

1. General Information

1a. Submitted by the College of: AGRICULTURE, FOOD AND ENVIRONMENT

Date Submitted: 1/25/2016

1b. Department/Division: Biosystems & Agr Engineering

1c. Contact Person

Name: Sue Nokes

Email: snokes@uky.edu

Phone: 8592184328

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

1d. Requested Effective Date: Semester following approval

1e. Should this course be a UK Core Course? No

2. Designation and Description of Proposed Course

2a. Will this course also be offered through Distance Learning?: No

2b. Prefix and Number: TSM 203

2c. Full Title: Basic Principles of Surveying

2d. Transcript Title: Basic Prin of Surveying

2e. Cross-listing: AEN 203

2f. Meeting Patterns

LECTURE: 2

LABORATORY: 2

2g. Grading System: Letter (A, B, C, etc.)

2h. Number of credit hours: 3

2i. Is this course repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester?

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SENATE COUNCIL

2j. **Course Description for Bulletin:** This course provides an introduction to the basic principles of surveying, the general use of surveying equipment, and basic surveying methods. This course is not intended for students who are seeking to become licensed surveyors. Lecture, two hours; laboratory, two hours. Prereq: High School Trigonometry, Enrollment in the College of Agriculture, Food and Environment and/or consent of instructor.

2k. **Prerequisites, if any:** A minimum of high school trigonometry, and enrollment in the College of Agriculture or consent of the instructor.

2l. **Supplementary Teaching Component:**

3. **Will this course taught off campus?** No

If YES, enter the off campus address:

4. **Frequency of Course Offering:** Fall,

Will the course be offered every year?: Yes

If No, explain:

5. **Are facilities and personnel necessary for the proposed new course available?:** Yes

If No, explain:

6. **What enrollment (per section per semester) may reasonably be expected?:** 15

7. **Anticipated Student Demand**

Will this course serve students primarily within the degree program?: No

Will it be of interest to a significant number of students outside the degree pgm?: Yes

If Yes, explain: This course is suggested as as part of the TSM minor to be offered in the College of Agriculture, Food and Environment. All majors within the CAFE may select TSM as their minor.

8. **Check the category most applicable to this course:** Traditional – Offered in Corresponding Departments at Universities Elsewhere,

If No, explain:

9. **Course Relationship to Program(s).**

a. **Is this course part of a proposed new program?:** Yes

If YES, name the proposed new program: Minor in Technical Systems Management

b. **Will this course be a new requirement for ANY program?:** No

If YES, list affected programs:

10. **Information to be Placed on Syllabus.**

a. **Is the course 400G or 500?:** No

b. **The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable, from 10.a above) are attached:** Yes

Distance Learning Form

Instructor Name:

Instructor Email:

Internet/Web-based: No

Interactive Video: No

Hybrid: No

1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?

2. How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.

3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.

4. Will offering this course via DL result in at least 25% or at least 50% (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?

If yes, which percentage, and which program(s)?

5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?

6. How do course requirements ensure that students make appropriate use of learning resources?

7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.

8. How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (<http://www.uky.edu/UKIT/>)?

9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? NO

If no, explain how student enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

10. Does the syllabus contain all the required components? NO

11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:

SIGNATURE|LGRABAU|Larry J Grabau|TSM 203 NEW College Review|20150121

SIGNATURE|LGRABAU|Larry J Grabau|TSM 203 NEW College Review|20160125

SIGNATURE|JMETT2|Joanie Ett-Mims|TSM 203 NEW Undergrad Council Review|20160506

New Course Form

<https://myuk.uky.edu/sap/bc/soap/rfc?services=>

[Open in full window to print or save](#)

Generate F

Attachments:

Upload File

ID	Attachment
Delete 6781	TSM 203 Course Syllabus Rev 4 27 16.docx

(*denotes required fields)

1. General Information

- a. * Submitted by the College of: Submission Date:
- b. * Department/Division:
- c.
- * Contact Person Name: Email: Phone:
- * Responsible Faculty ID (if different from Contact): Email: Phone:
- d. * Requested Effective Date: Semester following approval OR Specific Term/Year¹
- e.
- Should this course be a UK Core Course? Yes No
- If YES, check the areas that apply:
- Inquiry - Arts & Creativity Composition & Communications - II
- Inquiry - Humanities Quantitative Foundations
- Inquiry - Nat/Math/Phys Sci Statistical Inferential Reasoning
- Inquiry - Social Sciences U.S. Citizenship, Community, Diversity
- Composition & Communications - I Global Dynamics

