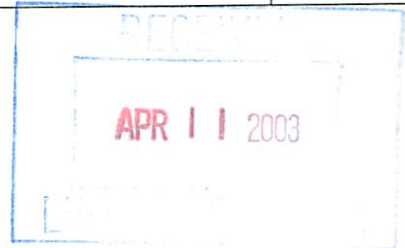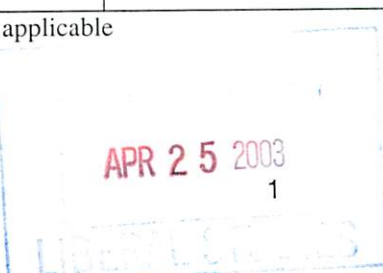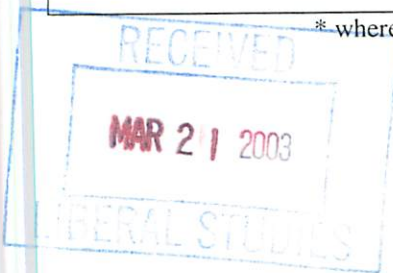| LSC Use Only No: LSC Action-Date:	UWUCC USE Only No. UWUCC Action-Date:
	Senate Action Date: 02-10/d App 4/22/03 Senate App 4/29/03

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person: **Sanwar Ali**	Email Address: **sanwar@iup.edu**
Proposing Department/Unit: **Computer Science**	Phone: **7-7994**

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

1. **Course Proposals (check all that apply)**

_____New Course   _____Course Prefix Change   _____Course Deletion

_____Course Revision   _____Course Number and/or Title Change   _____Catalog Description Change

Current Course prefix, number and full title	_Proposed course prefix, number and full title, if changing_

2. **Additional Course Designations: check if appropriate**

_____ This course is also proposed as a Liberal Studies Course.   _____ Other: (e.g., Women's Studies, Pan-African)

_____ This course is also proposed as an Honors College Course.

3. **Program Proposals**

_____New Degree Program   _____Catalog Description Change   __X__ Program Revision

_____New Minor Program   _____Program Title Change   _____Other

                              _____New Track

Bachelor of Science- Computer Science/ Applied Computer Science Track	Proposed program name, if changing
Current program name	_Proposed program name, if changing_

4. **Approvals**

		Date
Dept Curriculum Committee Chair	_Sanwar Ali._	3/10/03
Department Chair	_[signature]_	10 Mar 03
Coll. Curriculum Committee Chair	_[signature]_	03/21/03
College Dean	_John D. Eck_	3/21/03
Director of Liberal Studies *		
Director of Honors College *		
Provost *		
Additional signatures as appropriate:		
(include title)		
UWUCC Co-Chairs		

* where applicable

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Program Revision- B.S. Computer Science/ Applied Computer Science Track

Part II. Description of Curriculum Change

1.   Catalog Description for the Revised Bachelor of Science- Computer Science/Applied Computer Science Track

Liberal Studies: As outlined in Liberal Studies   **50**
section with the following specifications:
Mathematics: MATH 123 (1)
Liberal Studies Electives: 4 cr. MATH 216 (1)

Major: **39**
Required Courses:
COSC 105 Fundamentals of Computer Science   3sh
COSC 110 Problem Solving and Structured
                Programming   3sh
COSC 210 Object Oriented and GUI Programming   3sh
COSC 220 Applied Computer Programming   4sh
COSC 300 Assembly Language Programming   3sh
COSC 310 Data Structures and Algorithms   3sh
COSC 319 Software Engineering Concepts   3sh
COSC 341 Intro to Database Management Systems   3sh
COSC 380 Seminar on the Computer Profession   1sh
COSC 480 Seminar on Technical Topics   1sh
Select one of the following two courses: (2)
COSC 304 Interactive Internet Programming with Java 3sh
COSC 344 Productivity Tools and 4th Generation
                Languages   3sh
Select one of the following two courses:
COSC 320 Software Engineering Practice   3sh (3)
COSC 493 Internship in Computer Science   12sh (4)

