

## MEMORANDUM

TO: Zina Lawrence, Senate Chair  
FROM: Havidán Rodríguez, President  
DATE: January 14, 2020  
SUBJECT: Senate Bill Approval

I am pleased to approve the following Senate Bill, which was recommended following approval by the University Senate at its meeting of December 18, 2019:

Senate Bill 1920-02:  
PROPOSAL TO REVISE THE BS IN COMPUTER SCIENCE

Approved: \_\_\_\_\_

Havidán Rodríguez, President

**UNIVERSITY SENATE  
UNIVERSITY AT ALBANY  
STATE UNIVERSITY OF NEW YORK**

Introduced by: Undergraduate Academic Council  
University Policy and Planning Council

Date: November 20, 2019

**Proposal to Revise the BS in Computer Science**

IT IS HEREBY PROPOSED THAT THE FOLLOWING BE ADOPTED:

1. That the University Senate approves the attached program proposal as submitted by the Office of the Department of Computer Science, College of Engineering and Applied Sciences, and approved by UAC and UPPC
2. That this takes effect for the Fall 2020 semester
3. That this proposal be forwarded to President Havidán Rodríguez for approval.

**Course and Program Action Form**

Proposal No. \_\_\_\_\_

Please check one:  Course Proposal  Program Proposal

Please mark all that apply:

<input type="checkbox"/> New Course	Revision of:	<input type="checkbox"/> Number	<input type="checkbox"/> Description
<input type="checkbox"/> Cross-Listing		<input type="checkbox"/> Title	<input type="checkbox"/> Prerequisites
<input type="checkbox"/> Shared-Resources Course		<input type="checkbox"/> Credits	
<input type="checkbox"/> Deactivate/Activate Course (boldface & underline as appropriate)	<input checked="" type="checkbox"/>	Other (specify):	CSIC program requirement

Department: Computer Science Effective Semester, Year: Fall 2020

Course Number Current: \_\_\_\_\_ New: \_\_\_\_\_ Credits: \_\_\_\_\_

Course Title: \_\_\_\_\_

Course Description to appear in Bulletin: \_\_\_\_\_

Please see the changes on page 3.

EDITED 10/29/19

Prerequisites statement to be appended to description in Bulletin: \_\_\_\_\_

If S/U is to be designated as the only grading system in the course, check

This course is (will be) cross listed with (i.e., CAS ###): \_\_\_\_\_

This course is (will be) a shared-resources course with (i.e., CAS ###): \_\_\_\_\_

Explanation of proposal: \_\_\_\_\_

ABET accreditation is demonstrable proof that an engineering and applied sciences program meets the standards essential to produce graduates prepared to enter the critical commercial and industrial markets. The last accreditation of the UAlbany BS CS program by ABET was allowed to lapse in 1999 by Department Leadership. Over the succeeding 20 years, ABET's Computing and Accreditation Commission has enacted many updates to the required general and program specific criteria for accreditation.

It is essential for the Computer Science Department, as a part of College of Engineering and Applied Sciences (CEAS), to re-apply and receive ABET accreditation for its BS (CS) program (CSIC). To update and align our BS CSIC program with these new criteria, we have:

- 1) Moved 4 existing 400-level ICSI catalog courses previously listed as electives into the "required" status. All of these existing elective courses were frequently taken as elective options by many of our BS CSIC students. Their technical content had in decades past matched ABET criteria but had become obsolete. Course descriptions and content coverage were all updated to meet current standards, and their pre-requisites were adjusted accordingly. Courses impacted ICSI 410, ICSI 412 (formerly ICSI 400), and ICSI 416, and ICSI 418Y. These changes add 12 credit hours to the program.
- 2) Increased the credit hours for 2 courses, ICSI 213 and ICSI 311 by 1 credit hour (from 3 to 4 credit hours) to satisfy the need for hands-on lab experience in the new ABET criteria. Course descriptions were appropriately updated. These changes add 2 credit hours to the program.
- 3) Deactivating ICSI 402. Capstone project course requirement of ABET will now be fulfilled by ICSI 499. Changes impact a total of 0 credit hours for the program.
- 4) Dropped the requirement for AMAT 214, as it is no longer required by ABET. This change removes 3 credit hours from the program.
- 5) Revised Science Sequence courses to include A PHY and A CHM courses that have laboratory work, as required by the new ABET CAC criteria. The laboratory work adds 2 credit hours to the program.
- 6) Dropped the requirement for Physics and Laboratory Science courses, since it is already covered in the Science Sequence courses category. This change removes 8 credit hours from the program.

