FORM A
Board of Regents, State of Iowa

REQUEST TO IMPLEMENT A NEW BACCALAUREATE, MASTERS, DOCTORAL, OR PROFESSIONAL DEGREE PROGRAM

THE PURPOSE OF ACADEMIC PROGRAM PLANNING: Planning a new academic degree program provides an opportunity for a Regent university to demonstrate need and demand as well as the university's ability to offer a quality program that is not unnecessarily duplicative of other similar programs offered by colleges and universities in Iowa.

Institution: Iowa State University_____

CIP Discipline Specialty Title: (SVPP) Computer Science _____
CIP Discipline Specialty Number (six digits)(SVPP) ___11.0701 _____

Level: B Bachelor's_____ M _____ D _____ P _____

Title of Proposed Program: Bachelor of Arts in Computer Science _____

Degree Abbreviation (e.g., B.S., B.A., M.A., Ph.D.): B. A. _____

Mode(s) of Delivery (check all that apply): On-campus (face-to-face) _X__ Off-campus (face-to-face) ___ Online _____ Hybrid _____ Other ____

Approximate date to establish degree: Month January _____ Year 2023_____

Contact person: (name, telephone, and e-mail)

Soma Chaudhuri, chaudhur@iastate.edu, 515-294-8547; Jack Lutz, lutz@iastate.edu, 515-294-3654

College that will administer new program: Liberal Arts and Sciences_____

Please provide the following information (use additional pages as needed). Do not use acronyms without defining them.

1. Describe the proposed new degree program, including the following:

   a. A brief description of the program. If this is currently being offered as a track, provide justification for a standalone program.

      We propose to establish a Bachelor of Arts (B.A.) degree in Computer Science, to be offered in addition to our existing Bachelor of Science (B.S.) degree in Computer Science.

      Our proposed B.A. program requires fewer total Computer Science courses than our B.S. program (32 credits versus 50 credits), and it allows the student more choice of which advanced courses to take. However, in all other respects, the proposed B.A. program is as rigorous as our existing B.S. program. Put succinctly, our B.A. program retains the depth of our B.S. program while allowing students to spread the breadth of their education over other disciplines in addition to Computer Science. See Appendix A for details. Also, see Appendix B for a four-year plan for the B.A. degree.

   b. A statement of academic objectives;

      The purpose of the Bachelor of Arts degree in Computer Science is to accommodate students who wish to pursue a major in Computer Science while taking more courses outside of the major than a Bachelor of Science degree program permits. This will include

students pursuing double majors, students pursuing one or more strong minors, and students pursuing broader liberal educations.

c. What the need for the program is and how the need for the program was determined;

Consultation with peer institutions has indicated strong student demand for B.A. programs in Computer Science where they exist side-by-side with B.S. programs in Computer Science. For example, the University of Iowa currently has 265 B.A. students in Computer Science and 205 B.S. students in Computer Science. At the University of Colorado, where we have historical data, the numbers rose from 0 B.A. students and 347 B.S. students in 2012 (when the B.A. program started) to 468 B.A. students and 430 B.S. students two years later, and to 813 B.A. students and 921 B.S. students in 2021.

There is an increasing demand for computing professionals both in the U.S. and internationally. The U.S. Bureau of Labor Statistics projects that the job outlook for 2020-2030 for software developers, quality assurance analysts, and testers will grow 22% from 2020 to 2030.[1] In Iowa, the U.S. Bureau of Labor Statistics projects 5,652 jobs in computer occupations in 2030.[2] Although U.S. universities graduate about 65,000 computer science students annually[3], there continues to be unmet demand. Iowa State University is well-positioned to respond to this. Due to the strong demand for computer scientists and the growing commercial and academic demand for computer scientists who can work in interdisciplinary teams, we anticipate that students graduating with a B.A. in Computer Science will be competitive on the job market and in applications to programs of graduate study. We also anticipate that the B.A. program in Computer Science will attract a more diverse student body than the more focused B.S. program attracts.

