

Rationale for Name Change for Industrial Technology Undergraduate Minor

Tom Brumm,
Chair, ABE Technology Curriculum Committee
Department of Agricultural and Biosystems Engineering
August 13, 2018

Current minor name: Industrial Technology
Proposed minor name: Applied Engineering and Technology Management

The Department of Agricultural and Biosystems Engineering has proposed changing the name of the Industrial Technology undergraduate major to “Applied Engineering and Technology Management.” This proposal reflects changes in the industries in which the graduates are employed, as well as changes in the professional society that accredits the degree. A copy of the proposal to the Board of Regents, which contains the complete rationale, is attached.

The undergraduate minor should have the same name as the major. No change in minor requirements will be made.

The undergraduate minor name should not change unless and until the name change for the major is approved.

FORM G
BOARD OF REGENTS, STATE OF IOWA
PROPOSAL FOR PROGRAM/DEPARTMENT CHANGE
July 1, 2015

Institution: Iowa State University

Current Title of Program/Department: Industrial Technology

Proposed Title of Program/Department: Applied Engineering and Technology Management

Name of College: Agriculture and Life Science

Current CIP Discipline Specialty Title: Industrial Technology

Proposed CIP Discipline Specialty Title: Industrial Technology

Current CIP Discipline Specialty Number (six digits): 15.0612, 15.0613, 15.0701, 15.0702, 15.0703

Proposed CIP Discipline Specialty Number (six digits): 15.0612, 15.0613, 15.0701, 15.0702, 15.0703

Current Level: B X M _____ D _____ FP _____

Proposed Level: B X M _____ D _____ FP _____

Degree Abbreviation (e.g., B.S., B.A., M.A.): Minor

Approximate date to implement changes: Month August Year 2018

Contact person: (name, telephone, and e-mail) Steven Mickelson, (515) 294-1434, estaben@iastate.edu

Please do not use acronyms without defining them.

1. Provide a brief description of the current department/program.
2. Describe reasons (justification) for the proposed changes. Include information about the value of the changes to the department, program, discipline, college, and/or the university.
3. What will be the effect of the proposed change on current students?
4. If this is a program/department name change, describe the proposed name is consistent with the mission of the college and university.
5. Will the proposed change be consistent with other programs at the university or other universities in the state? If this is a program/department name change, identify other institutions with the same or similar name.
6. Is the proposed change consistent with association/accreditation requirements? Have accreditation requirements been addressed?
7. Describe program configuration changes that will result from the proposed program change, e.g., change in number of credit hours required, etc.
8. What costs will be incurred by the proposed program change? Identify new resources that will be needed in connection with the proposed program change, e.g., facilities, faculty, funds, etc. How will the proposed program change be administered? Provide a three-year analysis of costs resulting from the proposed program change.
9. Is this intended to be a temporary or permanent change? If temporary, for how long?
10. What are the workforce needs in the state for the proposed program change? Be as specific as possible and include sources of data.
11. Provide any other information that might be helpful to the Board of Regents in considering this request.

Please see following pages for answers...

1. Provide a brief description of the current department/program.

Successful graduates of the minor in Industrial Technology (ITec) program have knowledge, skills, and abilities in solving technical problems, using the engineering design process, excelling in authentic leadership, being aware of safety issues, having a quality orientation, effectively managing projects, and having a systems-thinking perspective. This translates to a holistic approach that uses science and engineering principles to focus on the way the constituent parts of a manufacturing system interrelate, how they work over time, and how they fit the context of larger systems. Graduates find careers within a variety of industries, businesses, and organizations in the fields of advanced manufacturing; robotics; automation and controls; electronics; lean manufacturing; quality management; safety management, loss prevention; or industrial hygiene.

2. Describe reasons (justification) for the proposed changes. Include information about the value of the changes to the department, program, discipline, college, and/or the university.

The term “Industrial Technology” has become an outdated and is misleading descriptor of what students in this program are educated to do and what professionals with this degree actually do. The terms “Applied Engineering” and “Technology Management” more clearly describe our program and what our graduates do. Furthermore, these terms better align with the identity and scope of our program’s accrediting body and professional organization – the Association of Technology, Management, and Applied Engineering (ATMAE). This organization went through a similar name change in 2009. The purpose of this change was to update its old name – the National Association of Industrial Technology (NAIT) – to a more current and applicable name. The intent of the name change of this Form G document is to follow suite.

