

## **ABE 205 – Computations for Engineering Systems**

Fall 2016

### **Instructor:**

Dr. Sara K. McMillan, P.E.

ABE 208B

[mcmill@purdue.edu](mailto:mcmill@purdue.edu)

Office hours: T/Th 3:30PM-5:00PM and by appointment

### **Teaching Assistant**

Shahriar Karim

ABE 301

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Office hours: MW 10:30AM -12:00PM and by appointment

### **Class Hours**

Lecture: Monday & Wednesday, 12:30-1:20PM, Lyles-Porter Hall 1160

Lab: Monday, 1:30-3:20PM, Biochemistry 105

### **Course Learning Objectives**

The objective of the course is to provide students with the tools and skills to quantitatively describe variability, differences and relationships in data from real-world applications.

Students successfully completing this course should be able to:

1. Design experiments to collect high-quality data
2. Display data graphically to draw inferences
3. Quantify variability in datasets
4. Characterize relationships between predictor and response variables
5. Test for differences between samples and populations

### **Textbook:**

“Introduction to the Practice of Statistics” 8<sup>th</sup> Edition

Authors: Moore, D., G. McCabe, and B. Craig

Publisher: W. H. Freeman and Company, Macmillan Publishing

ISBN: 978-1-4641-5893-3

*Note: I will be using the 8<sup>th</sup> edition of this text but if you purchase the 7<sup>th</sup> edition, that is fine.*

*There is also an e-book version of the text from <http://www.macmillanlearning.com> and multiple PDF versions of the text from Amazon and other sellers.*

### **Instructors' Commitment**

It is our goal to facilitate your learning. You can expect your instructors to be courteous, respectful and prepared for lecture and other class activities; answer questions clearly; be available during office hours or notify you beforehand if unable to keep them; provide a suitable guest lecturer when traveling for the University; and grade uniformly and consistently. I encourage you to contact us in person or via email for help of any kind during the semester.

### **Technology**

We will use Blackboard for this class to access additional video/reading assignments, homework, lecture notes, course announcements, grades, etc. You are expected to visit Blackboard on a daily basis to ensure that you are aware of all deadlines and materials. We will also use Hotseat and other technology during lecture and expect that you bring a mobile device (e.g., laptop, iPad) or i-Clicker to class.

We will also be using JMP, a statistical software that is free for students to install on their own personal computers and available on ECN machines in ABE. You will need to bring a laptop to lab period on Monday.

### **Grading**

Grades will be earned by a weighted average:

- Final Exam (30%)
- Mid-term exam (20%)
- Homework (35%)
- Quizzes (15%)

Course grades will be determined as follows:

Score	≥ 97	92- 96.9	88- 91.9	82- 87.9	77- 81.9	72- 76.9	67- 71.9	62- 66.9	60- 61.9	< 60
Grade	A+	A	A- or B+	B	B- or C+	C	C- or D+	D	D-	F

If you fall into one of the “gray areas” (A- or B+, B- or C+, C- or D+) your grade will be based on whether your performance has improved or gotten worse and your participation in making the classroom a positive learning environment for everyone.

*If you believe that an error was made in grading either homework or exam, you should write a short justification and attach it to the original assignment/exam. I will review your concern and respond to you directly. The “statute of limitations” for submitting such a request is one week after the work is returned.*

### **Out of Class Assignments & Attendance**

I will periodically assign videos and reading assignments throughout the semester. These will be announced in class and posted to Blackboard. You are expected to watch/read the posted materials BEFORE the class period.

You are expected to attend all class periods and activities. However, at times, anticipated or unanticipated absences can occur. It is your responsibility to inform me in a timely manner, preferably prior to the absence. For excused absences, you will be given an opportunity to make up the work. You will be held responsible for all information presented regardless of attendance.

### **Homework**

You need to form working relationships with each other and learn from each other while here at Purdue. I encourage you to work in teams when solving homework problems, but you are required to turn in your own work, unless it is a group assignment. Regardless of the format of the individual assignment, you are responsible for knowing the material individually for each exam. ***Late homework will NOT be accepted unless prior arrangements are made.*** Homework solutions will not be posted. It is your responsibility to make sure you find out how to solve the problems before, or after, they are due.

### **Exams**

There will be short, unannounced quizzes throughout the semester, 1 midterm test, and a comprehensive final exam. ***If you miss a quiz, test, or final exam without either a certified medical excuse or prior instructor approval, you will receive a zero on that quiz, test, or final exam.*** Tests missed with approval will be dealt with individually.

