Date:	UWUCC USE Only No.	UWUCC Action-Date:
		Senate Action Date: <u>App-12/4/07</u>	<u>App-10/30/07</u>

**Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee**

Contact Person: <b>David T. Smith</b>	Email Address: <b>dtsmith@iup.edu</b>
Proposing Department/Unit: <b>Computer Science</b>	Phone: <b>7-4478</b>

Check all appropriate lines and complete information as requested. Use a separate cover sheet for each course proposal and for each program proposal.

<b>1. Course Proposals (check all that apply)</b> <input type="checkbox"/> New Course <input type="checkbox"/> Course Prefix Change <input type="checkbox"/> Course Deletion <input type="checkbox"/> Course Revision <input type="checkbox"/> Course Number and/or Title Change <input type="checkbox"/> Catalog Description Change	
<u>Current</u> Course prefix, number and full title	<u>Proposed</u> course prefix, number and full title, if changing
<b>2. Additional Course Designations: check if appropriate</b> <input type="checkbox"/> This course is also proposed as a Liberal Studies Course. <input type="checkbox"/> Other: (e.g., Women's Studies, Pan-African) <input type="checkbox"/> This course is also proposed as an Honors College Course.	
<b>3. Program Proposals</b> <input type="checkbox"/> New Degree Program <input checked="" type="checkbox"/> Catalog Description Change <input checked="" type="checkbox"/> Program Revision <input type="checkbox"/> New Minor Program <input type="checkbox"/> Program Title Change <input type="checkbox"/> Other <input type="checkbox"/> New Track	
<u>Bachelor of Arts- Computer Science</u>	<u>Proposed</u> program name, if changing
<b>4. Approvals</b>	
Dept Curriculum Committee Chair	Date
<i>[Signature]</i>	5 Dec 06
Department Chair	
<i>[Signature]</i>	12/7/06
Coll. Curriculum Committee Chair	
<i>[Signature]</i>	05/17/07
College Dean	
<i>[Signature]</i>	9/24/07
Director of Liberal Studies *	
<i>[Signature]</i>	9/27/07
Director of Honors College *	
Provost *	
<i>[Signature]</i>	10/29/07
Additional signatures as appropriate: (include title)	
UWUCC Co-Chairs	
<i>[Signature]</i>	10/30/07

\* where applicable



Received  
 SEP 25 2007  
 Liberal Studies

## Part II. Description of Curriculum Change

### 1. Catalog Description for the Revised Bachelor of Arts- Computer Science

<b>Liberal Studies:</b> As outlined in Liberal Studies section with the following specifications: <b>Mathematics:</b> 3cr, MATH 125 (1) <b>Liberal Studies Electives:</b> 3cr, MATH 216	<b>48</b>
<b>Major:</b>	<b>37</b>
<b>Required Courses:</b>	
COSC 105 Fundamentals of Computer Science	3cr
COSC 110 Problem Solving and Structured Programming	3cr
COSC 210 Object-Oriented and GUI Programming	3cr
COSC 220 Applied Computer Programming	4cr
COSC 300 Computer Organization and Assembly Language	3cr
COSC 310 Data Structures and Algorithms	3cr
COSC 341 Intro to Database Management Systems	3cr
COSC 380 Seminar in Computing Profession and Ethics	2cr
COSC 480 Seminar on Technical Topics	1cr
<b>Controlled Electives:</b> 6cr from the following:	(2)
COSC/MATH 250 Introduction to Numerical Methods	3cr
COSC 316 Host Computer Security	3cr (3)
COSC 319 Software Engineering Concepts	3cr
COSC 320 Software Engineering Practice	3cr
COSC 345 Computer Networks	3cr
COSC/IFMG 354 Testing and Controlling LANs	3cr
COSC 355 Computer Graphics	3cr
COSC 356 Network Security	3cr
COSC 362 Unix Systems	3cr
COSC 365 Web Architecture and Application Development	3cr
COSC 481 Special Topics in Computer Science (only sections approved for majors)	1-4cr
COSC 482 Independent Study	1-4cr
COSC 493 Internship in Computer Science	12cr (4)
IFMG 455 Data Warehousing & Mining	3cr
<b>Upper-level Electives by Categories:</b>	6cr (5)
Artificial Intelligence: COSC 405	
Computer Architecture: COSC 410	
Database Management: COSC 444	
Numerical Methods: COSC 427, 451	
Systems Programming: COSC 430, 432	
Theory of Languages: COSC 420, 424, 460	
<b>Other Requirements:</b>	<b>6-12</b>
<b>Additional Writing:</b>	
ENGL 322 Technical Writing	3cr
Foreign Language Intermediate Level	0-6cr
<b>Additional Mathematics:</b>	3cr
MATH 219 Discrete Mathematics	
<b>Free Electives:</b>	<b>23-29</b>
<b>Total Degree Requirements:</b>	<b>120</b>

- (1) MATH 125 can be substituted by MATH 121.
- (2) Select at least 6cr from the list of controlled electives. Note: Only 4cr of COSC 493 can be counted toward these 6cr.
- (3) COSC 316 cannot be counted for major credit if a student is an Information Assurance minor.
- (4) COSC 493 may be selected in either the second semester of the junior year or the first semester of the senior year. If COSC 493 is selected and approved, COSC 380 should be taken in the immediately preceding semester
- (5) Select at least two additional courses, from at least two different categories, from the list of upper-level electives.

