

Program Modification

Program modifications must be submitted by October 15, 2013, and finalized by the end of that fall semester for catalog production.
Enter data in **YELLOWED** areas.

Date (Change date if modified and update the file name with the new date): 2014 2015 Catalog Copy 6/25/13; rev 10.9.13

Program Area: Computer Science, B.S.

Semester /Year First affected: Fall 2014

Instructions: Please use this Program Modification form for changes to existing program requirements, units, outcomes, emphases or options, or for other programmatic concerns. For minor changes (faculty or address changes, additions of approved electives, minor editing for clarity, and other minor updates) use the Program Update form, available at the Curriculum website.

Paste the latest approved version of your entire program in the left AND right boxes below. Make your deletions in the LEFT column by using the strikeout feature in Word or underlining, and highlight. Insert new language or other changes to the program on the RIGHT and highlight in **YELLOW** for easy identification. If possible, please align the two columns so that changes appear side-by-side with the original text.

SUMMARY OF CHANGES

1. Removing the requirement that majors take either Database or Graphics.
2. Removing COMP/IT 421 as an elective choice
3. Removing non cross-listed IT courses as electives
4. Removing Technical Writing as an elective

JUSTIFICATION

1. A relic from the original degree proposal. No reason why these elective should be preferred over others.
2. Too much overlap between COMP 362 and COMP/IT 421 (which will be renumbered IT421)
3. Further differentiates the IT and CS degrees; CS students need to take COMP electives
4. CS students need to take COMP electives; students are exposed to significant technical writing in COMP 350

