



Biosystems and Agricultural Engineering

128 Charles E. Barnhart Building  
Lexington, KY 40546-0276

859 257-3000  
[www.bae.uky.edu](http://www.bae.uky.edu)

October 21, 2014

Dr. Larry Grabau  
Associate Dean for Academic Programs  
College of Agriculture, Food, and Environment  
N-6 Agricultural Science Center North  
Lexington, Kentucky 40546-0091

Dear Dr. Grabau:

I am writing today to ask for your permission and the College Curriculum Committee's permission for our department to offer a new undergraduate minor in "Technical Systems Management" or TSM, to be offered in the College of Agriculture, Food and Environment.

Technical Systems Management (or similarly named) is a program that most of our sister Biosystems and Agricultural Engineering departments have offered for many years. The University of Kentucky has not offered this program before, and we think it is an opportune time to explore this idea. Offering a "minor" in TSM would allow us to explore the interest in such a program and then grow the program if the minor is successful. TSM links agricultural, environmental, manufacturing, and machinery theory with industrial practice, providing business and management skills from a hands-on, engineering technology point of view. The TSM undergraduate minor will combine classroom education and hands-on experience because, as an applied engineering department, our faculty expertise strongly lends itself to teaching these technical skills.

Students who choose to minor in TSM will gain the ability to:

- Demonstrate recognition of and competency using common fabrication tools and equipment.
- Understand and practice safety precautions on the job site.

Depending on the elective courses the students select, they will also be prepared to:

- Recognize the differences in electrical services and be able to repair basic electrical issues.
- Comprehend working mechanics of machines, engines, hydraulics, and power transmissions.
- Understand the relationship between food physical/chemical properties and the processes used to process food.
- Understand and apply land surveying principles and techniques.
- Understand occupational safety and health regulations.
- Relate the chemistry of beer to the production practices used and troubleshoot off flavors.

For a minor in TSM, we would require all the students to take

**TSM 101:** Introduction to Technical Systems Management (1 credit, FA semester)

and

**TSM 252:** Fabrication and Construction for Technical Systems (3 credits, SP semester)

Students would also be required to take a minimum of 11 hours from the following list:

**TSM 103:** Basic Principles of Surveying (3 credits, FA semester)

**TSM 220:** Principles of Internal Combustion Engines (3 credits, FA semester)

**TSM 340:** Principles of Food Engineering (3 credits, FA semester)

<sup>†</sup>**TSM 341:** Beer Science and Technology (3 credits, new course SP 2015)

<sup>†</sup>**TSM 370:** Fundamentals of Occupational Safety and Health (new course to be offered SP 2016) (3 credits)

**TSM 461G:** Biometeorology (3 credits, SP semester)

<sup>†</sup>These courses are being submitted to the course approval process later this fall; they are not established as of August, 2014.

The forms for the formation of a new minor are attached. I assume that if/when the minor is approved by the College, your office will route the forms through the appropriate committees. Please let me know if this is not the procedure.

Thank you for your assistance with this endeavor.

Sincerely,



Sue E. Nokes, PhD, PE  
Professor and Chair  
Biosystems and Agricultural Engineering Department



**NEW UNDERGRADUATE MINOR / CHANGE UNDERGRADUATE MINOR FORM**

Current Total Hours: \_\_\_\_\_

Proposed Total Hours: \_\_\_\_\_

Rationale for Proposal: \_\_\_\_\_

Will this program be printed in the Bulletin?

Yes

No

**NEW UNDERGRADUATE MINOR / CHANGE UNDERGRADUATE MINOR FORM**

Signature Routing Log

**General Information:**

Proposal Name: Technical Systems Management Minor

Proposal Contact Person Name: Sue Nokes Phone: 218-4328 Email: snokes@uky.edu

**INSTRUCTIONS:**

Identify the groups or individuals reviewing the proposal; note the date of approval; offer a contact person for each entry; and obtain signature of person authorized to report approval.

**Internal College Approvals and Course Cross-listing Approvals:**

<b>Reviewing Group</b>	<b>Date Approved</b>	<b>Contact Person (name/phone/email)</b>	<b>Signature</b>
Biosystems and Agricultural Engineering (BAE) Faculty	5/30/2014	Sue Nokes / 218-4328 / snokes@uky.edu	
BAE Chair	8/25/2014	Sue Nokes / 218-4328 / snokes@uky.edu	
Undergraduate Curriculum Committee, College of Agriculture, Food and Environment	9/12/2014	Larry Grabau / 7-3469 / lgrabau@uky.edu	
		/ /	
		/ /	

**External-to-College Approvals:**

<b>Council</b>	<b>Date Approved</b>	<b>Signature</b>	<b>Approval of Revision<sup>1</sup></b>
Undergraduate Council	11/17/15	Joanie Ett-Mims	
Graduate Council			
Health Care Colleges Council			
Senate Council Approval		University Senate Approval	

Comments:

<sup>1</sup> Councils use this space to indicate approval of revisions made subsequent to that council's approval, if deemed necessary by the revising council.

## Course Explanations for the Proposed TSM minor

**TSM 101:** Introduction to Technical Systems Management (1 credit) is currently being offered as GEN 109 until a TSM prefix is established. This course will then be requested as a new course.

**TSM 103:** Basic Principles of Surveying (3 credits) is modeled after a course the BAE department has on the books but has not taught for several years. We propose reactivating the AEN 103 Basic Principles of Surveying course and cross-listing it with the TSM course.

**TSM 220:** Principles of Internal Combustion Engines (3.0 credits) is currently being offered as AEN 220: Farm Tractors and Engines. We propose cross-listing the TSM course with the AEN course.

**TSM 252:** Fabrication and Construction for Technical Systems (3 credits) is currently being offered as AEN 252: Farm Shop. We propose cross-listing the TSM course with the AEN course.

**TSM 340:** Principles of Food Engineering (4.0 credits) is currently being offered as AEN 340: Principles of Food Processing which has been taught every other year. We propose teaching the course yearly and cross-listing the TSM course with the AEN course.

**TSM 341:** Beer Science and Technology (3 credits) will be a new course developed for the Beer, Wine, and Spirits certificate, which we can leverage for the TSM minor.

**TSM 370:** Fundamentals of Occupational Safety and Health (3 credits) will be a new course which will provide TSM students with a managerial perspective of occupational safety and health in a workplace fully regulated by OSHA.

**TSM 461G:** Biometeorology (3 credits) is currently being offered as AEN 461G: Biometeorology. We propose cross-listing the TSM course with the AEN course.