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COMMITTEE ON ACADEMIC PLANNING AND REVIEW

18-19 CAPR 11
Thursday, February 21, 2019

TO: The Academic Senate
FROM: The Committee on Academic Planning Review (CAPR)
SUBJECT: 18-19 CAPR 11: CAPR analysis of Computer Science 5-year program review
PURPOSE: For Action by the Academic Senate
ACTION REQUESTED: Acceptance of the Five-Year Program Review of the Department of Computer Science; it is recommended that the program continues without modification.

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BACKGROUND:

At its meeting on February 21, 2019, CAPR members unanimously approved the [Computer Science 5-year program review](#). This approval was based on conversations with the lead writer of the report and Dr. Kevin Brown via conversations with the CAPR liaison. The summary document provided was reviewed and approved by the Dr. Brown and his peers. The summary of the five-year review is attached to this memo. It is recommended that the program continues without modification.

Following approval of this memo by the Senate, the Provost will review the summary and meet with members of the Department of Computer Science and the CAPR chair at a time mutually agreeable during the Spring 2019 term to devise a clear 5-year plan moving forward. The Provost will then create a Memorandum of Understanding (MOU) with the Department of Computer Science and return that MOU to the Senate as an information item as soon as possible (completion of a MOU may require extension into the following Fall semester given scheduling timelines).

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1 CAPR 5-year review summary for BS/ MS in Computer Science

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4 1.0: Background

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6 *Briefly describe the program(s), number of students served, faculty and refer to five-year reports*
7 *for additional information. Can be copied and inserted from the 5-year review.*

8 The Department addressed all the goals set in the last Five Year Plan. Some goals were met
9 with great success, e.g., growing the program, while other attempts were less successful, e.g.,
10 hiring new faculty. Those goals and actions are summarized in detail in the 5-year review.
11 Several new courses to address new fields or changes in existing fields were added to both
12 undergraduate and graduate programs. A number of goals, including modifying the curriculum
13 towards future accreditation, updates to the introductory programming sequence, integrating the
14 M.S. Networks degree into the M.S. Computer Science degree, and simplifying the Master's
15 degree program requirements have been addressed as part of program transformation for the
16 semester-based system.

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18 The program grew from 420 students in Fall 2012 to 828 in Fall 2017 and is still growing. In fact,
19 due to program growth and difficulties in hiring faculty, the Department no longer has the
20 capacity to serve the number of students that wish to enroll. The Department has taken steps in
21 the last year to decrease the size of the graduate program to adjust the total number of students
22 in the major programs to one which may be successfully served. The Department also worked
23 to address the need for more formal advising for the students. An Undergraduate Coordinator
24 position was created providing a single point of contact for advising for students. The
25 undergraduate adviser is a first contact for students who want to plan their computer science
26 schedules, receive transfer credit evaluation, request job/internship/ graduate school
27 recommendations, and review graduation requirements. The undergraduate advisor contacts
28 and counsels students who have low GPA's in their Computer Science courses and meets with
29 students who have been cited for academic dishonesty. The Department believes this added
30 advising will lead to a shorter time to graduation for students, and improve the student
31 experience. The primary goal regarding Faculty was to hire more faculty members to replace a
32 large number of retiring faculty, and to support the large growth in the department. Despite
33 being granted one to two searches a year throughout most of the five-year review period, the
34 Department was successful in hiring only three faculty members. Enrollment demands require at
35 least three more members. Two searches are currently underway this year, but despite
36 extensive outreach, few applications were submitted for the positions, and only perhaps one will
37 be filled. Based on discussions with past candidates who have declined the CSUEB offers of
38 employment, the searches have failed due to inadequate salary offers. A second large change
39 is the separation of the combined Department of Mathematics and Computer Science into two
40 individual departments. The great size of the combined department (nearly 30 faculty), and the
41 large differences in the programs made it difficult to manage, and difficult for standard
42 departmental policies to be developed. As a result, a request was made to separate the
43 programs into two departments.

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45 2.0: Checklist of documents submitted with the 5-year review.

- 46 • Self Study – present in 5 year review
- 47 • Five-year plan – present in 5 year review
- 48 • External reviewer's report – present in 5 year review
- 49 • Program response to the external reviewer's report – there is a summary of goals and
50 trends and future steps to be taken based on the external reviewers' comments.
- 51 • Accreditation documents (if applicable)- links to accreditation and thorough data tables
52 listing ILO, PLO and SLO assessment strategies are provided in the 5-year review.