Among ISU's peer land grant institutions, the University of Wisconsin (Madison), the University of Minnesota, Ohio State University, and Texas A&M University all offer both B.S. and B.A. degrees in Computer Science. (Names, both of departments and their degrees, vary slightly here. The University of Wisconsin's department has been the Department of Computer Sciences, and Ohio State University's department has been the Department of Computer and Information Sciences, both for decades.) These degree programs differ from one another in their details.

d. The relationship of the proposed new program to the institutional mission and how the program fits into the institution's and college's strategic plan;

The new program is linked to Goal 1 of the ISU Strategic Plan "Shape the well-rounded citizens and informed critical thinkers needed in the 21st century" while "closing the gaps in student success between student sub-populations" and "prepare students for lives and careers in a dynamic, global community."[4] The new program also is linked to the second of four focus areas, "Prepare LAS majors for success," specifically to "ensure the relevance and applicability of LAS degree programs to help LAS students be successful in their professional and personal lives."[5] We also expect the B.A. program in Computer Science to attract a more diverse student body than the more focused B.S. program attracts.

[1] https://www.bls.gov/ooh/computer-and-information-technology/software-developers.htm
[2] https://www.bls.gov/emp/tables/occupational-projections-and-characteristics.htm
[3] https://www.pnas.org/content/116/14/6732
[4] https://strategicplan.iastate.edu/
[5] https://strategicplan.las.iastate.edu/

e. The relationship of the proposed new program to other existing programs at the institution; describe how the proposed program will enhance other programs at the university. Will the proposed program duplicate existing programs at the university?

The B.A. program in Computer Science will have a close relationship with the existing B.S. program in Computer Science. The B.A. students will take their courses along with the B.S. students (not in separate sections) and be subject to the same prerequisites and grade requirements. We anticipate that the B.A. program in Computer Science will attract a more diverse student body than the more focused B.S. program attracts. This can thus be expected to enhance the classroom diversity in our existing B.S. program.

The B.A. program will increase the number of Computer Science students who add majors and minors in other fields to their degree programs. In consultation with the Department of Psychology, we have developed an example four-year B.A. program for a Computer Science - Psychology double major. Similarly, in consultation with the Department of World Languages and Cultures, we have developed an example four-year B.A. program for a double major in Computer Science and Languages and Cultures for Professionals. (See Appendix C.) We anticipate many more such interactions, with benefits accruing to all programs involved.

The B.A. program in Computer Science does not duplicate any other degree program at Iowa State University.

f. The relationship of the proposed new program to existing programs at other colleges and universities in Iowa, including how the proposed program is different or has a different emphasis than the existing programs

The University of Iowa and University of Northern Iowa both have B.A. in Computer Science programs alongside their B.S. in Computer Science programs. Most private colleges in Iowa have B.A. in Computer Science programs, some standalone and some alongside B.S. in Computer Science programs. As noted in parts 1c and 4 of this form, there is more student and employer demand for B.A. in Computer Science degrees than colleges and universities are now supplying. Iowa State University offers more student research opportunities than are available at most private colleges in Iowa and (as noted in 1g below), some novel double major opportunities that differ from those offered elsewhere.

g. Special features or conditions that make the institution a desirable, unique, or appropriate place to initiate such a degree program.

Iowa State University has a long history in computer science, dating back to Atanasoff's invention of the first electronic computer in 1939. The ISU Department of Computer Science was officially established in 1969. The department's faculty collaborates with faculty in many other fields across ISU, both in research and in student supervision. B.A. students will thus be comfortable combining their Computer Science studies with a broader education. In addition to traditional programs in its various colleges, Iowa State University has novel programs such as Languages and Cultures for Professions in the World Languages and Cultures Department and Entrepreneurship in the College of Business that will provide exciting double major opportunities for students in the B.A. in Computer Science program.

h. Describe the personnel, facilities, and equipment necessary to establish and maintain a high quality program. Include any reallocations from other programs or areas of the university.