2. Designation and Description of Proposed Course.

- a. * Will this course also be offered through Distance Learning? Yes⁴ No
- b. * Prefix and Number:
- c. * Full Title:
- d. Transcript Title (if full title is more than 40 characters):
- e. To be Cross-Listed² with (Prefix and Number):
- f. * Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours³ for each meeting pattern type.
- | | | | |
|--|--|---------------------------------|---------------------------------|
| <input type="text" value="2"/> Lecture | <input type="text" value="2"/> Laboratory ¹ | <input type="text"/> Recitation | <input type="text"/> Discussion |
| <input type="text"/> Indep. Study | <input type="text"/> Clinical | <input type="text"/> Colloquium | <input type="text"/> Practicum |
| <input type="text"/> Research | <input type="text"/> Residency | <input type="text"/> Seminar | <input type="text"/> Studio |
| <input type="text"/> Other | If Other, Please explain: <input type="text"/> | | |
- g. * Identify a grading system:
- Letter (A, B, C, etc.)
- Pass/Fail
- Medicine Numeric Grade (Non-medical students will receive a letter grade)
- Graduate School Grade Scale
- h. * Number of credits:
- i. * Is this course repeatable for additional credit? Yes No
- If YES: Maximum number of credit hours:
- If YES: Will this course allow multiple registrations during the same semester? Yes No

j. * Course Description for Bulletin:

This course provides an introduction to the basic principles of surveying, the general use of surveying equipment, and basic surveying methods. This course is not intended for students who are seeking to become licensed surveyors. Lecture, two hours; laboratory, two hours. Prereq: High School Trigonometry, Enrollment in the College of Agriculture, Food and Environment and/or consent of instructor.

k. Prerequisites, if any:

A minimum of high school trigonometry, and enrollment in the College of Agriculture or consent of the instructor.

l. Supplementary teaching component, if any: Community-Based Experience Service Learning Both3. * Will this course be taught off campus? Yes No

If YES, enter the off campus address:

4. Frequency of Course Offering.

a. * Course will be offered (check all that apply): Fall Spring Summer Winter

b. * Will the course be offered every year? Yes No

If No, explain:

5. * Are facilities and personnel necessary for the proposed new course available? Yes No

If No, explain:

6. * What enrollment (per section per semester) may reasonably be expected? 15

7. Anticipated Student Demand.

a. * Will this course serve students primarily within the degree program? Yes No

b. * Will it be of interest to a significant number of students outside the degree pgm? Yes No

If YES, explain:

This course is suggested as as part of the TSM minor to be offered in the College of Agriculture, Food and Environment. All majors within the CAFE may select TSM as their minor.

8. * Check the category most applicable to this course:

Traditional – Offered in Corresponding Departments at Universities Elsewhere

Relatively New – Now Being Widely Established

Not Yet Found in Many (or Any) Other Universities

9. Course Relationship to Program(s).

a. * Is this course part of a proposed new program? Yes No

If YES, name the proposed new program:

Minor in Technical Systems Management

b. * Will this course be a new requirement ⁵ for ANY program? Yes No

If YES ⁵, list affected programs.:

10. Information to be Placed on Syllabus.

a. * Is the course 400G or 500? Yes No

If YES, the *differentiation for undergraduate and graduate students must be included* in the information required in 10.b. You must include: (i) identify additional assignments by the graduate students; and/or (ii) establishment of different grading criteria in the course for graduate students. (See SR

b. * The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable 10.a above) are attached.

¹¹ Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.

¹² The chair of the cross-listing department must sign off on the Signature Routing Log

- In general, undergraduate courses are developed on the principle that one semester hour of credit represents one hour of classroom meeting per week for a semester, exclusive of any laboratory meeting. Laboratory meeting, generally, requires two hours per week for a semester for one credit hour. (from SR 5.2.1)
- You must also submit the Distance Learning Form in order for the proposed course to be considered for DL delivery.
- In order to change a program, a program change form must also be submitted.

Rev 8/09

Course Syllabus
TSM 203: Basic Principles of Surveying
2016 Fall Semester

Course Description

This course provides an introduction to the basic principles of surveying, the general use of surveying equipment, and basic surveying methods. This course is not intended for students who are seeking to become licensed surveyors. Lecture, two hours; laboratory, two hours. Prereq: High School Trigonometry, Enrollment in the College of Agriculture, Food and Environment and/or consent of instructor.

Course Rationale

The purpose of this course is to provide an understanding of the basic concepts of surveying and to develop the skills necessary to perform basic surveying tasks. The course will cover the proper use of surveying equipment and provide opportunity in the lab sessions to get hands-on experience using that equipment. Data recorded in the lab sessions will be used to make the computations necessary to complete the task at hand (determine land area, elevation difference, etc.). The knowledge gained in this course will not qualify you to be a professional land surveyor, but will provide you with the basic knowledge and skills you may need in your future occupation.