## 2. Summary of Changes

### a) Side-by-side comparison of Current and Proposed programs (the changes are shown in italics).

Current Program		Proposed Program	
<b>Bachelor of Arts - Computer Science</b>		<b>Bachelor of Arts - Computer Science</b>	
<b>Liberal Studies:</b> As outlined in Liberal Studies section with the following specifications:	<b>50</b>	<b>Liberal Studies:</b> As outlined in Liberal Studies section with the following specifications:	<b>48</b>
<b>Mathematics:</b> MATH 123 (1)		<b>Mathematics:</b> <i>3cr, MATH 125 (3cr)</i> (1)	
<b>Liberal Studies Electives:</b> MATH 216 (1) (4cr)		<b>Liberal Studies Electives:</b> <i>3cr, MATH 216</i>	
<b>Major:</b>	<b>36</b>	<b>Major:</b>	<b>37</b>
<b>Required Courses:</b>		<b>Required Courses:</b>	
COSC 105 Fundamentals of Computer Science	3cr	COSC 105 Fundamentals of Computer Science	3cr
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 Assembly Language Programming	3cr	<i>COSC 300 Computer Organization and Assembly Language</i>	3cr
COSC 310 Data Structures and Algorithms	3cr	COSC 310 Data Structures and Algorithms	3cr
COSC 341 Intro to Database Management Systems	3cr	COSC 341 Intro to Database Management Systems	3cr
COSC 380 Seminar on the Computer Profession	1cr	<i>COSC 380 Seminar in Computing Profession and Ethics</i>	2cr
COSC 480 Seminar on Technical Topics	1cr	COSC 480 Seminar on Technical Topics	1cr
<b>Controlled Electives:</b> 6cr from the following:	(2)	<b>Controlled Electives:</b> 6cr from the following:	(2)
COSC 250 Introduction to Numerical Methods	3cr	<i>COSC/MATH 250</i> Introduction to Numerical Methods	3cr
<del>COSC 304 Interactive Internet Programming with Java</del>	<del>3cr</del>	COSC 316 Host Computer Security	3cr (3)
COSC 316 Host Computer Security	3cr (3)	COSC 319 Software Engineering Concepts	3cr
COSC 319 Software Engineering Concepts	3cr	COSC 320 Software Engineering Practice	3cr(4)
COSC 320 Software Engineering Practice	3cr	<i>COSC 345 Computer Networks</i>	3cr
<del>COSC 344 Productivity Tools and 4th Generation Languages</del>	<del>3cr</del>	COSC/IFMG 354 Testing and Controlling LANs	3cr
COSC 345 Data Communications	3cr	COSC 355 Computer Graphics	3cr
COSC/IFMG 354 Testing and Controlling LANs	3cr	COSC 356 Network Security	3cr
COSC 355 Computer Graphics	3cr	<i>COSC 365 Web Architecture and Application Development</i>	3cr
COSC 356 Network Security	3cr	COSC 481 Special Topics in Computer Science (only sections approved for majors)	1-4cr
<del>COSC 360 IBM Job Control Language</del>	<del>1cr</del>	COSC 482 Independent Study	1-4cr
COSC 362 Unix Systems	3cr	COSC 493 Internship in Computer Science	12cr (4)
COSC 481 Special Topics in Computer Science (only sections approved for majors)	1-4cr	IFMG 455 Data Warehousing & Mining	3cr
COSC 482 Independent Study	1-4cr		
COSC 493 Internship in Computer Science	12cr (4)		
IFMG 455 Data Warehousing & Mining	3cr		
<b>Upper-level Electives by Categories:</b>	<b>6cr (5)</b>	<b>Upper-level Electives by Categories:</b>	<b>6cr (5)</b>
Artificial Intelligence: COSC 405		Artificial Intelligence: COSC 405	
Computer Architecture: COSC 410		Computer Architecture: COSC 410	
Data Base Management: <del>COSC 415</del>		Data Base Management: <i>COSC 444</i>	
Numerical Methods: COSC 427, 450, 451		Numerical Methods: COSC 427, 451	
Systems Programming: COSC 430, 432		Systems Programming: COSC 430, 432	
Theory of Languages: <del>COSC 419, 420, 424, 460</del>		Theory of Languages: COSC 420, 424, 460	
<b>Other Requirements:</b>	<b>6-12</b>	<b>Other Requirements:</b>	<b>6-12</b>
<b>Additional Writing:</b>		<b>Additional Writing:</b>	
ENGL 322 Technical Writing	3cr	ENGL 322 Technical Writing	3cr
Foreign Language Intermediate Level	0-6cr	Foreign Language Intermediate Level	0-6cr
<b>Additional Mathematics:</b>	<b>3cr(1)</b>	<b>Additional Mathematics:</b>	<b>3cr</b>
MATH 219 Discrete Mathematics		MATH 219 Discrete Mathematics	