### **Field trips**

We will be going on 2-3 field trips throughout the semester during the class/lab period on Mondays. We will visit the Purdue University Agronomy Center for Research and Education (ACRE) in September, and Oerlikon Fairfield (custom gear manufacturing) and/or Tate & Lyle (corn processing) in October or November. Transportation to and from field trips will be provided. Each trip will be unique but at a minimum, all will require preparations ahead of time and a report of your observations after the trip.

### **Academic Integrity**

I expect honesty and integrity from my students. Anything that appears with your name on it must reflect your own work. My definition of "working together" includes teaching each other how to solve a problem and checking each other's work for mistakes. However, all work you submit under your name should be the result of your own efforts. If you copy someone else's work or "split" the work and copy portions of it, you are being dishonest. The penalty for dishonesty is automatic failure and a report to the Dean of Students. The University's student guide for academic integrity can be found at [www.purdue.edu/odos/aboutodos/academicintegrity.php](http://www.purdue.edu/odos/aboutodos/academicintegrity.php). The policy is stated here:

*Purdue prohibits "dishonesty in connection with any University activity. Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty." [Part 5, Section III-B-2-a, University Regulations] Furthermore, the University Senate has stipulated that "the commitment of acts of cheating, lying, and deceit in any of their diverse forms (such as the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is*

*dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest." [University Senate Document 72-18, December 15, 1972].*

### **Use of Copyrighted Materials**

Students are expected to take their notes for their own use during the class. Students are not allowed to make course notes or other materials developed as part of this course available for others to purchase (e.g., via commercial note-taking service). The University's policy is stated here for your reference:

*Among the materials that may be protected by copyright law are the lectures, notes, and other material presented in class or as part of the course. Always assume the materials presented by an instructor are protected by copyright unless the instructor has stated otherwise. Students enrolled in, and authorized visitors to, Purdue University courses are permitted to take notes, which they may use for individual/group study or for other non-commercial purposes reasonably arising from enrollment in the course or the University generally.*

*Notes taken in class are, however, generally considered to be "derivative works" of the instructor's presentations and materials, and they are thus subject to the instructor's copyright in such presentations and materials. No individual is permitted to sell or otherwise barter notes, either to other students or to any commercial concern, for a course without the express written permission of the course instructor. To obtain permission to sell or barter notes, the individual wishing to sell or barter the notes must be registered in the course or must be an approved visitor to the class. Course instructors may choose to grant or not grant such permission at their own discretion, and may require a review of the notes prior to their being sold or bartered. If they do grant such permission, they may revoke it at any time, if they so choose.*

### **Safe Learning Environment**

Purdue University is committed to providing a safe and secure campus environment for members of the university community. Purdue strives to create an educational environment for students and a work environment for employees that promote educational and career goals. Violent Behavior impedes such goals. Therefore, Violent Behavior is prohibited in or on any University Facility or while participating in any university activity. See the following website for more information: [www.purdue.edu/policies/pages/facilities\\_lands/i\\_2\\_3.shtml](http://www.purdue.edu/policies/pages/facilities_lands/i_2_3.shtml)

### **Students with Disabilities**

If you have a disability that requires special academic accommodation, please make an appointment to speak with me within the first week of the course in order to discuss any adjustments. It is important that we talk about this as soon as possible. It is the student's responsibility to notify the Disability Resource Center (<http://www.purdue.edu/drc>) of an impairment/condition that may require accommodations and/or classroom modifications.

### **Emergencies**

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Please see the Blackboard course

page or contact one of the instructors to receive more information if such an emergency occurs.

### **Safety considerations**

If the fire alarm is activated, the building must be evacuated immediately. Proceed to the nearest stairway, then to the nearest building exit doors and finally to the Emergency Assembly Area which is located on the Agricultural Mall directly north of the Food Science Building. In the event of a tornado, all ABE occupants should proceed to room 106. This procedure may also be necessary if other emergencies make it unsafe to be outside, such as release of a harmful or irritating gas outside the building.

### **Nondiscrimination**

Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life. Purdue University prohibits discrimination against any member of the University community on the basis of race, religion, color, sex, age, national origin or ancestry, genetic information, marital status, parental status, sexual orientation, gender identity and expression, disability, or status as a veteran. The University will conduct its programs, services and activities consistent with applicable federal, state and local laws, regulations and orders and in conformance with the procedures and limitations as set forth in [Executive Memorandum No. D-1](#), which provides specific contractual rights and remedies. Any student who believes they have been discriminated against may visit [www.purdue.edu/report-hate](http://www.purdue.edu/report-hate) to submit a complaint to the Office of Institutional Equity. Information may be reported anonymously.