Credit Hours

3.0 credit hours [2 credit hour lecture and a 1 credit hour lab (2 hours of lab contact time)]

Student Learning Outcomes

At the completion of this course, the student will:

1. Describe the function and use of surveying equipment and instruments, including engineer's level, transit, total station, and basic GPS equipment.
2. Demonstrate ability to apply appropriate surveying techniques and methodologies to complete different types of plane surveys with an acceptable level of accuracy.
3. Employ required computations to determine/develop such things as land areas, elevations differences, plot boundaries, topographic maps, and construction layouts.

Prerequisites

A minimum of high school trigonometry and enrollment in the TSM Minor, or consent of the instructor.

Course Administration

Instructor: Alex Fogle
Office: Room 105 C. E. Barnhart Building
Office Phone: 257-4012 (Please leave a message if no answer)
Email: alex.fogle@uky.edu

Lecture Hours: TH from 1-3
Location: CEBA 228

Office Hours: W 1-3, TH 10-11
Room 105 CEBA

Laboratory Hours: TH 3-5

Location: outside (228,151 backup)

Note: Inclement weather will not stop work in the field during lab sessions. Therefore, you should wear suitable clothing to the lab session for the current weather situation. Be prepared for mud, snow, and wind.

Materials Required

Text: "Surveying", McCormac, Sarasua, and Davis, 6th Edition, 2012, Wiley

Additional Materials: Surveyors Field Book 4-7/8" x 7-1/4" (Elan E 64-8x4W)
Hand-held calculator with trigonometric functions and D-M-S conversion
Mechanical Pencil
Engineering Paper

Lecture

Learning the elements of surveying requires team work. Each lecture will cover the material that will be used to complete the following laboratory assignments. Therefore, attendance is mandatory so that each member of the surveying team understands what is going on in laboratory field assignments.

Homework Assignments

Surveying homework will be assigned regularly. In each case, the due date will be announced. **Homework must be handed in on the day it is due, before the class period, or your grade for that assignment will be reduced by 20% per day it is late. All homework must be completed on engineering paper. Unless the student has a verified excused absence, failure to do so will result in a 10% reduction in your grade for that assignment.** (Please arrange a modified due date with the instructor as soon as you know you will have or have had an excused absence). Sloppy or illegible work should be avoided, and all work must be shown for credit. If I cannot logically follow what you have done, then you will not receive credit. Homework problems will be graded primarily on: 1) the step-by-step mathematical procedure, 2) the thought process indicated by the steps, and 3) the final answer.

Laboratory and Field Work

Your laboratory grade will be based on the quality of your field book, on turned in assignments, and on the instructor's subjective observation of your activity in the field exercises. **The field notes must be recorded in the field book at the time the information is obtained in the field.** Since it is not often practical for every member of a team to record all data simultaneously, one person may serve as "recorder" whose notes will be marked "original". You must get your notes up to date periodically during the field exercise and finalize them at the end of the lab period. All field books and computations will then be turned in at the end of the laboratory unless instructed otherwise. **IMPORTANT: You must be present at the field exercise to receive full credit for the laboratory. Unless you have a verified excused absence, failure to attend a laboratory will result in a 0 on that lab. Additionally, team member responsibilities must be rotated so that each person gains experience in all aspects of the fieldwork (i.e. one person is not always the recorder).** (Please arrange a modified lab date with the instructor as soon as you know you will have or have had an excused absence).

Note: Assignments may be handed to me before the start of class or placed in my mailbox in the C. E. Barnhart Bldg front office. The receptionist can direct you to it.

Grading Criteria

Exams:	40% (2 exams- midterm and final)
Field Book and Lab Assignments:	40%
Homework:	20%

Grading Policy

A	90-100%
B	80-89%
C	70-79%
D	60-69%
E	<60%

Computed grades falling between whole numbers (such as 89.5%) will be rounded to the nearest whole number (i.e., 89.5% or higher will be rounded to 90%, 89.4% and lower will be rounded to 89%).

Mid-term Grade (for 100-400 level courses, and for undergraduates in 500 level courses)

Mid-term grades will be posted in myUK by the deadline established in the Academic Calendar (<http://www.uky.edu/registrar/content/academic-calendar>)

Final Exam Information:

The final exam is scheduled for December 18, 2015 at 8:00 am in CEBA Room 154.

Attendance Policy.

Attendance at in both Lecture and Laboratory is **MANDATORY!** One cannot learn to survey without field practice and it is not fair to other members of your surveying team if you are not there to participate. The only exceptions that will be made are for documented University Excused Absences as described below.