Current facilities and equipment are adequate to establish and maintain a high-quality program. All courses in the proposed B.A. program are existing courses in the current B.S. program, so the primary need will be for additional hires to teach the anticipated growth in the numbers of students in these courses. The managing college will support these resource needs as described in the Dean's letter in Appendix D.

i. How does student demand for the proposed program justify its development? What are the anticipated sources of students to enroll in this new program?

As noted in section 1c of this form, student demand for B.A. programs in Computer Science is high and does not seem to detract from demand for B.S. programs in Computer Science. We anticipate that the B.A. program will (1) bring more students to Iowa State University and (2) cause students already at Iowa State University and majoring in other subjects to add the B.A. in Computer Science as a second major.

2. Estimate the number of majors and non-majors students that are projected to be enrolled in the program during the first seven years of the program.

a. Undergraduate

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Majors	15	30	50	75	95	115	130
Non-Majors							

b. Graduate/Professional

This is an undergraduate program.

3. Describe the state and/or national workforce need and/or demand for graduates of the proposed program currently and in the foreseeable future (provide the sources of data used to estimate workforce need and demand).

There is an increasing demand for computing professionals both in the U.S. and internationally. The U.S. Bureau of Labor Statistics projects that the job outlook for 2020-2030 for software developers, quality assurance analysts, and testers will grow 22% from 2020 to 2030[6]. In Iowa, the U.S. Bureau of Labor Statistics projects 5,652 jobs in computer occupations in 2030[7]. Although U.S. universities graduate about 65,000 computer science students annually[8], there continues to be unmet demand.

[6] https://www.bls.gov/ooh/computer-and-information-technology/software-developers.htm
[7] https://www.bls.gov/emp/tables/occupational-projections-and-characteristics.htm
[8] https://www.pnas.org/content/116/14/6732

4. List all other public and private institutions of higher education in Iowa currently operating programs similar to the proposed new degree program. (For comparison purposes, use a broad framework, e.g., such identification should not be limited to programs with the exact same title, the same degree designation, having the same curriculum emphasis, or purporting to meet exactly the same needs as the proposed program.)

If the same or similar program exists at another public or private institution of higher education in Iowa, respond to the following questions:

a. Do other colleges in Iowa offer programs similar to the proposed program?

The University of Iowa and University of Northern Iowa both have B.A. in Computer Science programs alongside their B.S. in Computer Science programs. Most private colleges in Iowa have B.A. in Computer Science programs, some standalone and some alongside B.S. in Computer Science programs.

b. Has there been consultation in developing the program proposal? Provide a summary of the response of each institution consulted.

Letters of support from the University of Iowa and the University of Northern Iowa appear in Appendix E. We have also consulted with the Computer Science departments at Cornell College, Drake University, and Simpson College. Cornell College offers a B.A. in Computer Science, but not a B.S., reporting that nearly all undergraduate degrees there are B.A. degrees. Drake University offers both B.A. and B.S. degrees in Computer Science, but due to some historical circumstance, the two degrees have identical requirements and essentially all their students get the B.S. degree. They also report that they currently have 159 Computer Science majors and over 500 applications to their Computer Science program, reflecting nation-wide reports of overwhelming demand for Computer Science degrees. Simpson College only offers B.A. degrees, regardless of the major. Their Computer Science program is very small, graduating 5-10 students per year.

c. Has the possibility of an inter-institutional program or other cooperative effort been explored? What are the results of this study? (Consider not only the possibility of a formally established inter-institutional program, but also how special resources at other institutions might be used on a cooperative basis in implementing the proposed program solely at the requesting institution.)

We have not explored the possibility of an inter-institutional program. Undergraduate students generally want to attend a particular institution and as a result, we do not believe there is anything to be gained from an inter-institutional program. However, if a student in our B.A. in CS program takes or has taken a class at either the University of Iowa or the University of Northern Iowa that is a direct substitute for one of the classes required for our program, we will allow that substitution if it meets our university and college policies for such substitutions.

d. Are letters of support included with the program proposal?

Yes. See Appendix E.

