MATH 156 General Statistics II

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General Statistics: Descriptive statistics, basic probability, normal distribution, confidence intervals, regression, correlation, hypothesis tests, and analysis of categorical data. (Xavier Catalog)

Course Outcomes

The purpose of this course is to introduce to the student the art & science of thinking statistically—turning data into information.

Statistics may be divided into two branches: descriptive statistics and inferential statistics. In the former, we will learn the appropriate methods of presenting and summarizing data in tables, numerically and graphically. In the latter, we will learn how data, generated by a random sample drawn from a population, permits us to make quite precise inferences about that population.

Relation to the Core Curriculum

MATH 156 satisfies 3 hours of the core curriculum distribution requirement in Mathematics. The student learning outcomes associated with this course are

- Students will organize and express their ideas in writing.
- Students will analyze and interpret texts, quantitative and qualitative data.
- Students will evaluate the use of mathematics in society in an informed manner.
• Students will utilize mathematical and logical reasoning and the language of mathematics with its own symbols, syntax and semantics.

Grading

The summary of work required and its value is shown below.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Value</th>
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<tbody>
<tr>
<td>Participation</td>
<td>5%</td>
</tr>
<tr>
<td>Webwork</td>
<td>5%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>15%</td>
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<tr>
<td>Exams</td>
<td>40%</td>
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<tr>
<td>Homework</td>
<td>15%</td>
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<tr>
<td>Final Exam</td>
<td>20%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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Letter grades will be assigned according to the following scale:

<table>
<thead>
<tr>
<th>Grading Scale</th>
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<tbody>
<tr>
<td>A</td>
<td>93 – 100</td>
<td>C</td>
</tr>
<tr>
<td>A−</td>
<td>90 – 92</td>
<td>C−</td>
</tr>
<tr>
<td>B+</td>
<td>87 – 89</td>
<td>D+</td>
</tr>
<tr>
<td>B</td>
<td>83 – 86</td>
<td>D</td>
</tr>
<tr>
<td>B−</td>
<td>80 – 82</td>
<td>F</td>
</tr>
<tr>
<td>C+</td>
<td>77 – 79</td>
<td></td>
</tr>
</tbody>
</table>

Course Policies

I will make use of Canvas for communication. Check it regularly. Copies of assignments, aids for the calculator, grades and solutions to homeworks and quizzes will be posted there.

Technology

Each student must have his or her own graphing calculator such as the TI-83/83 Plus or TI-84. Calculators are permitted on all exams. But be aware that this is not a course in calculator usage. You are expected to have basic calculator literacy. This is the only electronic device you may use on quizzes and exams.

Classroom Etiquette

Come to class on time and be prepared to remain in class for the entire period. Arriving late, getting up in the middle of class, or otherwise disrupting it is disrespectful of your classmates. Please turn off cell phones and other electronic equipment during class.
Anyone found using a phone or other messaging devices during class for purposes unrelated to the course will be asked to leave the room for the remainder of that class. The use of any electronic devices (other than your calculator) during an exam is strictly prohibited.

Attendance and Absences
Attendance is expected. It is your responsibility to obtain all missed notes or materials. Except for the most dire circumstances, assignments, quizzes and tests missed due to absences cannot be made up nor will late work be accepted.

Academic Honesty
The pursuit of truth demands high standards of personal honesty. Academic and professional life requires a trust based upon integrity of the written and spoken word. Accordingly, violations of certain standards of ethical behavior will not be tolerated at Xavier University. These include theft, cheating, plagiarism, unauthorized assistance in assignments and tests, unauthorized copying of computer software, the falsification of results and material submitted in reports or admission and registration documents, and the falsification of any academic record including letters of recommendation.

All work submitted for academic evaluation must be the student’s own. Certainly, the activities of other scholars will influence all students. However, the direct and unattributed use of another’s efforts is prohibited as is the use of any work untruthfully submitted as one’s own.

Penalties for violations of this policy may include one or more of the following: a zero for that assignment or test, an “F” in the course, and expulsion from the University. The dean of the college in which the student is enrolled is to be informed in writing of all such incidents, though the teacher has full authority to assign the grade for the assignment, test, or course. If disputes of interpretation arise, the student, faculty member, and chair should attempt to resolve the difficulty. If this is unsatisfactory, the dean will rule in the matter. As a final appeal, the academic vice president will call a committee of tenured faculty for the purpose of making a final determination. (University Catalog)

Assessment
Your grade for the course is based upon your classwork, homework, quizzes and tests.

Classroom participation and homework
Read the text before class and be prepared to discuss it. Participation in group work during class is expected. Some of this work may be graded.
Assignments will be announced and also made available in Canvas. They are due on my desk at the beginning of class on the date indicated. Assignments must be neat, legible, preferably written in pencil, and identifiable. You are expected to take pride in your work and that pride should be reflected in what is submitted.

Each homework will be valued at 20 points. Up to 16 points will be awarded for completeness, legibility, care etc. in your work but deductions will be made for sloppy work. The remaining 4 points will be assigned to one or more randomly selected exercises which will be closely graded.

The lowest homework grade will be dropped. Note that late or missing assignments are valued at 0.

WebWork exercises keyed to the chapters are provided. Our course is located at http://webwork.cs.xu.edu/webwork2. These are intended for practice and you have unlimited attempts to solve them. If you have a difficulty with WebWork contact me.

Quizzes

On selected Thursdays (see calendar), a short quiz will be administered on material covered previously. Each should take no more than 10 minutes to complete. Missed quizzes cannot be made up. Each is valued at 10 points. The lowest quiz grade will be dropped.

Exams

There will be two exams in addition to the final exam. The first test is planned for October 2, (Chapters 2–9) and the second for November 4 (Chapters 11–17). The final exam is scheduled for Tuesday, December 16. It is cumulative.

During exams, absolutely no collaboration with other persons is permitted.

How to be successful in the course

Here are some recommendations:

- Expect that we will cover approximately one chapter every class meeting. The pace is quick and it is imperative that you keep up with the work.
- Read the book before coming to class. I will assume you have done so.
- Understanding is achieved through practice. Try to solve as many of the odd problems in that section before class as you can. The answers are in the back of the text.
- After class, work through the remaining odd problems.
- For every hour spent in class, you should spend two hours in study. If your course load is 15 credit hours, then at least 45 hours a week should be devoted to academics.
• Find study partners, form study groups outside of class and learn from one another as opportunities provide. However, turning in the work of another or providing your work to someone else will be considered academically dishonest.

• Understand the vocabulary. Words in statistics can have specialized meaning.

• Don’t try to memorize everything. It is easy to feel overwhelmed by the number of symbols and amount of material. But you will come to understand that the essential elements are few in number.

• Multitasking is not a studying strategy.

• Above all, don’t panic.

Assistance

Let me know if you are experiencing any difficulties in this class. It is better to deal with problems early rather than when it is too late.

The Mathematics Tutoring Lab located in Conaton Learning Commons Room 419 is open from 10:00 am to 8:00 pm Monday through Thursday, 10:00 am to 2:00 pm Friday and 2:00 to 8:00 pm Sundays. It is available for students enrolled in MATH 105 – MATH 171.

Don’t run to the Tutoring Lab without trying problems. It is there to help you, but doing homework is your responsibility.