Excused Absences:

Students need to notify the professor of absences prior to class when possible. *Senate Rules 5.2.4.2* defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit "reasonable cause for nonattendance" by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Two weeks prior to the absence is reasonable, but should not be given any later. Information regarding major religious holidays may be obtained through the Ombud (859-257-3737, http://www.uky.edu/Ombud/ForStudents_ExcusedAbsences.php).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused) per University policy.

Per *Senate Rule 5.2.4.2*, students missing any graded work due to an excused absence are responsible: for informing the Instructor of Record about their excused absence within one week following the period of the excused absence (except where prior notification is required); and for making up the missed work. The professor must give the student an opportunity to make up the work and/or the exams missed due to an excused absence, and shall do so, if feasible, during the semester in which the absence occurred.

Verification of Absences

Students may be asked to verify their absences in order for them to be considered excused.

Senate Rule 5.2.4.2 states that faculty have the right to request “appropriate verification” when students claim an excused absence because of illness or death in the family. Appropriate notification of absences due to university-related trips is required prior to the absence.

Consequences of Unexcused Class/Laboratory/Exam Absences

Unexcused absence from the lecture will result in a 25% reduction in grade in the corresponding laboratory. Unexcused absence from the laboratory will result in a 0 grade for the lab. Unexcused absence from an exam will result in a 0 grade for the exam.

Policy for making up Assignments, Laboratory Exercises, and Exams when Absence is Excused

Homework: Missed homework assignments due to an excused absence are due one week after the student’s return to class.

Laboratory: It is the student’s responsibility to schedule an appropriate time with the instructor to make up any missed laboratory exercises as soon as the student returns to class. A lab shall be made up before the next scheduled lab period after the student’s return to class.

Exam: It is the student’s responsibility to schedule an appropriate time with the instructor to make up a missed exam. The exam shall be made up within 1 week of the student’s return to class.

Academic Integrity:

Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of *Student Rights and Responsibilities* (available online at <http://www.uy.edu/StudentAffairs/Code/part2.html>) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else’s work, whether it be a published article, chapter of a book, a paper

from a friend or some file, or something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a student's assignment involves research in outside sources of information, the student must carefully acknowledge exactly what, where and how he/she employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain (Section 6.3.1).

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Accommodations due to disability:

If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (DRC). The DRC coordinates campus disability services available to students with disabilities. It is located on the corner of Rose Street and Huguelet Drive in the Multidisciplinary Science Building, Suite 407. You can reach them via phone at (859) 257-2754 and via email at drc@uky.edu. Their web address is <http://www.uky.edu/StudentAffairs/DisabilityResourceCenter/>.

Cell Phones

Cell phones are to remain off and stowed for the entire lecture/laboratory session.

Course Topic Outline
TSM 203: Basic Principles of Surveying
2015 Fall Semester

- 08/27/15: Course Introduction, Overview, and Review of Mathematics
Week 1: Lab: Math Problems Review
- 09/03/15: Field Data Collection Protocols and Distance Measurement
Week 2: Lab: Pacing, Taping, and Indirect Measurement
- 09/10/15: The Engineer's Level and Rod Reading
Week 3: Lab: Use and Precision of the Engineer's Level
- 09/17/15: Differential Leveling
Week 4: Lab: Setting Temporary Benchmarks utilizing Differential Leveling
- 09/24/15: Profile and Cross-Section Leveling
Week 5: Lab: Surveying Profiles and Cross-Sections for Plotting and Simple Earthwork Computations
- 10/01/15: Angles and Directions; Introduction to the Total Station
Week 6: Lab: Becoming Familiar with the Total Station, its Parts, and Set-up.
- 10/08/15: Balancing Angles and Closing the Horizon
Week 7: Lab: Measuring Horizontal Angles and Closing the Horizon with the Total Station
- 10/15/15: Traverse Adjustment
Week 8: Lab: Midterm Exam
- 10/22/15: Methods of Computing Area
Week 9: Lab: Transit-Tape Survey using the Total Station
- 10/29/15: Triangulation, Trilateration, and Resection
Week 10: Lab: Determining the Area of a Quadrilateral by the Radiation and Coordinate Methods
- 11/05/15: Topographic Surveys
Week 11: Lab: Topographic Survey with a Total Station
- 11/12/15: Construction Surveys
Week 12: Lab: Layout of a Building
- 11/19/15: Volumes; Slopes and Slope Staking
Week 13: Lab: Slopes and Slope Staking
- 12/03/15: Horizontal and Vertical Curves
Week 14: Lab: Horizontal Curve Layout
- 12/10/15: GPS (Global Positioning System) and RTK (Real-Time Kinematic) GPS
Week 15: Lab: Establishing Control at a Site using RTK and Topographic Survey using RTK
- 12/18/15: Final Exam