5. If there are plans to offer the program away from the campus, briefly describe these plans, including potential sites and possible methods of delivery instruction. Will off-campus delivery require additional **HLC accreditation**?

At this point the B.A. in Computer Science program will only be offered on campus.

6. Will the proposed program apply for programmatic accreditation? When?

At the time of this writing, accreditation bodies for a B.A. degree in Computer Science have not emerged. The BA degree in Computer Science will be included as part of Iowa State University Higher Learning Commission (HLC) accreditation in the next cycle. Once the B.A. degree is well established, we will discuss with our industry partners and with members of our College of Liberal Arts and Sciences advisory councils whether the pursuit of additional accreditations would be worthwhile.

7. For undergraduate programs: Will articulation agreements be developed for the proposed program? With whom?

We will continue to honor any course level articulation agreements with community colleges that are in place at Iowa State University. Program-level articulation agreements are not planned.

8. Describe any opportunities for experiential learning (e.g. internships, clinicals, research, community engagement/service learning).

This is an undergraduate program that does not have any internship requirements; however, we do anticipate encouraging students to avail themselves of internship opportunities during their first, second, and third summers. Given the demand for Computer Scientists (see Item 1.c and Item 2), there should be ample opportunities for internships both within Iowa and outside Iowa. The program will leverage LAS career services, and well-established venues such as the LAS Career Fair and the Engineering Career Fair to connect students with potential employers. The existing alumni network of LAS established from such majors as B.S. in Computer Science and Statistics will also be leveraged.

9. From where will the financial resources to cover the costs for the proposed program come (list all that apply, e.g., department reallocation, college reallocation, grants, new to the university)?

Iowa State University utilizes a decentralized financial management model for the development of its annual operating budgets. The Resource Management Model (RMM), is a responsibility-centered and incentive-driven approach to financial planning and management. The model supports departments and colleges in making budgetary decisions that enhance student success (e.g., retention), innovate by meeting market demands from students and employers for degree programs of the future, and discontinue legacy curricula which are either not aligned with industry/employer needs or for which student demand is low. Through the RMM, for graduate and professional students, net tuition revenue is allocated to academic colleges based on a student's enrollment. Tuition revenue will include both base tuition and applicable differential rates. The students in the B.A. in Computer Science program will pay the same differential tuition rate as the B.S. in Computer Science program because they will take similar lower and upper-level Computer Science courses. The proposed degree program will be funded through this existing, proven financial model, and is expected to be fully self-sustaining over time. In addition to the budget model as described, financial resources may also come from internal

reallocations made within the college during the program's startup phase. The level of reallocation will depend, in part, on the numbers of new students attracted to the proposed program, and the number of existing students who choose the proposed program over another program, based on standard and differential tuition rates. The proposed program will not be dependent on grants, contracts, gifts, central university resources, or reallocations between academic colleges.

10. Include any additional information that justifies the development of this program.

Appendix A.
Requirements for Proposed B.A. Program

Overview: The program requires fewer total Computer Science courses than our B.S. program (32 credits versus 50 credits), and it allows the student more choice of which advanced courses to take. However, in all other respects, the proposed B.A. program is as rigorous as our existing B.S. program. B.A. students will take their courses along with B.S. students and will be subject to the same prerequisites and grade requirements. The B.A. program's six Computer Science core courses include several of the courses that our B.S. students find the most daunting. The B.A. program's mathematics and statistics requirements are the same as for the B.S. The freedom of choice given to B.A. students is calibrated so that they can avoid neither theory nor systems. Catalog language and academic advising will encourage students to use the additional freedom of choice of the B.A. to tailor their degrees to their academic and career plans. For example, students may want to consider courses in innovation and entrepreneurship, courses in basic business and economics, or general education courses that complement their technical interests. They may also want to consider co-majors or minors that contribute to their plans for graduate study or careers.

Requirements: In addition to satisfying the LAS requirements for all bachelor's degrees, students pursuing the B.A. degree in Computer Science will complete the following coursework, subject to the same grade and prerequisite requirements as students pursuing the B.S. degree in Computer Science.

