

Contact: Rachel Boon

**REQUEST FOR NEW PROGRAM AT THE UNIVERSITY OF NORTHERN IOWA:  
BACHELOR OF APPLIED SCIENCE IN TECHNOLOGY**

**Action Requested:** Consider approval of the request by the University of Northern Iowa to establish a Bachelor of Applied Science in Technology in the Department of Technology of the College of Humanities, Arts & Sciences.

**Executive Summary:** The Bachelor of Applied Science in Technology (BAS) streamlines the requirements for baccalaureate degree completion of Associate of Applied Science (AAS) degree holders. This program builds on the success of the Bachelor of Arts in Technology Management that the Department of Technology has successfully run for three years, but eliminates some of the liberal arts requirements. The streamlined curriculum includes liberal arts content, but emphasizes the technology skills and management knowledge critical to advancement in workforce. The proposed program addresses the Board of Regents Strategic Plan objective 1.2; “The Board of Regents will incorporate strategies for a system that ensures the accessibility and affordability of higher education at Regent institutions.”

**Background:**

◇ Description of proposed program.

The Bachelor of Applied Science in Technology program is designed for non-traditional students who have obtained an Associate of Applied Science (AAS) degree in a career and technical field. The BAS in Technology program focuses on industry — its organization, resources, processes and management technologies. Incorporating an applied approach to critical thinking, communication and problem-solving skills, this program expands career opportunities by emphasizing the enhancement of management skills that build upon a strong technical background.

The BAS in Technology is designed with flexible scheduling to meet the needs of working professionals and distance learners with classes offered through online methods. Courses in the BAS in Technology include management, leadership, supervision courses in business communication, technological leadership, technological systems, and management.

◇ Academic objectives.

The BAS in Technology program has several learning objectives that will help students be successful in managerial, supervisory roles in a strong technology environment. These objectives will be measured through a comprehensive assessment procedure used in the evaluation of other accredited programs at UNI.

Learning Objectives

As graduates of the University of Northern Iowa’s BAS in Technology, students will be able to:

1. Understand technology as a concept.
2. Develop, produce, use, and assess technology.
3. Assess competence and commitment to meet a desired work performance goal.
4. Assess causes of a work performance discrepancy and needs for improving it.
5. Apply the “technological method” for implementing performance improvement efforts.

◇ Need for proposed program.

UNI suggests studies show, the United States needs to increase the number of students who attain baccalaureate degrees to develop the necessary level of an educated STEM workforce. For this reason, there is an urgency to develop sustainable transfer pathways to a baccalaureate degree for students who have obtained an Associate of Applied Science (AAS) degree. The need for transfer pathways for technology students was identified through the Department's Executive Advisory Board, Department of Technology faculty, and current and former students. The Department currently offers a BA in Technology Management, an online degree completion program designed for AAS students. Though successful with the third cohort in progress, this program has some limitations with regard to the curriculum for a Bachelor of Arts degree. The Bachelor of Applied Science (BAS) is an alternative, more efficient pathway for students to obtain a four-year degree. It requires students to take courses in the liberal arts and yet have a curriculum with strong technology content that enhances skills and knowledge of students necessary to be more effective in the workforce.

◇ Link to institutional strategic plan.

The current university Vision Statement states that UNI will "be nationally known for innovative education, preparing students for success in a rapidly changing, globally competitive, and culturally diverse world." A fully online BAS in Technology will represent an innovative opportunity for place-bound students to further their education and careers.

The current university Mission Statement states that UNI will "inspire students to ... engage in critical inquiry ... and contribute to society." A BAS in Technology will provide a curriculum that will allow students to engage in critical inquiry on topics ranging from business communication, technological leadership, technological systems, to management.

In the percentage of residents with college degrees, the state of Iowa ranks twenty-fifth in the nation. Only 25.3% of Iowans have a Bachelor's degree; this degree will help boost the Bachelor's degree attainment in the State of Iowa. This supports Goal 5 of UNI's strategic plan to "Enhance the economic, social, cultural, and sustainable development of the state."

The occupation-specific program content and delivery method of the BAS in Technology curriculum model makes this degree particularly attractive to the adult learner. The BAS program supports Goal 6, to "Ensure accountability, affordability, and access" by utilizing previously completed work (AAS degree) in the pathway toward the four-year degree and increases the number of non-traditional and distance learners.

◇ Relationship to existing programs at UNI.