CURRENTLY APPROVED PROGRAM

PROPOSED PROGRAM

Computer Science, B.S. – 120 units	Computer Science, B.S. – 120 units
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Special Grade Requirement A grade of C- or better is required in all pre-requisite courses in the major Summary of Units: Lower Division Requirements 42 Upper Division Requirements 26 Upper Division Elective Major Courses 12 Elective Courses 6 General Education 28 American Institutions Requirement 6 TOTAL 120 Lower Division Requirements - 42 units • COMP 150 - Object-Oriented Programming Units: 4 • COMP 151 - Data Structures and Program Design Units: 4 • COMP 162 - Computer Architecture and Assembly Language Units: 3 • COMP 232 - Programming Languages Units: 3 • COMP 262 - Computer Organization and Architecture Units: 3 • MATH 150 - Calculus I Units: 4 • MATH 151 - Calculus II Units: 4 • MATH 230 - Logic and Mathematical Reasoning (Cross-listed as PHIL 230) Units: 3 • MATH 240 - Linear Algebra Units: 3 Science • PHYS 200 - General Physics I Units: 4 • PHYS 201 - General Physics II Units: 4 • a course from GE section B2 Units: 3 or • PHYS 200 - General Physics I Units: 4 • BIOL 200 - Principles of Organismal and Population Biology Units: 4	Special Grade Requirement A grade of C- or better is required in all pre-requisite courses in the major Summary of Units: Lower Division Requirements 42 Upper Division Requirements 23 Upper Division Elective Major Courses 15 Elective Courses 6 General Education 28 American Institutions Requirement 6 TOTAL 120 Lower Division Requirements - 42 units • COMP 150 - Object-Oriented Programming Units: 4 • COMP 151 - Data Structures and Program Design Units: 4 • COMP 162 - Computer Architecture and Assembly Language Units: 3 • COMP 232 - Programming Languages Units: 3 • COMP 262 - Computer Organization and Architecture Units: 3 • MATH 150 - Calculus I Units: 4 • MATH 151 - Calculus II Units: 4 • MATH 230 - Logic and Mathematical Reasoning (Cross-listed as PHIL 230) Units: 3 • MATH 240 - Linear Algebra Units: 3 Science • PHYS 200 - General Physics I Units: 4 • PHYS 201 - General Physics II Units: 4 • a course from GE section B2 Units: 3 or • PHYS 200 - General Physics I Units: 4 • BIOL 200 - Principles of Organismal and Population Biology Units: 4
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• BIOL 212 - Neurobiology and Cognitive Science (Cross-listed as PSY 212) Units: 3 • GE B1 and B2 Upper Division Requirements - 38 units Required Courses - 26 units • COMP 350 - Introduction to Software Engineering Units: 3 • COMP 362 - Operating Systems Units: 4 • COMP 454 - Automata, Languages, and Computation Units: 3 • COMP 491 - Capstone Preparation Units: 1 • COMP 499 - Capstone Project Units: 3 • MATH 300 - Discrete Mathematics Units: 3 • MATH 352 - Probability and Statistics Units: 3 • MATH 354 - Analysis of Algorithms Units: 3 Choose three units from the following: • COMP 420 - Database Theory and Design (Cross-listed as IT 420) Units: 3 • COMP 464 - Computer Graphic Systems and Design I (Cross-listed as IT 464) Units: 3 Electives - 12 units Choose 12 Elective units from: • COMP 345 - Digital Image Processing (Cross-listed as PHYS 345, MATH 345) Units: 3 • COMP 351 - Distributed Computing Units: 3 • COMP 420 - Database Theory and Design (Cross-listed as IT 420) Units: 3 • COMP 421 - Unix System Programming II (Cross-listed as IT 421) Units: 3 • COMP 424 - Computer System Security (Cross-listed as IT	• BIOL 212 - Neurobiology and Cognitive Science (Cross-listed as PSY 212) Units: 3 • Upper Division Requirements - 38 units Required Courses - 23 units • COMP 350 - Introduction to Software Engineering Units: 3 • COMP 362 - Operating Systems Units: 4 • COMP 454 - Automata, Languages, and Computation Units: 3 • COMP 491 - Capstone Preparation Units: 1 • COMP 499 - Capstone Project Units: 3 • MATH 300 - Discrete Mathematics Units: 3 • MATH 352 - Probability and Statistics Units: 3 • MATH 354 - Analysis of Algorithms Units: 3 Electives - 15 units Choose 15 Elective units from: • COMP 345 - Digital Image Processing (Cross-listed as PHYS 345, MATH 345) Units: 3 • COMP 351 - Distributed Computing Units: 3 • COMP 420 - Database Theory and Design (Cross-listed as IT 420) Units: 3 • COMP 424 - Computer System Security (Cross-listed as IT
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424) Units: 3 • COMP 425 - Computer Game Programming Units: 3 • COMP 429 - Computer Networks (Cross-listed as IT 429) Units: 3 • COMP 445 - Image Analysis and Pattern Recognition (Cross-listed as PHYS 445, MATH 445) Units: 3 • COMP 451 - Advanced Object-Oriented Programming Units: 3 • COMP 452 - Computational Bioinformatics (Cross-listed as MATH 452) Units: 4 • COMP 462 - Embedded Systems Units: 3 • COMP 464 - Computer Graphic Systems and Design I (Cross-listed as IT 464) Units: 3 • COMP 469 - Artificial Intelligence/Neural Nets Units: 3 • COMP 490 - Topics in Computer Science Units: 3 • COMP 492 - Internship Units: 1-3 • COMP 494 - Independent Research Units: 1-3 • COMP 497 - Directed Studies Units: 3 • ENGL 482 - Technical and Business Writing Units: 3 • IT 380 - Web Programming Units: 3 • IT 400 - eCommerce Units: 3 • IT 402 - Advanced Web Programming Units: 3 • MATH 429 - Operations Research Units: 3 • MATH 448 - Scientific Computing Units: 3 General Education Courses Included in Major Requirements - 11 units • COMP 150 - Object-Oriented Programming Units: 4 • MATH 150 - Calculus I Units: 4 • MATH 230 - Logic and Mathematical Reasoning (Cross-listed as PHIL 230) Units: 3	424) Units: 3 • COMP 425 - Computer Game Programming Units: 3 • COMP 429 - Computer Networks (Cross-listed as IT 429) Units: 3 • COMP 445 - Image Analysis and Pattern Recognition (Cross-listed as PHYS 445, MATH 445) Units: 3 • COMP 451 - Advanced Object-Oriented Programming Units: 3 • COMP 452 - Computational Bioinformatics (Cross-listed as MATH 452) Units: 4 • COMP 462 - Embedded Systems Units: 3 • COMP 464 - Computer Graphic Systems and Design I (Cross-listed as IT 464) Units: 3 • COMP 469 - Artificial Intelligence/Neural Nets Units: 3 • COMP 490 - Topics in Computer Science Units: 3 • COMP 492 - Internship Units: 1-3 • COMP 494 - Independent Research Units: 1-3 • COMP 497 - Directed Studies Units: MATH 429 - Operations Research Units: 3 MATH 448 - Scientific Computing Units: 3 General Education Courses Included in Major Requirements - 11 units • COMP 150 - Object-Oriented Programming Units: 4 • MATH 150 - Calculus I Units: 4 • MATH 230 - Logic and Mathematical Reasoning (Cross-listed as PHIL 230) Units: 3
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Peter Smith

6/25/13

Proposer of Program Modification

Date

APPROVAL SHEET

Program: Computer Science

If your course has a General Education Component or involves Center affiliation, the Center will also sign off during the approval process.

Multiple Chair fields are available for cross-listed courses.

The CI program review process includes a report from the respective department/program on its progress toward accessibility requirement compliance. By signing below, I acknowledge the importance of incorporating accessibility in course design.

Program Chair		
	Signature	Date

Curriculum Chair		
	Signature	Date

AVP		
	Signature	Date