Computer Science core (6 courses):
Com S 101. Orientation (0)
Com S 127. Introduction to Computer Programming (4)
Com S 227. Object-Oriented Programming (4)
Com S 228. Introduction to Data Structures (3)
Com S 309. Software Development Practices (3)
Com S 311. Introduction to the Design and Analysis of Algorithms (3)

Advanced Computer Science (5 courses):
Five 300/400-level courses chosen from lists (a) and (b) below, with at least one at the 400 level and at least two chosen from list (a).

(a) Software and hardware systems:
Com S 321. Introduction to Computer Architecture and Machine-Level Programming (3)
Com S 327. Advanced Programming Techniques (3)
Com S 342. Principles of Programming Languages (3)
Com S 352. Introduction to Operating Systems (3)
Com S 362. Object-Oriented Analysis and Design (3)
Com S 363. Introduction to Database Management Systems (3)
Com S 409. Software Requirements Engineering (3)
Com S 410. Distributed Development of Software (3)

Com S 412. Formal Methods in Software Engineering (3)
Com S 413. Foundations and Applications of Program Analysis (3)
Com S 415. Software System Safety (3)
Com S 417. Software Testing (3)
Com S 440. Principles and Practice of Compiling (3)
Com S 441. Programming Languages (3)
Com S 454. Distributed Systems (3)
Com S 486. Fundamental Concepts in Computer Networking (3)
Com S 487. Network Programming, Applications, and Research Issues (3)

(b) Other advanced computer science:
Com S 331. Theory of Computing (3)
Com S 336. Introduction to Computer Graphics (3)
Com S 418. Introduction to Computational Geometry (3)
Com S 421. Logic for Mathematics and Computer Science (3)
Com S 433. Molecular Programming of Nanoscale Devices and Processes (3)
Com S 435. Algorithms for Large Data Sets: Theory and Practice (3)
Com S 437. Computer Game and Media Programming (3)
Com S 455. Simulation: Algorithms and Implementation (3)
Com S 472. Principles of Artificial Intelligence (3)
Com S 474. Introduction to Machine Learning (3)
Com S 476. Motion Strategy Algorithms and Applications
Com S 477. Problem Solving Techniques for Applied Computer Science (3)

Mathematics core (3 courses):
Math 165. Calculus I (4)
Math 166. Calculus II (4)
Com S 230. Discrete Computational Structures (3)

Additional Mathematics (1 course):
One of the following courses.
Com S 331. Theory of Computing (3) (if not used for the Advanced Computer Science requirement)
Math 207. Matrices and Linear Algebra (3)
Math 265. Calculus III (4)
Math 266. Elementary Differential Equations (3)
Math 267. Elementary Differential Equations and Laplace Transforms (4)
Math 304. Combinatorics (3)
Math 314. Graph Theory (3)
Math 317. Theory of Linear Algebra (4)

Statistics (1 course):
One of the following courses.
Stat 305. Engineering Statistics (3)
Stat 330. Probability and Statistics for Computer Science (3)
Stat 341. Introduction to the Theory of Probability and Statistics I (4)

Appendix B.
Example Four-year B.A. Program for Computer Science

Computer Science – Bachelor of Arts			
FRESHMAN			
FALL	**CREDITS**	**SPRING**	**CREDITS**
COM S 101	R	COM S 227	4
COM S 127	4	MATH 166	4
MATH 165	4	ENGL 250	3
ENGL 150	3	Arts and Humanities	3
Social Science	3	LIB 160	1
	14		**15**
SOPHOMORE			
FALL	**CREDITS**	**SPRING**	**CREDITS**
COM S 228	3	COM S 311	3
COM S 230	3	Arts and Humanities	3
Natural Science 1	4	Natural Science 2	4
Elective	3	Elective	3
World Languages 1	3-4	World Languages 2	3-4
	16-17		**16-17**
JUNIOR			
FALL	**CREDITS**	**SPRING**	**CREDITS**
COM S 309	3	COM S 300/400 level elective	3
MATH Elective	3-4	English 300 level elective	3
SP CM 212	3	Elective	3
Arts and Humanities	3	STAT 300 level elective	3
Elective	3	Social Science	3
	15-16		**15**
SENIOR			
FALL	**CREDITS**	**SPRING**	**CREDITS**
COM S 300/400 level elective	3	COM S 300/400 level elective	3
COM S 300/400 level elective	3	COM S 300/400 level elective	3
Social Science and US Diversity/IP	3	Arts and Humanities and US Diversity/IP	3
Elective	3	Elective	3
Elective	3	Elective	3
	15		**15**