For the current Bachelor of Arts Technology Management degree at the University of Northern Iowa, students have to complete 65-66 hours for the major while the BAS degree requires five fewer credit hours to earn the BAS degree. Thus, the BAS degree will be cost effective with five fewer credit hours and should require less time for students to complete the degree, though at the same time, it has a greater number of technology content courses. Based on the success of the new BAS in Technology degree, the Department will look to transition the current BA in Technology Management program over to the BAS degree as the online option for AAS students.

◇ Relationship to existing programs at other colleges and universities.

The BAS in Technology will be the only Bachelor of Applied Science in the area of Industrial Technology in the state of Iowa. This program will have a close relationship with all fifteen

Iowa community colleges and the AAS programs offered at these institutions due to the nature of this as a transfer degree.

◇ Unique features.

The Department of Technology at the University of Northern Iowa prides itself on providing a pathway for AAS degree holders. It also has a history of offering an online degree completion program where it has successfully offered classes for three student cohorts for the BA in Technology Management. In addition, the University is uniquely located in a large manufacturing hub with a number of manufacturers with employees that need a pathway to the baccalaureate level.

◇ Resources.

The Department of Technology currently works with the Division of Continuing Education and Special Programs for the delivery of the BA in Technology Management. It looks forward to partnering with this Division to deliver the BAS degree as well.

◇ Student demand.

It is projected that 90 percent of the fastest growing jobs in the United States will require some post-secondary education (Bureau of Labor Statistics, "Employment projections: 2014-24"). For STEM industries in particular, an educated workforce is essential. To fill this workforce shortage and expand access to baccalaureate degree attainment, higher education institutions need to develop transfer pathways for students with an AAS degree. The BAS in Technology can provide this option for many students who currently have AAS degrees in career and technical fields.

Currently, there are limited pathways in which AAS degree holders can transfer credits to a Bachelor's degree program without completing a high number of liberal arts courses. One option by which this transfer can happen is through the completion of an applied Bachelor's degree. Applied degrees have been present in postsecondary education since the 1970s but they have re-emerged in recent years; these programs can help fill the education gap. The Department of Technology has successfully offered an online degree completion program for AAS-degree holders through the BA in Technology Management degree. The BAS in Technology will be a more efficient option for these students as it is cost effective and has a more enhanced technology curriculum than the current option.

◇ Duplication.

No public or private institutions in Iowa currently offer a Bachelor of Applied Science in Technology.

◇ Workforce need/demand.

Once a global leader in science and technology, the United States has started to fall behind; this is partly due to the lack of students entering and graduating from disciplines related to STEM (National Science Foundation, 2015). To supply the workforce shortage, academia must look to bolster transfer pathways, enrollment, retention, and degree completion in STEM-related fields. As community colleges' career and technical education degree enrollments continue to rise, current students and former graduates provide the target population for the BAS in Technology four-year degree. According to the most recent data provided by the Iowa Department of Education Community College Division, almost 5,000 students per year graduate from an Iowa community college with an AAS degree (24,877 students from AY2010-

2014). Universities can have a unique opportunity to work with community college graduates to help fill the demand for a STEM workforce with the BAS degree option.

◇ Consultation with representatives of other programs.

Formal consultations with Regents institutions have not been undertaken as there is not a comparable degree at either the University of Iowa or Iowa State University, however, both institutions are informed of this planned new offering. Community college partners are enthusiastic about this planned new degree offering. No formal conversations have taken place with private institutions, however, UNI submitted a Notice of Intent to Offer through the Iowa Coordinating Council of Post High School Education (ICCPHSE) on September 9, 2016.

◇ Letters of support.

Attached are letters of support from Iowa State University, the University of Iowa, and Hawkeye Community College.

◇ Cost.

Estimated costs: \*Costs include an average instructional cost per section of \$10,000 and annual program expenses of \$5000 and \$5000 of advertising for each new cohort  
Single cohort total = \$220,000

	<b>TOTAL COSTS</b>	<b>TOTAL <u>NEW</u> COSTS</b>
Year 1: (3 TECH, 3 LAC classes, Advertising and Program Expenses)	\$70,000	\$70,000*
Year 2: (3 TECH, 3 LAC classes, Program Expenses)	\$135,000	\$65,000
Year 3: (3 TECH, 3 LAC classes, and Program Expenses)	\$200,000	\$65,000
Year 4: (1 TECH, 1 LAC class ( <i>end of 1<sup>st</sup> cohort</i> ), 2 TECH, 2 LAC classes ( <i>start of 2<sup>nd</sup> cohort</i> ), Advertising, and Program Expenses)	\$270,000	\$70,000
Year 5: (6 TECH + 6 LAC courses, Advertising, and Program Expenses) <i>two ongoing cohorts</i>	\$400,000	\$130,000
Year 6: (9 TECH + 9 LAC classes, Advertising, and Program Expenses) <i>three ongoing cohorts</i>	\$590,000	\$190,000
Year 7: (9 TECH + 9 LAC classes, Advertising, and Program Expenses) <i>three ongoing cohorts</i>	\$780,000	\$190,000