54 3.0: CAPR Analysis

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56 *An executive summary and recommendation for program continuation is proposed. It should be*
57 *no more than 1-2 pages and should be written by the CAPR liaison [in partnership with the](#)*
58 *[department/program chair](#).*

60 Summary:

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- 63 • *Discuss the strengths and assets of the program with respect to faculty, student*
64 *success, curriculum, program enhancement, assessment plans*
65 *as well as notable accomplishments:* The Department of Computer Science has
66 a clear set of outcomes and goals for faculty and students, have revised,
67 assessed and sustained newly developed curriculum and have collaborated with
68 ITS at CSUEB to create some effective changes in access to digital learning
69 spaces.
 - 70 • *Describe the key issues and/or concerns that were central to the five-year year*
71 *review process and how the department/program plans to address them:* The
72 Department of Computer Science has noted they will continue to assess ILOs
73 and PLOs to monitor the progress of new program and curricular structures. With
74 the conversion to semesters, the Program has noted that they will continue to
75 adapt curriculum to meet the needs of students. They also noted workload and
76 need for lecturers is a challenge to maintain in order to serve such a growing
77 program.
 - 78 • *Note the program's vision for the next five years and what the program hopes to*
79 *accomplish (see steps below).*
 - 80 • *Provide concrete steps on how the program plans to achieve its vision in the next*
81 *five years.* Below is a list of concrete goals laid out in the 5-year review. Details
82 on the strategies for each can be found in the complete 5-year document.
 - 83 ○ **Evaluate B.S. curriculum** in light of possible decision to seek
84 accreditation from Accreditation Board for Engineering and Technology
85 (ABET) which provides accreditation for Computer Science programs.
 - 86 ○ **Implement a more formal assessment plan for all programs.**
 - 87 ○ **Closing the loop:** Instructors redesigning their courses for semesters
88 have been encouraged to include more algorithm design, program
89 development, testing, and tool use in their courses. High impact teaching
90 practices such as think, pair share, jigsaws, explorative learning,
91 collaborative projects, and flipped classroom techniques have also been
92 encouraged.

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94 4.0: CAPR Recommendation(s) for Continuation of the Program – *please refer to the CAPR
95 policy document as needed [https://www.csueastbay.edu/faculty/senate/files/docs/policies/12-](https://www.csueastbay.edu/faculty/senate/files/docs/policies/12-13-new-policy-page/capr-academic-program-review-16-17capr7-and-17-18capr5-prez-approved-5-9-18.pdf)
96 [13-new-policy-page/capr-academic-program-review-16-17capr7-and-17-18capr5-prez-](https://www.csueastbay.edu/faculty/senate/files/docs/policies/12-13-new-policy-page/capr-academic-program-review-16-17capr7-and-17-18capr5-prez-approved-5-9-18.pdf)
97 [approved-5-9-18.pdf](https://www.csueastbay.edu/faculty/senate/files/docs/policies/12-13-new-policy-page/capr-academic-program-review-16-17capr7-and-17-18capr5-prez-approved-5-9-18.pdf)

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99 Based on an elaborate and thorough 5-year review submitted by the faculty representing the
100 BS/ MS in Computer Science, CAPR recommends this program continue without modification.
101 This program has provided thorough evidence for the achievement of all components listed in
102 the description of continuation without modification (see below)

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- 105 • **Continuation without modification** (from page 4, of capr-academic-program-
106 review-16-17)

- 107 ○ responsive to previous five-year review, including progress towards goals
- 108 identified in the previous plan and external reviewer recommendations;
- 109 ○ a strategic plan for the next five years;
- 110 ○ on-going and consistent assessment of program learning outcomes;
- 111 ○ act on assessment results, i.e. has an iterative assessment process;
- 112 ○ discusses data and its implications for the program;
- 113 ○ closes the loop on assessment;
- 114 ○ program is addressing any achievement gaps;
- 115 ○ five-year reviews and annual reports are completed in a timely fashion;
- 116 ○ program is effectively meeting demand for majors and providing service
- 117 courses (where applicable);
- 118 ○ program is maintaining an appropriate density of tenure-track faculty;
- 119 ○ program is continuing to graduate students regularly.

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123 5.0 Summary:

124 In 2012, CAPR proposed that the Department's Five Year Review be approved with the
125 recommendation that the programs continue with specific modification. Specifically, each
126 program was required to submit evidence of direct and indirect assessment of at least one
127 Program Learning Outcome (PLO) each year in the Department's annual report. In addition,
128 each program was asked to note actions taken to use the assessment results for program
129 improvement. The Department has complied with the CAPR recommendations, and has made
130 significant progress towards many of the goals in the plan. That progress was thoroughly
131 addressed in the 5-year review submitted in the Spring of 2018.

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133 **As part of the executive summary as of 2019**, the CAPR liaison, Dr. Michele Korb,
134 recommends this program, BS/MS in Computer Science, for continuation without modification
135 based on thorough evidence for all requirements of this recommendation. What CAPR does
136 recommend is continued attention to monitor, review and assess the goals listed in the CAPR
137 policy documents related to 5 year reviews.

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140 This CAPR review was approved by: (Computer Science Chair, CAPR, February, 2019).
141 The next 5-year review for Computer Science is due in the Spring of the 2022-23 academic
142 year.

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