Note: The B.A. in Computer Science, like other B.A. degrees in LAS, gives students more freedom than the B.S. to design their own curricula. However, LAS degree requirements impose some rigor on this freedom. For example, the B.A. requires 24 upper-level credits in Computer Science, Mathematics,

and Statistics, but LAS requires at least 45 upper-level credits, so a substantial fraction of B.A. students' extra freedom will be confined to upper-level courses.

Appendix C.
Example Four-year B.A. Program for Computer Science - Psychology Double Major

Computer Science – Psychology Double Major			
FRESHMAN			
FALL	**CREDITS**	**SPRING**	**CREDITS**
COM S 101	R	COM S 227	4
COM S 127	4	MATH 166	4
PSYCH 101	3	Psychology area	3
MATH 165	4	Social science choice	3
ENGL 150	3	LIB 160	1
	14		**15**
SOPHOMORE			
FALL	**CREDITS**	**SPRING**	**CREDITS**
COM S 228	3	COM S 311	3
COM S 230	3	Psychology area	3
Psychology area	3	PSYCH 211	1
Arts and humanities choice	3	Psychology area	3
SP CM 212	3	ENGL 250	3
		Statistics choice (300 level)	3-4
	15		**16-17**
JUNIOR			
FALL	**CREDITS**	**SPRING**	**CREDITS**
COM S 309	3	Computer Science choice	3
PSYCH 301	3	Computer Science choice	3
Mathematics choice	3-4	PSYCH 302 or ENGL 302, 309, or 314	3
Required natural science	3-4	Psychology additional	3
World Language/elective	3-4	World language/elective	3-4
	15-18		**15-16**
SENIOR			
FALL	**CREDITS**	**SPRING**	**CREDITS**
Computer Science choice	3	Computer Science choice	3
PSYCH 440	3	Computer Science choice	3
Psychology additional	3	Psychology additional	3
Required natural science	3	Required natural science	3
PHIL 201	3	Philosophy additional	3
	15		**15**

Example Four-year B.A. Program for Computer Science - SPAN-LCP Double Major

Computer Science – Spanish LCP Double Major			
FRESHMAN			
FALL	**CREDITS**	**SPRING**	**CREDITS**
COM S 101	R	COM S 227	4
COM S 127	4	MATH 166	4
SPAN 303B	3	SPAN 304	3
		Social science choice	3
MATH 165	4	LIB 160	1
ENGL 150	3		
	14		**15**
SOPHOMORE			
FALL	**CREDITS**	**SPRING**	**CREDITS**
COM S 228	3	COM S 311	3
COM S 230	3	SPAN 351	3
SPAN 314	3		
Arts and humanities choice	3	SPAN 322 or 324	3
SP CM 212	3	ENGL 250	3
		Statistics choice (300 level)	3-4
	15		**16-17**
JUNIOR			
FALL	**CREDITS**	**SPRING**	**CREDITS**
COM S 309	3	Computer Science choice	3
SPAN 330/332	3	Computer Science choice	3
Mathematics choice	3-4	ENGL 302, 309, or 314	3
Required natural science	3-4	SPAN 321 or 323	3
Elective*	3-4	Elective	3-4
	15-18		**15-16**
SENIOR			
FALL	**CREDITS**	**SPRING**	**CREDITS**
Computer Science choice	3	Computer Science choice	3
SPAN 400-level	3	Computer Science choice	3
Elective	3	SPAN elective	3
Required natural science	3	Required natural science	3
PHIL 201	3	Elective	3
	15		**15**

- SPAN 499/395 (3 credits) Study abroad or internship abroad can be completed at any time during the undergraduate period. Studying abroad can account for up to 9 credits toward LCP during a summer or up to 15 credits during a semester.