Estimated Revenue

<b>SOURCES</b>	<b>TOTAL AMOUNT</b>
Tuition and fees from enrolled students	\$296 per 1 credit hour; \$888 per 3 credit hour course + \$38 technology fee = \$926 per course
TUITION REVENUES YEAR 1: 3 TECH courses, 3 LAC courses	(\$926 x 6 courses x 30 students) \$166,680
TUITION REVENUES: YEAR 2: 3 TECH courses, 3 LAC courses (~ 18 credits)	(\$926 x 6 courses x 30 students) \$166,680
TUITION REVENUES: YEAR 3: 3 TECH courses, 3 LAC courses (~ 18 credits)	(\$926 x 6 courses x 30 students) \$166,680
TUITION REVENUES: YEAR 4: Fall: 1 TECH, 1 LAC course	(\$926 x 2 courses x 30 students) \$55,560

Total Revenue in 4 years: \$555,600

◆ Projected enrollment.

**Undergraduate** – Plan is to accept a new cohort every year after the first cohort completes. Year 4 will start a new cohort and a subsequent cohort will start in the years following.

Undergraduate	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Majors	30	30	30	30	60	90	90
Non-Majors	0	0	0	0	0	0	0

b. **Graduate**

Graduate	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Majors	0	0	0	0	0	0	0
Non-Majors	0	0	0	0	0	0	0

◆ Anticipated sources of students.

Iowa community colleges and manufacturing businesses are likely sources of students. The University of Northern Iowa sits in an area that houses a heavy manufacturing community. In addition, the need for this program was identified through the Department of Technology's Executive Advisory Board. The Executive Advisory Board members are professionals in the field and understand the need for additional STEM professionals. During spring 2016, at the Department of Technology Advisory Board meeting, a motion was passed by the Advisory Board to fully support the Department's initiative to offer this degree.

◆ Articulation agreement.

UNI currently has articulation agreements with all 15 Iowa community colleges and we will continue to update all of our agreements. This is a transfer degree, all students entering the BAS in Technology will be required to have obtained an AAS degree.

◇ Off-campus delivery.

The proposed program will be delivered entirely online by UNI faculty. The program will obtain any necessary HLC approval.

◇ Accreditation.

The Department will be in communication with Association for Technology, Management and Applied Engineering (ATMAE) for accreditation of this program when the department programs are up for renewal in 2018.

◇ Opportunities for internships.

This program will require a Senior Project course which will provide a Capstone type of experience.

◇ Marketing plan.

This program will be marketed through the Division of Continuing Education and Special Programs and through the Department of Technology's recruitment coordinator. Full marketing materials will be created and distributed. Additional recruitment brochures and email communications will be developed by working closely with the Office of Continuing and Distance Education to distribute to targeted AAS degree graduates.

◇ Evaluation plan.

The department will work closely with the Division of Continuing Education and Special Programs to evaluate the BAS in Technology. Data collection will occur through multiple activities at different levels from all students and faculty.

The assessment plan for the evaluation of the Bachelor of Applied Science in Technology complements the current plan used for ATMAE accreditation for other applicable programs. The primary purpose of program assessment is to identify if the program is meeting the proposed outcomes in helping students to succeed. As such, artifacts from coursework will be collected from a variety of courses that address specific outcomes. Assessment is also performed to improve the program; the results are valuable to the members of the Department of Technology to improve the content and delivery implementation. Evaluation can provide in-depth and contextualized understanding of the program and its practices from the perspective of the stakeholders, specifically the University of Northern Iowa, BAS in Technology program participants and employers. Additionally, the Department of Technology has an external Advisory Board made up of industry professionals who also have an important advisory role in the program. By gathering the perspectives of these stakeholders, insights can provide information as to how the program will enhance associate to baccalaureate degree transfer, increased baccalaureate attainment, the effectiveness of the instructional delivery, and the alignment of higher education with the workforce needs.

