Instructor
Dr. Gayla R. Olbricht
Email: olbrichtg@mst.edu
Office: 215 Rolla Building
Office Phone: 341-4913

Office Hours
9:00-10:30am Tues/Thurs or by appointment
I encourage you to visit me during my office hours if you have any questions about the course. If you cannot attend during the allotted times, please send me an email to schedule an appointment.

Class Times
Lectures: 11:00am-12:15 pm, Tues/Thurs, Campus Support G5D
I plan to begin and end each class promptly – please be on time. Cell-phones and other electronic devices should be turned off or placed on vibrate while in class. Brief on-topic questions during class are welcomed and encouraged.

Attendance Policy
Excellent attendance is expected and important for keeping up with the course material. If you miss a lecture, it is your responsibility to catch up on the material that you missed. If a student has excessive unexcused absence (more than 3 classes) and/or is not performing well in the course, I may send an Academic Alert. With 6 or more absences, I reserve the option to drop the student from the course.

Canvas
Important information about the course will be available on the Canvas site for this course (http://canvas.mst.edu) Please check the course Canvas site regularly as it will be updated continuously throughout the semester!

Textbook
Required: Introduction to Probability and Mathematical Statistics, 2nd Edition by Bain and Engelhardt

Course Description
Introduction to the theory of probability and its applications, sample spaces, random variables, binomial, Poisson, normal distributions, derived distributions, and moment generating functions. Multivariate distributions, techniques for obtaining distributions of functions of random variables, and methods of obtaining distributions of sums of independent random variables will also be discussed. Other topics include sampling distribution, central limit theorem, and asymptotic properties (time permitting).

Prerequisites
Math 2222 (Calculus with Analytic Geometry III)

Course Objectives
This course will help you understand the foundation of probability and statistics and how to use probability theory to draw conclusions about a population based on statistics obtained from a random sample. This is a theoretical course and a good grasp of calculus (especially Calc 3) is required to ensure understanding. By the end of the course you should have gained confidence in applying this knowledge in future coursework and problem solving.

NOTE: This is a course about the mathematical theory of probability and statistics, and it is NOT meant to be an applied data analysis course. If you are interested in the latter, see me for some suggestions.
Course Topics
We will cover chapters 1-6 of the required text and will cover chapter 7 if time permits. Please see the table of contents in the text for the specific topics.

Grading
Your final grade will depend on the following components with these proportions:

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<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>30%</td>
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<tr>
<td>Test 1</td>
<td>20%</td>
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<tr>
<td>Test 2</td>
<td>20%</td>
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<tr>
<td>Final</td>
<td>30%</td>
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The percentage grades needed to achieve an A, B, C, or D will follow approximately the following scale: 90 – 100 = A, 80 – 89 = B, 70 – 79 = C, 60 – 69 = D, 0 – 59 = F. If you registered S/N a grade of C or higher is needed to earn an S. When assigning the final grade, I will consider class involvement and attendance in borderline cases. Class involvement means being involved in the learning process, for example, by asking questions when things are not clear or communicating with me in or outside of class.

Homework
There will be problem sets assigned almost every week. Homework will typically be assigned on Thursday and due the following Thursday, at the beginning of class. Please check the Canvas site for homework assignments and due dates. Grades and solutions to all assigned problems will be posted on the Canvas site after the due date. For fairness and clarity we have the following rules about homework:

1. **Late homework will not be accepted under any circumstances and will receive a score of zero.** To allow for situations beyond your control (e.g., illness, family emergencies), your lowest homework score will be dropped. If you know in advance that you will not be able to turn in the homework on the due date, please make arrangements with the instructor prior to the homework due date for submitting your assignment.

2. Some collaboration on homework is acceptable. However, the work you hand in must be your own. Direct copying of someone else's work is not acceptable, nor is misrepresenting the work of others as your own. If you do work with others, you must list your collaborators on the paper you hand in.

3. Homework solutions submitted for grading should be legible and neat. You must show your work. Both the correctness of the answer and the work you show are considered in grading. A correct numerical answer with no explanation will receive little credit.

4. For each assignment, all or only a subset of problems may be graded, but the problems to be graded will NOT be announced in advance. The solutions to all problems will be posted after the assignment is due, so that you can check answers for problems that were not graded.

5. After receiving back your graded homework, check to make sure the grade recorded on Canvas is accurate. Let your instructor know within one week of receiving your assignment back if there is a discrepancy.