Appendix D.
Letter of Support from the Dean of LAS

Appendix E.
Letter of Support from the Chair of the Department of Computer Science at U Iowa

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

College of Liberal Arts and Sciences
Office of the Dean
202 Catt Hall
Ames, Iowa 50011-1301
515 294-3220
FAX 515 294-1303

DATE: April 5, 2022

TO: Dr. Hridesh Rajan, Professor and Chair, Dept. of Computer Science

FROM: Beate Schmittmann, Dean, College of Liberal Arts and Sciences Beate

SUBJECT: Proposed B.A. degree in Computer Science

The College of Liberal Arts and Science is excited to support the proposal for a Bachelor's of Arts (B.A.) with a major in Computer Science (CS). As the proposal states, "*The purpose of the Bachelor of Arts degree in Computer Science is to accommodate students who wish to pursue a major in Computer Science while taking more courses outside of the major than a Bachelor of Science degree program permits. This will include students pursuing double majors, students pursuing one or more strong minors, and students pursuing broader liberal educations.*" Enabling such broad-based education while preparing students for the 21st century workforce is the core mission of LAS. The demand for computing professionals continues to increase and is expected to grow by 22% from 2020 to 2030[1]. The U.S. Bureau of Labor Statistics projects that 5,652 jobs in computer occupations will be needed in Iowa[2]. ISU has a long record of excellence in fields related to this degree such as computer science and data science. The College of Liberal Arts and Sciences is the academic home of these programs and therefore uniquely suited to offer the new degree. The Department of Computer Science has significant existing strengths in the area and offers a number of existing courses in Computer Science and is therefore a natural academic home for this new degree.

The college is pleased to provide the resources needed to create and staff the new major as described below and detailed in the program proposal.

- The LAS College and the department will review enrollments in the B.A. and B.S. degrees annually and collaborate to provide the necessary resources to staff any new sections in five Computer Science core courses (COMS 127, 227, 228, 309, and 311) that may be necessary to support enrollment in the program and any other demand for those courses.
- The LAS College will also work with the department to meet undergraduate enrollment demand through new tenure-track and term faculty hires as needed.
- The LAS College will provide advising support for the new program, either by reallocating staff members from existing advising teams or through the recruitment of additional advisors.

We look forward to working with our partners from other ISU colleges to help B.A. in CS majors experience the best possible education and career outcomes.

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[1] https://www.bls.gov/ooh/computer-and-information-technology/software-developers.htm
[2] https://www.bls.gov/emp/tables/occupational-projections-and-characteristics.htm

THE UNIVERSITY OF IOWA

UIOWA Computer Science

COLLEGE OF LIBERAL ARTS & SCIENCES
Department of Computer Science
14 MacLean Hall
Iowa City, Iowa 52242-1419
319-335-0713 *Fax* 319-335-3624
www.cs.uiowa.edu

Prof. Hridesh Rajan
Kingland Professor and Chair
Department of Computer Science
Iowa State University

April 7, 2022

Dear Hridesh;

Thank you for sharing your Department's BA program proposal with me; I apologize for the tardiness of this response.

Your proposal was briefly discussed at our April 6, 2022, faculty meeting, where it received a very favorable review. Your proposal is thoughtful, well reasoned, and consistent with curricular practices in place at US Computer Science Departments.

The general consensus seems to be that your BA program balances your BS program in exactly the same way our own BA/BS programs are related. The University of Iowa Computer Science Department and its faculty are pleased to be able to support it wholeheartedly.