Controlled Electives:
Select 3sh from the following: (5)
COSC 250 Introduction to Numerical Methods   3sh
COSC 316 Cybersecurity Basics   3sh (6)
COSC 345 Data Communications   3sh
COSC/IFMG 354 Testing and Controlling LANs   3sh
COSC 355 Computer Graphics   3sh
COSC 356 Network Security   3sh
COSC 360 IBM Job Control Language   1sh
COSC 362 Unix Systems   3sh
COSC 481 Special Topics in Computer Science
                (only sections approved for majors)   1-4sh
COSC 482 Independent Study   1-4sh
IFMG 455 Data Warehousing & Mining   3sh
Upper-level Electives by Categories: 3sh (7)
Select 3sh from the following:
Computer Architecture: COSC 410
Database Management: COSC 415
Theory of Languages: COSC 419, 420, 424, 460
Systems Programming: COSC 430, 432
Numerical Methods: COSC 427, 450, 451
Artificial Intelligence: COSC 405

Other Requirements: **12**
Additional Writing:
ENGL 322 Technical Writing   3sh
Foreign Language   6sh
Additional Mathematics: 3 sh (1)

MATH 219 Discrete Mathematics

Complete a minor from one of the following areas:		**7-18**
Any department in the College of NSM	6-18sh	
Information Assurance	18sh	
Designated Business courses	18sh	
Designated Economics courses	15sh	
Designated Geography courses	15sh	
Designated Communications Media courses	18sh	

Free Electives: **1-12**

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)   Credit for both COSC 304 and 344 may be counted toward the degree, but only one will be counted toward the major requirements.

(3)   Credit for both COSC 320 and 493 may be counted toward the degree, but only one will be counted toward the major requirements.

(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 3sh from the list of controlled electives and/or the list of upper-level electives.

(6)   COSC 316 cannot be counted for major credit if a student does an Information Assurance minor.

(7)   Select at least one additional course from list of upper-level electives.

Program Revision- B.S. Computer Science/ Applied Computer Science Track

2. Summary of Changes

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

Current Program

Bachelor of Science - Computer Science/Applied Computer Science Track

Liberal Studies: As outlined in Liberal Studies section with the following specifications:	**54-58**
Mathematics: MATH 123 (or MATH 121 and 122)	
Liberal Studies Electives: MATH 216 (or MATH 214 or 217), no courses with COSC prefix	

Major:	**39**
Required Courses:	
COSC 105 Fundamentals of Computer Science	3sh
COSC 110 Problem Solving and Structured Programming	3sh
COSC 210 Object Oriented and GUI Programming	3sh
COSC 220 Applied Computer Programming	4sh
COSC 300 Assembly Language Programming	3sh
COSC 310 Data Structures and Algorithms	3sh
COSC 319 Software Engineering Concepts	3sh
COSC 341 Intro to Database Management Systems	3sh
COSC 380 Seminar on the Computer Profession	1sh
COSC 480 Seminar on Technical Topics	1sh
Select one of the following two courses: (1)	
COSC 304 Interactive Internet Programming with Java	3sh
COSC 344 Productivity Tools and 4th Generation Languages	3sh
Select one of the following two courses: (2)	
COSC 320 Software Engineering Practice	3sh
COSC 493 Internship in Computer Science	12sh(3)
Controlled Electives:	
Select 3sh from the following: (4)	
COSC 250 Introduction to Numerical Methods	3sh
COSC 345 Data Communications	3sh
COSC/IFMG 354 Testing and Controlling LANs	3sh
COSC 355 Computer Graphics	3sh
COSC 360 IBM Job Control Language	1sh
COSC 362 Unix Systems	3sh
COSC 481 Special Topics in Computer Science (only sections approved for majors)	1-4sh
COSC 482 Independent Study	1-4sh
IFMG 455 Data Warehousing & Mining	3sh
Upper-level Electives by Categories:	
Select 3sh from the following: (5)	3sh
Computer Architecture: COSC 410	
Database Management: COSC 415	
Theory of Languages: COSC 419, 420, 424, 460	
Systems Programming: COSC 430, 432	
Numerical Methods: COSC 450, 451	
Artificial Intelligence: COSC 405	
Other Requirements:	**6-22**
Additional Writing:	
ENGL 322 Technical Writing	3sh
Foreign Language Intermediate Level	0-6sh(6)
Additional Mathematics:	3-13sh(7)
MATH 123 Calculus I for Physics, Chemistry and Mathematics (MATH 121 and 122 may be substituted)	
MATH 216 Probability and Statistics for Natural Sciences (MATH 363 and 364, MATH 214 and 417, or MATH 217 and 417 may be substituted)	
MATH 219 Discrete Mathematics	