**Current Program**

**Free Electives:** 22-28  
**Total Degree Requirements:** 120

- (1) MATH 123 can be substituted by taking both MATH 121 and 122. MATH 216 can be substituted by taking both MATH 214 and 417 or both MATH 217 and 417.
- (2) Select at least 6cr from the list of controlled electives. Note: Only 4cr of COSC 493 may be counted toward these 6cr.
- (3) COSC 316 cannot be counted for major credit if a student does an Information Assurance minor.
- (4) COSC 493 may be selected in either the second semester of the junior year or the first semester of the senior year. If COSC 493 is selected and approved, COSC 380 may be taken in the immediately preceding semester.
- (5) Select at least two additional courses, from at least two different categories, from the list of upper-level electives.

**Proposed Program**

**Free Electives:** 9-15 23-29  
**Total Degree Requirements:** 120

- (1) *MATH 125 can be substituted by MATH 121.*
- (2) Select at least 6cr from the list of controlled electives.
- (3) COSC 316 cannot be counted for major credit if a student does an Information Assurance minor.
- (4) Credit for both COSC 320 and 493 may be counted toward the degree, but only one will be counted toward the major requirements. **Note: Only 4cr of COSC 493 can be counted toward these 6cr.** COSC 493 may be selected in either the second semester of the junior year or the first semester of the senior year. If COSC 493 is selected and approved, COSC 380 may be taken in the immediately preceding semester.
- (5) Select at least two additional courses, from at least two different categories, from the list of upper-level electives.

## **b) List of associated course changes**

The following courses have changed course numbers:

**COSC 415 Internet Architecture and Programming**, revised, re-numbered and re-titled  
as **COSC 365 Web Architecture and Application Development**  
**COSC 344 Productivity Tools and Fourth Generation Language** re-numbered as **COSC 444**

The following courses have been deleted:

**COSC 304 Interactive Internet Programming with Java**  
**COSC 360 IBM Job Control Language**  
**COSC 419 Software Development with Ada**  
**COSC 450 Applied Numerical Methods**

## **3. Rationale**

Track is modified to reflect course deletions, re-numbering, and re-titling. Additional rationale is provided in the individual proposals.

- a) MATH 123 is replaced by a new course, MATH 125 by the Department of Mathematics. The credit hours of MATH 125 are 3. These changes were approved by the Senate.
- b) The credit hours of MATH 216 are reduced from 4 to 3 by the Department of Mathematics and were approved by the Senate.
- c) Liberal studies credit hours are reduced from 50 to 48 because of reduced credit hours of MATH 125 and 216.
- d) MATH 217/417 or MATH 214/417 option is removed because computer science majors require only one course on probability and statistics; and MATH 216 Probability and Statistics for Natural Sciences, even after being reduced to three credits, still provides the statistics and approach we need. The content of MATH 216 is now closer to that of MATH 214 and 217; so we will leave it to the department chair's discretion as to accepting MATH 214 or MATH 217 in lieu of MATH 216, rather than require an additional course MATH 417 to insure comparable coverage.
- e) COSC 365 is now controlled elective since it is no longer a 400 level course.
- f) COSC 444 is an upper level elective since it is now a 400 level course.
- g) COSC 360, 419 and 450 are courses that have not been taught in over 5 years. Content covered in these courses are no longer required by industry. Both are being deleted from the curriculum and all programs that reference them.

## **Part III. Implementation**

### **1. Proposed Date of Change.**

It is proposed that the changes be implemented for the 2006-2007 academic year.

### **2. Effects on Currently Enrolled Students.**

There are no effects on students. Effected courses completed by students will be credited towards program requirements as per current program.

### **3. Effects on Faculty/Resources.**

There are no overall effects to the Computer Science faculty. Resources are adequate.

#### **4. Effects on the Number of Students.**

It is expected that there will be no effects on the number of students in the program

#### **Part IV. Periodic Assessment**

The assessment of the success of the proposed changes described in this proposal will be performed as part of the Computer Science Department's overall curriculum assessment policies. This change is minor and will not affect the way current assessment is done.

#### **Part V. Course Proposals**

There are no new courses.

#### **Part VI. Letters of Support or Acknowledgement**

Letters of Support or Acknowledgement for the deletion of COSC 304 and the change in number for COSC 344 are provided in individual proposals for each.