While a number of required courses from the original program are effected by the proposed changes, no new courses are being added. Instead, the bulk of credit hour impacts arise from the updating and movement of courses previously listed as "electives" into the "required" category, and conversely shifting some previously listed "required" courses which were overlapping and redundant to the new program to the "electives" list, or course not required by the new ABET criteria. The net result of all these changes only increases the total number of credit hours for the CSIC major from 73 to 78, a net increase of only 5 credit hours.

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:  
N/A

*If this proposal is for an interdisciplinary program, please indicate the Department where the major/minor will be housed:*

<b>Chair of Proposing Department (TYPE NAME)</b>	<b>Approval Date</b>	<b>Chair of College Academic Programs Committee</b>	<b>Approval Date</b>
Won Namgoong	9/16/2019	James R. Moulic	9/16/19
<b>Chair of Departments having cross-listed course(s) [Copy of e-mail approval(s) on following page.]</b>	<b>Approval Date</b>	<b>Dean of College</b>	<b>Approval Date</b>
		Kim L. Boyer	9/16/19

Chair of Departments having cross-listed course(s) [Copy of e-mail approval(s) on following page.]	Approval Date		Undergraduate Studies		Approval Date

### Current Bulletin Description

#### Bachelor of Science in Computer Science (CSCOMB)

The combined major and minor program in computer science integrates computer science with diverse sciences consisting of university physics, laboratory science, plus a flexible choice of two science courses at the undergraduate major level. Social aspects of computing, a mix of mathematics, theory and practice, and advanced electives complete the program.

The program provides excellent career-long preparation for new, unexpected trends in computing, information, their technologies, and related developments and applications in science. It also prepares the graduate for admission to high quality graduate programs in computer science at the Masters or Ph.D. level, and for the advanced Graduate Records Examination in computer science. Strong students in this program are encouraged to apply for the B.S./M.S. program in Computer Science.

General Program B.S. (combined major and minor sequence): a minimum of 73 credits as follows:

- Computer Systems and Science Core (24 credits): I CSI/I CEN 201, I CSI/I CEN 210, I CSI/I CEN 213, I CSI/I CEN 333, I CSI 403, I CSI/I CEN 404, and I CSI 409
- Programming Language Principles (3 credits): I CSI 311
- Intensive System Software Development (3 credits): I CSI 402
- Mathematics (17 credits): A MAT 111 or 112 or 118; 113 or 119; 220; 367; A MAT 214 or 3 credits from any A MAT courses numbered 300 or above
- Physics and Laboratory Science (8 credits): A PHY 140 or 141; 145; 150 or 151; and 155. Students who took Physics I or II without a laboratory can substitute 1 credit of other laboratory work for each of the A PHY 145 and A PHY 155 requirements
- Science Sequence (6 credits): one pair of related major biological, physical, or engineering science courses (not in mathematics or computer science) as approved by the department. Approved pairs include A BIO 120 and 121, A PHY 240 and 250, two courses from A PHY/I CEN 353, A PHY 415, and 454, or others as advised

Social Aspects of Computing (3 credits): I CSI 300Z

Computer Science Electives (9 credits): 6-9 credits must be from I CSI courses numbered 300-470 or 500-550 or specially approved. 3 credits may be in A PHY/I CEN 353 or A PHY 454 in digital hardware, or A PHI 432 in advanced logic

### Proposed Bulletin Description

#### Bachelor of Science in Computer Science (CSIC)

The combined major and minor program in computer science integrates computer science with diverse sciences consisting of university physics, laboratory science, plus a flexible choice of two science courses at the undergraduate major level. Social aspects of computing, a mix of mathematics, theory and practice, and electives complete the program.

The program provides excellent career-long preparation for new, unexpected trends in computing, information, their technologies, and related developments and applications in science. It also prepares the graduate for admission to high quality graduate programs in computer science at the Masters or Ph.D. level, and for the advanced Graduate Records Examination in computer science. Strong students in this program are encouraged to apply for the B.S./M.S. program in Computer Science.

General Program B.S. (combined major and minor sequence): a minimum of 78 credits as follows:

- Computer Science Introductory Core Courses (16 credits): I CSI/I ECE 201, 213; I CSI 311, 333
- Computer Science Advanced Core Courses (21 credits): I CSI 403; I CSI/I ECE 404; I CSI 409, 410; I CSI 412 /I ECE 400; I CSI/I ECE 416; I CSI 418Y
- Mathematics (18 credits): I CSI/I ECE 210; A MAT 111 or A MAT 112 or 118, 113 or 119, 220, 367
- Lab Science Sequence (8 credits): one pair of natural science courses with laboratory work as approved by the department. Approved pairs include A PHY 140 or 142, 145, 150 or 152, and 155; and A CHM 120, 124, 121, 125
- Social Aspects of Computing (3 credits): I CSI300Z
- Capstone Project Course (3 credits): I CSI 499.
- Computer Science Electives (9 credits): I CSI courses numbered 400-470 or 500-550 or specially approved.