Proposed Program

Bachelor of Science - Computer Science/Applied Computer Science Track

Liberal Studies: As outlined in Liberal Studies section with the following specifications:	**50**
Mathematics: MATH 123 (1)	
Liberal Studies Electives: 4 cr. MATH 216 (1)	

Major:	**39**
Required Courses:	
COSC 105 Fundamentals of Computer Science	3sh
COSC 110 Problem Solving and Structured Programming	3sh
COSC 210 Object Oriented and GUI Programming	3sh
COSC 220 Applied Computer Programming	4sh
COSC 300 Assembly Language Programming	3sh
COSC 310 Data Structures and Algorithms	3sh
COSC 319 Software Engineering Concepts	3sh
COSC 341 Intro to Database Management Systems	3sh
COSC 380 Seminar on the Computer Profession	1sh
COSC 480 Seminar on Technical Topics	1sh
Select one of the following two courses: (2)	
COSC 304 Interactive Internet Programming with Java	3sh
COSC 344 Productivity Tools and 4th Generation Languages	3sh
Select one of the following two courses:	
COSC 320 Software Engineering Practice	3sh (3)
COSC 493 Internship in Computer Science	12sh (4)
Controlled Electives:	
Select 3sh from the following: (5)	
COSC 250 Introduction to Numerical Methods	3sh
COSC 316 Cybersecurity Basics	*3sh (6)*
COSC 345 Data Communications	3sh
COSC/IFMG 354 Testing and Controlling LANs	3sh
COSC 355 Computer Graphics	3sh
COSC 356 Network Security	*3sh*
COSC 360 IBM Job Control Language	1sh
COSC 362 Unix Systems	3sh
COSC 481 Special Topics in Computer Science (only sections approved for majors)	1-4sh
COSC 482 Independent Study	1-4sh
IFMG 455 Data Warehousing & Mining	3sh
Upper-level Electives by Categories:	
Select 3sh from the following:	3sh (7)
Computer Architecture: COSC 410	
Database Management: COSC 415	
Theory of Languages: COSC 419, 420, 424, 460	
Systems Programming: COSC 430, 432	
Numerical Methods: COSC 427, 450, 451	
Artificial Intelligence: COSC 405	
Other Requirements:	*12*
Additional Writing:	
ENGL 322 Technical Writing	3sh
Foreign Language	6sh
Additional Mathematics:	*3sh (1)*
MATH 219 Discrete Mathematics	

Program Revision- B.S. Computer Science/ Applied Computer Science Track

Current Program

Complete a minor from one of the following areas:	**6-18**
Any department in the College of Natural Sciences and Mathematics	6-18sh
Designated Business courses	18sh
Designated Economics courses	15sh
Designated Geography courses	15sh
Designated Communications Media courses	18sh

Free Electives: **0-19**

Total Degree Requirements: **124**

(1) Credit for both COSC 304 and 344 may be counted toward the degree, but only one will be counted toward the major requirements.