As stated in ATMAE’s Organizational Identity/Scope¹ document:

Applied Engineering is the field concerned with the application of management, design, and technical skills for the design and integration of systems, the execution of new product designs, the improvement of manufacturing processes, and the management and direction of physical and/or technical functions of a firm or organization. Applied Engineering degreed programs typically include instruction in basic engineering principles, project management, industrial processes, production and operations management, systems integration and control, quality control, and statistics. (p. 3)

Technology Management is the field concerned with the supervision of personnel across the technical spectrum and a wide variety of complex technological systems. Technology Management degreed programs typically include instruction in production and operations management, project management, computer applications, quality control, safety and health issues, statistics, and general management principles. (p. 2)

By changing the Industrial Technology program minor's name to these terms, the Department of Agricultural and Biosystems Engineering will be able to better align to the corresponding program major name change, as well as more clearly and effectively market this minor to prospective students and industry partners in Iowa and beyond. Furthermore, this change will help clarify the competencies that are the focus of this minor, better align the minor with ATMAE, and improve the unity of the corresponding discipline.

¹ ATMAE. (2017, April 28). *ATMAE’s Organizational Identity/Scope*. Retrieved January 15, 2018, from Association of Technology, Management, and Applied Engineering: https://c.ymcdn.com/sites/atmae.site-ym.com/resource/resmgr/Organizational_Identity.pdf

3. What will be the effect of the proposed change on current students?

By changing the program minor name to include “Applied Engineering” and “Technology Management”, students will be able to more clearly understand the competency expectations and goals of the program. Students will be able to more clearly and effectually promote their education to prospective employers and professionals, as the name will be a more current description of their skills, abilities, and knowledge.

4. If this is a program/department name change, describe how the proposed name is consistent with the mission of the college and university.

The proposed name change will improve the alignment of the program minor with Iowa State University’s mission to “create, share, and apply knowledge to make Iowa and the world a better place.” This application of knowledge is strongly emphasized by the University, especially through educational experiences that allow students to learn by doing. Furthermore, this emphasis is a predominant focus of the applied engineering and technology management profession and associated programs across the nation. The proposed name change will only strengthen the connection between the program, the University mission, and the profession.

5. Will the proposed change be consistent with other programs at the university or other universities in the state? If this is a program/department name change, identify other institutions with the same or similar name.

There are no similar program minors at Iowa State University or University of Iowa. The Department of Technology at the University of Northern Iowa offers two related programs: A bachelor of science degree in Manufacturing Technology (also accredited by ATMAE) and an unaccredited bachelor of arts degree in Technology Management.

6. Is the proposed change consistent with association/accreditation requirements? Have accreditation requirements been addressed?

The proposed name change is consistent with ATMAE accreditation requirements. If approved, we will need to update ATMAE regarding the name change, but this will not result in any changes to accreditation requirements.

7. Describe program configuration changes that will result from the proposed program change, e.g., change in number of credit hours required, etc.

No program configuration changes are expected.

8. What costs will be incurred by the proposed program change? Identify new resources that will be needed in connection with the proposed program change, e.g., facilities, faculty, funds, etc. How will the proposed program change be administered? Provide a three-year analysis of costs resulting from the proposed program change.

There will be no costs incurred as a result of the proposed program change. No new resources in facilities, faculty, staff or equipment will be needed. Program administration will not change from current

practices. The proposed name change will require new promotional materials. However, this is an ongoing cost and not a new cost incurred as a result of the proposed change.

9. Is this intended to be a temporary or permanent change? If temporary, for how long?

This is intended to be a permanent program minor name change.

10. What are the workforce needs in the state for the proposed program change? Be as specific as possible and include sources of data.

Based on indeed.com searches conducted on January 9th, 2018, the following position openings were found:

- Applied Engineering positions:
 - Iowa: 50 full-time, 10 contract
 - United States: 13,000 full-time, 700 contract
- Technology Management positions:
 - Iowa: 1,800 full-time, 200 contract
 - United States: 316,700 full-time and 21,900 contract

While the proposed name change will not change these workforce needs, it will allow students to more easily apply to fill these positions.

11. Provide any other information that might be helpful to the Board of Regents in considering this request.

ATMAE, the program's accrediting body and professional organization, changed its name from NAIT to ATMAE to more clearly describe the types of programs it accredits and the profession it promotes. The proposed name change will better align the program minor with this accrediting body and professional organization. Furthermore, many Iowa State University faculty and graduate students have served in leadership roles for ATMAE to promote the values, mission, and vision of this organization and profession. The proposed name change would support this effort, both in Iowa, the nation, and around the world.

Furthermore, on April 20th, the Technology Curriculum Committee Chair (Thomas Brumm), Co-Chair (Gretchen Mosher), and member (John Haughery) presented the proposed name change to the External Advisory Council (EAC) of the Department of Agricultural and Biosystems Engineering. The overwhelming consensus from EAC was support for the proposed name change. Furthermore, many individuals commented that the new name would improve Human Resource department's ability to better understand the knowledge, skills, and competencies of graduates from the current Industrial Technology program. No issue was had with the use of the term "engineering" in the proposed name, but many EAC members commented that the qualifier of "applied" would make it clear that the program was not a traditional engineering minor.