**Is there an impact on other service units?** Please attach documentation that you have consulted with each unit listed below:

Yes	No	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	ITS
<input type="checkbox"/>	<input checked="" type="checkbox"/>	University Libraries
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Scientific Core Facilities
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other services (i.e., advisement, parking, facilities, security), please list:

**Is there an impact on other academic programs?** Please list all academic departments consulted regarding impact and attach documentation.

We have consulted with the Physics and Chemistry departments, as the program revision will require a science sequence. Attached are the communications with each department.

**Faculty and Staff** *(attach additional pages if necessary)*

(a) Describe new faculty hiring needed during the next 3 years

(b) Explain how program will be administered for the purposes of admissions, advising, course offerings, etc. Discuss the available support staff.

(a) The program revision includes a net increase of only 5 credit hours. Although our current faculty numbers are sufficient to support the additional credit hours, we are nonetheless in the process of hiring an additional tenure-track faculty member.

(b) Admission requirement for the program will remain the same, and the admissions team will be made aware of degree changes. Our two person advising team has been an integral part of the process and are aware of all course title, description, prerequisite and credit hour changes. A new degree checklist has been created to assist with student advising. Program revisions have been discussed at the faculty-level during committee review and scheduled faculty meetings.

**Program Expenses**

List all resources that will be engaged specifically as a result of the proposed program (e.g., a new faculty position or additional library resources). If they represent a continuing cost, new resources for a given year should be included in the subsequent year(s), with adjustments for inflation or negotiated compensation.

Program Expense Categories	Expenses (In dollars)					
	Prior to implementation	Academic Year 1:	Academic Year 2:	Academic Year 3:	Academic Year 4:	Academic Year 5:
<i>(a) Personnel (Including faculty and all others)</i>	2,229,683	2,229,683	2,374,277	2,421,762	2,470,197	2,519,601
<i>(b) Library</i>						
<i>(c) Equipment</i>						
<i>(d) Laboratories</i>						
<i>(e) Supplies</i>	41,495	41,495	42,325	43,171	44,035	44,916
<i>(f) Capital Expenses</i>						
<i>(g) Student stipends or scholarships</i>	475,275	475,275	484,781	494,476	504,366	514,453
<i>(h) Other (specify):</i>						
<b>Sum of Rows Above</b>	<b>\$ 2,746,453</b>	<b>\$ 2,746,453</b>	<b>\$ 2,901,383</b>	<b>\$ 2,959,409</b>	<b>\$ 3,018,598</b>	<b>\$ 3,078,970</b>

**Explanatory Notes (add additional pages as needed):**

This is our current budget and no additional resources are needed.





**From:** [Niu, Li](#)  
**To:** [Seabury, Mark](#)  
**Cc:** [Gabriel, Brian A](#); [Namgoong, Won](#); [Atrey, Pradeep K](#); [Henck, Colin](#); [Gersowitz, Kathleen H](#)  
**Subject:** RE: Curriculum Changes  
**Date:** Saturday, October 19, 2019 2:23:46 PM

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Mark,  
We are fine to accept your students.  
Li

**From:** Seabury, Mark <[mseabury@albany.edu](mailto:mseabury@albany.edu)>  
**Sent:** Friday, October 18, 2019 2:57 PM  
**To:** Niu, Li <[lniu@albany.edu](mailto:lniu@albany.edu)>  
**Cc:** Gabriel, Brian A <[bgabriel@albany.edu](mailto:bgabriel@albany.edu)>; Namgoong, Won <[wnamgoong@albany.edu](mailto:wnamgoong@albany.edu)>; Atrey, Pradeep K <[patrey@albany.edu](mailto:patrey@albany.edu)>; Henck, Colin <[chenck@albany.edu](mailto:chenck@albany.edu)>  
**Subject:** RE: Curriculum Changes

We estimate there will be around 50 students based on current enrollment numbers.