Sincerely yours,

Alberto Maria Segre
Professor and Chair
Gerard P. Weeg Faculty Scholar in Informatics

Brumm, Thomas J [A&BE]

From: Hallam, Arne [LAS]
Sent: Monday, April 4, 2022 9:07 AM
To: Chaudhuri, Soma [COM S]
Cc: Brumm, Thomas J [A&BE]; Jacobson, Doug W [E CPE]
Subject: Re: CCCC meeting

The Computer Curriculum Coordination Committee reviewed the proposal for the BA in Computer Science some time ago and has no concerns about it going forward.

University of Northern Iowa
Department of Computer Science
305 Innovative Teaching & Technology Center
Cedar Falls, Iowa 50614-0507
319-273-2618
Fax: 319-273-7123
Web: www.cs.uni.edu
E-mail: dept@cs.uni.edu

April 13, 2022

Dear Dr. Rajan,

I am pleased to write to you in support of the proposed B.A. program to be offered by the Department of Computer Science at Iowa State University.

There remains a substantial need in Iowa industries for graduates with skills in computer science. The proposed curriculum offers students a strong foundation in computing and broad exposure to many sub-areas of the discipline.

The faculty in the Department of Computer Science at the University of Northern Iowa are happy to support your new degree program.

Sincerely,

Eugene Wallingford

Eugene Wallingford, Head

College of Humanities, Arts and Sciences
Office of the Dean

University of Northern Iowa

Apr 18, 2022

To Whom It May Concern

I am writing to offer the support of the College of Humanities, Arts and Sciences at the University of Northern Iowa for the proposed new B.A. degree in Computer Science at Iowa State University. Upon reviewing the materials provided in the proposal, the program appears to be a logical addition to the current offerings. We note the promise for new enrollment, as data suggests that many computer science jobs are available. We also appreciate the hope that the B.A. degree will successfully attract a more diverse student body than the B.S. degree program. Finally, the reduced number of credit hours (in comparison to the B.S. degree in Computer Science) does seem to make the program easier to combine with other majors and minors.

The University of Northern Iowa has a longstanding tradition of offering both the B.S. and B.A. degrees in Computer Science, but the impact on our program of this new offering at Iowa State University is likely to be minimal, primarily because, as noted in the segment of the proposal regarding the need for the program, data suggests that there is strong demand for trained computer science professionals that exceeds what universities in our state are currently able to provide.

In short, the University of Northern Iowa is pleased to support the proposal for Iowa State University to add a B.A. in Computer Science to its current offerings.

Sincerely,

Jennifer Cooley

Jennifer Cooley, Ph.D.
Associate Dean

266 Communication Arts Center • Cedar Falls, Iowa 50614-0358 • Phone: 319-273-2725 • Fax: 319-273-2731 • www.uni.edu/chas

Academic Program Approval Voting Record

This document is to be appended as the last page of the proposal for any new or revised academic program to record the successive votes of approval as the proposal moves through its required review and approval steps. Consult Faculty Handbook Section 10.8 or the Faculty Senate Curriculum Committee website for information regarding Committee review and voting requirements for each action.

Curricular Action: (check appropriate boxes below)

1. X New Program □ Name Change □ Discontinuation □ Concurrent Degree for:
2. X Undergraduate Major □ Graduate Major □ Undergraduate Minor □ Graduate Minor
   □ Undergraduate Certificate □ Graduate Certificate □ Other: _____
3. Name of Proposed Change: ___B.A. in Computer Science_____
4. Name of Contact Person: _Jack Lutz_____e-mail __lutz@iastate.edu_____
5. Primary College: _____LAS_____ Secondary College: _____
6. Involved Department(s): _Computer Science_____ _____
   _____ _____

Voting record for this curricular action:

Voting Body	Votes			Date of Vote
	For	Against	Abstain	
Dept. of Computer Science	30	0	0	11/29/21
LAS College Curriculum Committee	7	0	0	2/25/2022
College Approval Vote:				
--Faculty Representative Assembly	24	0	0	3/22/2022
Graduate Council	N/A	N/A	N/A	
Faculty Senate Curriculum Committee	6	0	0	
Faculty Senate Academic Affairs Council	14	0	0	4/14/2022
Faculty Senate				

[FSCC – November 2013]