

Contact: Rachel Boon

PROPOSAL TO ADD COMPUTER SCIENCE TO THE REGENT ADMISSION INDEX

Action Requested: Consider approval of the addition of computer science to the Regent Admission Index.

The Admissions Study Team recommends approval of this request.

Background: As the economy in Iowa and around the world undergoes significant growth in products and services emphasizing the need for digital literacy, the need for highly trained people to support this change grows as well. A 2017 Iowa law encourages all accredited school districts and nonpublic schools to offer high-quality computer science instruction in elementary, middle and high school by July 1, 2019.

A statewide Computer Science Working Group (a collaboration of Department of Education, industry, K-12 and university representatives) convened as a result of the 2017 law and developed a definition for what computer science is in Iowa:

“Computer Science is understanding how and why technologies work, exploring whether and how technology could solve real-life problems, investigating the necessary procedures, creating solutions, and learning about computing systems, programming, data, networks, and the effects on society and the individual.”

Subsequently, the State Board of Education in Iowa adopted statewide computer science standards in summer 2018 in keeping with the Computer Science Teachers Association K-12 computer science standards. Schools at all levels in Iowa continue to find ways to embed these standards into existing or new courses, while a growing number of teachers are taking the college courses or professional development that prepare them to teach to these standards.

Similarly, the public universities in Iowa continue to see growth in student interest in computer science and related fields. In 2015, 2,398 undergraduates (3.8% of total undergraduates) had a major in a computer science related field. This fall there are 3,645 undergraduates (6% of total undergraduates) majoring in a computer science related field, amounting to greater than 50% growth in just five years.

Public University Admissions Process: The RAI was implemented in 2009 as an admissions formula that uses a combination of factors (high school grade point average, number of high school core courses taken, and ACT score). Any Iowa high school student that achieves a score of 245 or higher is automatically admitted to any of the three Regent Universities. Applicants below 245 are strongly encouraged to apply and are considered for admission by individual review. Since 2009, a cross-institutional team of academic and admissions personnel from the institutions and the Board of Regents office regularly meets to evaluate the RAI, as well as discuss which high school coursework should be included in the index.

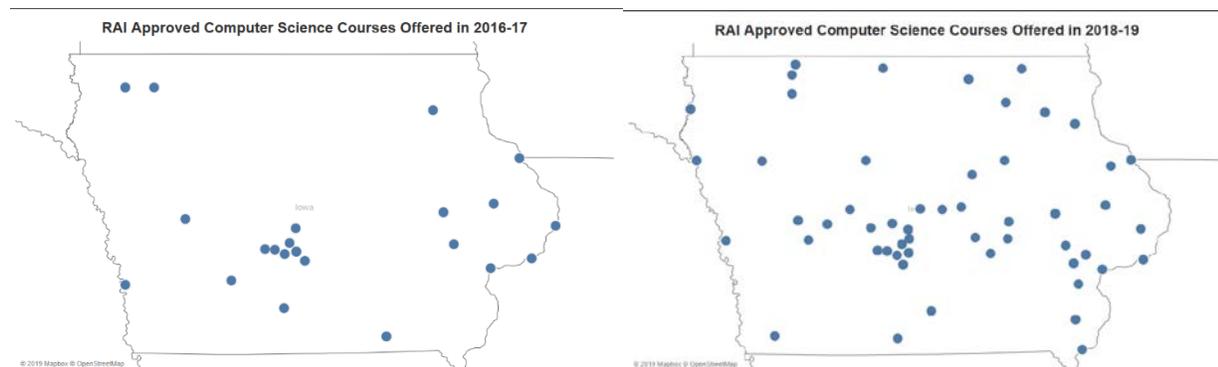
For consideration of computer science courses, the Admissions Study Team asked three faculty members with expertise in computer science to review information on all courses currently offered in Iowa high schools that meet the statewide K-12 computer science standards. They were asked to identify which courses had the depth and rigor to clearly serve as college preparatory coursework.

Four courses attained unanimous agreement among these experts and were recommended for consideration by the Admission Study Team. Additional considerations for the team were statewide enrollment in these courses, growth in enrollment over the past few years, geographic diversity of the high schools offering the courses and the range of students taking the courses.

Courses Reviewed for RAI Inclusion
<i>AP Computer Science A</i>
<i>AP Computer Science Principles</i>
<i>Computer Science Principles</i>
<i>IB Computer Science</i>

An important factor in determining appropriateness of including computer science was whether or not it would unfairly disadvantage students from rural schools. The Admissions Study Team found that the distribution of high schools offering these courses has both grown in number and in its geographic dispersion in the past three years. As seen in Figure 1 below, since the 2016-17 school year, a number of rural districts have added these rigorous courses.

Figure 1



Additionally, the team explored the scale of impact in including these courses. Enrollment in the selected courses, while still low relative to the total number of high school students, is showing an impressive rate of growth, particularly in the *Computer Science Principles* course (see Table 1). In addition, female students are making up a slowly increasing proportion of these enrollments (from 17% in 2016 to more than 20% in 2018).

Table 1

Iowa Student Enrollment

	2016-17	2017-18	2018-19
AP Computer Science A	234	312	411
AP Computer Science Principles		53	131
Computer Science Principles	190	312	716
IB Computer Science	5		

On the basis of this evidence, the recommendation of the computer science experts and the alignment with statewide goals to elevate the preparedness of Iowa residents for the digital economy, the Admissions Study Team recommends adding the category “computer science” to the RAI, with the four courses noted above as those eligible for inclusion in the index.