**From:** Niu, Li <[lniu@albany.edu](mailto:lniu@albany.edu)>  
**Sent:** Friday, October 18, 2019 2:50 PM  
**To:** Seabury, Mark <[mseabury@albany.edu](mailto:mseabury@albany.edu)>  
**Cc:** Gabriel, Brian A <[bgabriel@albany.edu](mailto:bgabriel@albany.edu)>; Namgoong, Won <[wnamgoong@albany.edu](mailto:wnamgoong@albany.edu)>; Atrey, Pradeep K <[patrey@albany.edu](mailto:patrey@albany.edu)>; Henck, Colin <[chenck@albany.edu](mailto:chenck@albany.edu)>  
**Subject:** RE: Curriculum Changes

Mark,  
How many students do you have potentially to our chem courses?  
Li

**From:** Seabury, Mark <[mseabury@albany.edu](mailto:mseabury@albany.edu)>  
**Sent:** Friday, October 18, 2019 1:39 PM  
**To:** Niu, Li <[lniu@albany.edu](mailto:lniu@albany.edu)>  
**Cc:** Gabriel, Brian A <[bgabriel@albany.edu](mailto:bgabriel@albany.edu)>; Namgoong, Won <[wnamgoong@albany.edu](mailto:wnamgoong@albany.edu)>; Atrey, Pradeep K <[patrey@albany.edu](mailto:patrey@albany.edu)>  
**Subject:** Curriculum Changes  
**Importance:** High

Hello Dr Niu,

I am writing to let you know of our proposed curriculum changes. We are hoping to add a chemistry sequence, CHM 120 and CHM 121 and their corresponding labs, CHM 124 and CHM 125, as an option for students that are enrolled in our Bachelor of Science in Computer Science program. The students in our Computer Science Combined (CSIC) program are required to take a pair of courses

from Natural Sciences. Currently the majority of our students take a Physics sequence. We would like to provide them with an option to take the Chemistry sequence, as well.

In our bulletin, it will appear as below:

- Science Sequence (8 credits): one pair of natural science courses with laboratory work as approved by the department. Approved pairs include A PHY 140 or 142, 145, 150 or 152, and 155; and A CHM 120, 124, 121, 125

Does your department have any questions or concerns regarding this proposed change? We are meeting to discuss these changes on Monday, so your prompt reply is greatly appreciated.

Please let me know if you need any additional information.

Mark Seabury  
Administrative Manager for the Department of Computer Science  
College of Engineering and Applied Sciences | University at Albany  
1215 Western Avenue, UAB 404  
Albany, NY 12203  
Ph: 518.437.4980

**From:** [Atrey, Pradeep K](#)  
**To:** [Earle, Keith](#)  
**Cc:** [Namgoong, Won](#); [Seabury, Mark](#)  
**Subject:** Curriculum changes in CS  
**Date:** Friday, October 18, 2019 3:12:23 PM

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Hello Keith,

I am writing to inform you about the changes in our BS Computer Science Combined (CSIC) program.

We have moved the Physics courses (A PHY 140 or 141; 145; 150 or 151; and 155) from Physics and Laboratory Science (8 credits) category to Science Sequence (8 credits) category, as shown below. This is done as a part of our program and curriculum revision to apply for the ABET accreditation.

Current:

- Physics and Laboratory Science (8 credits): A PHY 140 or 141; 145; 150 or 151; and 155. Students who took Physics I or II without a laboratory can substitute 1 credit of other laboratory work for each of the A PHY 145 and A PHY 155 requirements
- Science Sequence (6 credits): one pair of related major biological, physical, or engineering science courses (not in mathematics or computer science) as approved by the department. Approved pairs include A BIO 120 and 121, A PHY 240 and 250, two courses from A PHY/I CEN 353, A PHY 415, and 454, or others as advised

Proposed (no Physics category separately, but the Physics courses are moved to the Science Sequence category):

- Science Sequence (8 credits): one pair of natural science courses with laboratory work as approved by the department. Approved pairs include A PHY 140 or 142, 145, 150 or 152, and 155; and A CHM 120, 124, 121, 125

Does your department have any questions or concerns regarding this proposed change? We are meeting to discuss these changes on Monday, so your prompt reply is greatly appreciated.

Please let me know if you need any additional information.

Best regards,

- Pradeep K. Atrey, PhD  
Associate Professor and Undergraduate Program Director  
Co-Director, Albany Lab for Privacy and Security (ALPS)  
Department of Computer Science  
College of Engineering and Applied Sciences  
University at Albany, State University of New York  
UAB 421, 1215 Western Avenue, Albany, NY, USA 12222  
Phone: (518) 437-4943, Email: [patrey@albany.edu](mailto:patrey@albany.edu)  
URL: <http://www.cs.albany.edu/~patrey/>