Exams
There will be two in class exams and a final exam. The in class exams are tentatively scheduled for the class periods on **Thursday, February 16th** and **Thursday, March 23rd**. The final exam will be tentatively be held during the university’s finals week on **Tuesday, May 9th from 10am-12pm in Campus Support G5D**. Any changes to the exam dates will be announced at least one week in advance. All work on exams must be entirely your own and academic dishonesty will not be tolerated. It is just as dishonest to give help as to receive it.
In the event you must miss an exam for a university excused reason (e.g., participating in conference or sporting event), you must notify me by email at least one week prior to the exam and provide appropriate documentation in order to take a makeup exam that will be given prior to the in class exam. If you are missing the exam due to an emergency, you must email me with the details of your situation within 24 hours of the exam and follow up with appropriate documentation to make an alternative arrangement for missing the exam. Please note that airline schedules, planned family trips, or work do not constitute valid reasons to receive a makeup exam.

**Computing**

All students should have a portable scientific calculator. Bring this to class. You will also need the calculator for the Exams.

**Distance Students**

Lectures will be recorded for distance students only and available in Media Space through the Video Communications Center (VCC: [https://vcc.mst.edu/](https://vcc.mst.edu/)). There will also be a link in Canvas for you to access this space. You will need to provide your user information to access the recorded lectures. You may join in the lecture live or watch the recorded lecture.

Details about turning in homework assignments will be given prior to the first due date. Assignments will either be emailed to the instructor or uploaded in Canvas by 11:00am Central time on the due date. Word or LaTeX/PDF documents are acceptable, as are scanned solutions of handwritten work (pdf format preferable). Please keep in mind that assignments will require a lot of calculations and mathematical derivations and these need to be included in the solution to receive full credit.

Details about exams will be given at least one week prior to the first exam date. Exams will be proctored either through Examity online proctoring service or at an authorized testing center. There may be a small fee for this service. The instructor will work with each student individually to find an acceptable solution for taking exams.

**Disability Support Services**

It is the policy and practice of Missouri University of Science and Technology to promote inclusive learning environments. If you have a documented disability you may be eligible for reasonable accommodations in compliance with university policy, the Americans with Disabilities Act of 1990, the Americans with Disabilities Amendment Act (ADAAA) of 2008, and Section 504 of the Rehabilitation Act of 1973. Please note, students are not encouraged to negotiate accommodations directly with professors.

To request accommodations or assistance, please self-identify with Disability Support Services (DSS), 203 Norwood Hall. For more information or to register for services, contact DSS at (573) 341-6655 or by email at dss@mst.edu. Please note that I must receive a letter specifying the accommodation(s) you will need before I can arrange the accommodation(s).

**Academic Integrity**

Academic dishonesty is not tolerated and will be dealt with as specified in the Missouri S & T Student Academic Regulations policy. This policy is located online at the following address: [http://registrar.mst.edu/academicregs/index.html](http://registrar.mst.edu/academicregs/index.html). Academic dishonesty includes, but is not limited to cheating, plagiarism, or sabotage.

**Emergency Egress**

In case of an emergency, please familiarize yourself with the egress route for evacuation of our classroom and lab. Egress maps are found at: [http://designconstruction.mst.edu/floorplan/](http://designconstruction.mst.edu/floorplan/).
**Title IX Information**
Missouri University of Science and Technology is committed to the safety and well-being of all members of its community. US Federal Law Title IX states that no member of the university community shall, on the basis of sex, be excluded from participation in, or be denied benefits of, or be subjected to discrimination under any education program or activity. Furthermore, in accordance with Title IX guidelines from the US Office of Civil Rights, Missouri S&T requires that all faculty and staff members report, to the Missouri S&T Title IX Coordinator, any notice of sexual harassment, abuse, and/or violence (including personal relational abuse, relational/domestic violence, and stalking) disclosed through communication including but not limited to direct conversation, email, social media, classroom papers and homework exercises.

Missouri S&T’s Title IX Coordinator is Vice Chancellor Shenethia Manuel. Contact her directly (manuels@mst.edu; (573) 341-4920; 113 Centennial Hall) to report Title IX violations. To learn more about Title IX resources and reporting options (confidential and non-confidential) available to Missouri S&T students, staff, and faculty, please visit [http://titleix.mst.edu](http://titleix.mst.edu).

**Changes to Syllabus**
I reserve the right to make changes to this syllabus. Any such changes will be announced in class.

Have a great semester!