(2) Credit for both COSC 320 and 493 may be counted toward the degree, but only one will be counted toward the major requirements.

(3) 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.

(4) Select at least 3sh from the list of controlled electives and/or the list of upper-level electives.

(5) Select at least one additional course from list of upper-level electives.

(6) Foreign Language intermediate-level courses are counted as Liberal Studies electives.

(7) Any of the Mathematics options satisfy the Learning Skill requirement, and one course may be counted as a Liberal Studies elective. The 3sh minimum applies to students who take MATH 123 and 216. The 13sh maximum applies to students who take the MATH 121and 122 calculus options and the MATH 363 and 364 statistics option.

Proposed Program

Complete a minor from one of the following areas:	**7-18**
Any department in the College of NSM	7-18sh
Information Assurance	*18sh*
Designated Business courses	18sh
Designated Economics courses	15sh
Designated Geography courses	15sh
Designated Communications Media courses	18sh

Free Electives: **1-12**

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. The three credit minimum applies to students who take MATH 123 and 216. The nine-credit maximum applies to students who do not take MATH 123 and MATH 216 but choose alternatives in addition to MATH 219.

(2) Credit for both COSC 304 and 344 may be counted toward the degree, but only one will be counted toward the major requirements.

(3) Credit for both COSC 320 and 493 may be counted toward the degree, but only one will be counted toward the major requirements.

(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 3sh from the list of controlled elective and/or the list of upper-level electives.

(6) COSC 316 cannot be counted for major credit if a student does an Information Assurance minor.

(7) Select at least one additional course from list of upper level electives.

3. Description of Changes and Justification:

a) MATH 122 is deleted because only 3 or 4sh are needed for the Math component of Liberal Studies. If student takes MATH 121, she/he must also take MATH 122 for the Computer Science requirement (equivalent to MATH 123) but not as a Liberal Studies requirement.

b) Two new courses, COSC 356 and COSC 427, were added in the controlled and upper-level electives respectively. The above two courses are part of Information Assurance (IA) track. Students from BS/Applied Computer Science track expressed interest to take these courses. To provide an opportunity to these students we added the above two courses.

c) MATH 363 has been deleted from the proposed program because the prerequisite for this course is MATH 216. Our students must take MATH 216, which by itself satisfies the statistics requirement for Computer Science majors. Therefore, it is redundant in keeping MATH 363. (Please see the supporting letter from the Mathematics department). MATH 364 is also deleted because the prerequisite for this course is MATH 363. (Please see the supporting letter from the Mathematics department).

d) In the list of minors, we added an additional minor in Information Assurance. The reason for this addition is to provide students in the Applied Computer Science track a choice of taking a minor in Information Assurance along with other minors. Note that COSC 356 and COSC 427, added as controlled and upper-level controlled electives, are not part of the Minor in Information Assurance. (Please see University Undergraduate catalog).

4. Letter of Support: Attached

From: Jim Wolfe <jlwolfe@iup.edu>
Subject: [Fwd: Support for COSC Changes]
Date: Mon, 03 Feb 2003 09:59:04 -0500
To: Sanwar Ali <sanwar@iup.edu>

Here is the letter of support from Math.

From: "Gary Stoudt" <gary.stoudt@verizon.net>
Subject: Support for COSC Changes
Date: Mon, 3 Feb 2003 09:54:15 -0500
To: "Jim Wolfe" <jlwolfe@iup.edu>

Jim,

The Mathematics Department supports the removal of MATH 363/364 from the
choices for "Additional Mathematics" in all Computer Science degree
programs. MATH 363/364 is a course sequence in the theory of
probability and statistics and carries a prerequisite of MATH 216. MATH
216 by itself will satisfy the statistics requirement for Computer
Science majors. This change will have no impact on enrollments in the
Mathematics Department.

Gary

Gary Stoudt, Chairperson
Mathematics Department