◇ Date of implementation.

Creation of the proposed program will become effective upon approval by the Board of Regents and will be included in the University's General Catalog. The anticipated implementation date is August 2017.

LETTERS OF SUPPORT



COLLEGE OF  
LIBERAL ARTS & SCIENCES

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August 19, 2016

John Fritch  
Dean, College of Humanities, Arts and Sciences  
Professor, Communication Studies  
University of Northern Iowa

Dear John:

I am very pleased to offer the support of the UI College of Liberal Arts and Sciences for the proposed UNI Bachelor of Applied Science (BAS) in Technology program.

The BAS in Technology will serve learners who are working professionals pursuing additional education after completing an Associate of Applied Science (AAS) degree from a community college.

The program clearly draws on the strengths of the UNI Department of Technology, which specializes in applied technologies as related to industry, management, and manufacturing as well as to metal casting, electrical engineering technology, and printing and design.

Creating this new area of specialization for the BAS degree will help foster the further education of the workforce and give exciting opportunities to many wanting to enhance their career experiences with both technical training and further studies in liberal arts core courses.

We wish you the very best in this new endeavor.

Sincerely,

Chaden Djalali, Dean  
UI Alumni Association Dean's Chair  
College of Liberal Arts & Sciences

cc: Helena Dettmer, Associate Dean for Undergraduate Programs and Curriculum

**IOWA STATE UNIVERSITY**  
OF SCIENCE AND TECHNOLOGY

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September 12, 2016

John Fritch  
Dean, College of Humanities, Arts and Sciences  
Professor, Communication Studies  
University of Northern Iowa  
Cedar Falls, IA 50614

Dear Dean Fritch,

Thank you for your note requesting input from Iowa State's College of Liberal Arts and Sciences as the University of Northern Iowa develops its proposal to offer a new degree program: Bachelor of Applied Science in Technology. The proposed BAS degree, similar to the existing BAS programs, serves an important audience and we are happy to offer our support for its development.

According to the information flyer provided, the proposed BAS in Technology aims to provide working professionals with AAS degrees a clear pathway to a four year degree with coursework and learning outcomes designed to build on prior learning, enhance the technical and professional skills of students and provide a liberal arts core that is critical to their future success.

We support UNI in its plan to establish a Bachelor of Applied Science in Technology and look forward to reviewing the complete proposal before it goes to the Regents.

Thank you for giving us the opportunity to review the proposed degree requirements. It is always good to keep open the lines of communication across the Regents Institutions. If I can be of further assistance, please let me know.

Sincerely,



Amy R. Slagell  
Associate Dean for Academic Programs  
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I am writing this letter on to encourage you to support the University of Northern Iowa and their initiative to develop the degree of Bachelor of Applied Science in Technology. I believe that this degree would be a benefit to many students, members of the workforce and employers by providing the opportunity for people who have graduated with an Associate of Applied Science degree from a community college the ability to gain more management related skills that will increase their upward mobility in the industry of their choice.

This past spring the Department of Technology at UNI presented their model of the Bachelor of Applied Science in Technology. It showed great thought and emphasized that this program would produce graduates who understood the systems approach to managing and understanding technology, would be able to develop and manage technological systems, problem-solve solutions for operational issues and be able to apply the technological method to industrial situations. An employee who has a background in the applied aspect of an industry that then obtains the skills this degree offers will significantly increase their employability skills beyond the production line. This is a huge benefit our community college graduates as our programs, by design, are geared more to the entry level/production level aspect of the industry. This degree becomes the next step.

The fact that this is degree is offered 100 percent online will also enable those working adults/parents to be able to gain advanced skills in management and problem solving. Many local employees cannot take the time off to return to school. The flexibility of the online degree will allow many more people to take advantage of this degree.

From the community college perspective, this degree allows our technical students a greater opportunity to obtain a bachelor's degree. Currently an AAS does not transfer into UNI very well. The current transfer agreements that we enjoy with UNI allows for only about 30-36 credits to transfer. The majority of the technical credits are not accepted. For many of the students who graduate with the AAS, there is just not that transfers to motivate them to pursue more education. In addition, many of them need to enter the workforce for financial/family reasons. This degree alleviates many barriers for them and I foresee many more students taking advantage of this.

For these reasons, I feel that this is degree has many advantages for community college technical programs, employers in these industrial areas, and UNI.

Dave Grunklee  
Dean of Applied Science and Engineering Technology  
Hawkeye Community College  
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