**COURSE INFORMATION FOR MTH 370, WINTER 2010**

MEETING INFORMATION: 4:00-5:15 pm TR

Room, 322 Murchie Science Building

TEXTBOOK: Statistics for the Sciences, by Martin Buntinas and Gerald Funk

PROFESSOR: Dr. Kristina Hansen

OFFICE: 402E Murchie Science Building

OFFICE HOURS: 1:00-2:00 pm MTWR, and by drop-in or appointment

PHONE: (810) 762-3304

E-MAIL: khansen@umflint.edu

BLACKBOARD COMPANION: bb.umflint.edu

FINAL EXAM: Tuesday, April 27, 4:15-6:45 pm

Grades will be based on the following point scale:

Cooperative group work (lowest 3 dropped) 100

Exams 300

Comprehensive final exam 200

Less one exam or half of final (whichever is lowest) -100

Total 500

**Goals** Students will learn basic concepts of probability and statistics, be able to apply them to varied real world problems, and develop a sense of possible uses and misuses of statistics.

**Objectives** Students will demonstrate ability to:

Describe data sets using various methods including frequency tables, histograms, stem and leaf plots, box plots and ogives.

Compute sample mean, median, mode, variance, standard deviation, and correlation for various samples.

Compute event probabilities using rules of probability and concepts from combinatorics.

Compute conditional probabilities and apply Bayes' formula.

Determine independence/dependence of events.

Apply knowledge of various discrete probability distributions, including uniform, Bernoulli, binomial and hypergeometric, to compute probabilities, mean and variance.

Apply knowledge of various continuous probability distributions, including normal, exponential and Poisson, to compute probabilities, mean and variance.

Apply the central limit theorem to compute approximate probabilities.

Compute marginal distributions, expectation, covariance and correlation of bivariate distributions

Compute point and interval estimates for unknown population parameters.

Conduct hypothesis testing.

**Preparing for class each day:**

Reading You should come to class having read the section to be discussed. Remember, mathematics is not a spectator sport, and math books don’t read like novels - at times, you may have to spend five minutes or more on a single paragraph. If you read with a pencil in hand, working examples (without looking, if possible), you'll get much more out of them.

Homework Doing homework regularly is *essential* to learning mathematics. No matter how easy someone else makes it look, mathematics is not internalized until you do it yourself. Homework will be assigned regularly. Plan to spend two to three hours on homework for each class session. (*Really!*) Although homework will not be collected, you are welcome to hand it in for feedback.

**In the classroom:**

Lectures Try to take good notes. If you miss something, leave a space and see if you can fill in the gap later, or see me if you can't. Recopying your notes may prove useful.

Cooperative learning The class will meet regularly in cooperative learning groups. The groups will give you the opportunity to meet other students in the class and to deepen your knowledge of the subject through discussion. Because of the cooperative nature of the activity, *group work cannot be made up*.

Classroom etiquette The only real rule is to avoid distracting others. This translates to: arriving on time, *turning your cell phone off or on vibrate during class*, not leaving class early unless absolutely necessary (and, preferably, informing the instructor beforehand), not eating loudly, limiting conversation to the subject under discussion, etc. (You know what you find distracting – don’t do that.)

**Examinations:**

Make-ups Make-ups will be given only with prior permission, and except in cases of real emergency, permission must be granted *before the exam is missed*. You can contact me at the office phone above (if I am unavailable, you can leave a message on my voice mail) or by email. The message must *include the reason you cannot attend and a phone number or email address where you can be reached* so that we can arrange a makeup exam.

Corrections You will be given an opportunity to make corrections to your quizzes and exams for additional credit. Generally, you will be able to earn up to 10 additional points (10%) on an exam. (Corrected work will be worth half its value on the original exam.) Exams will be graded on a curve after corrections have been made.

**Getting extra help:**

In person/online I am *extremely* happy to help you with your questions. (Don’t feel afraid to ask me – it’s my job, and I love my job!) You can see me in my office during my office hours listed above (students with appointments have first priority), or just stop by and ask if I'm busy (I’ll be honest). I also can be reached by email business days (I don't always check email over the weekend). Better yet, post a message to Blackboard (see below) so everyone gets an answer!

On-line solutions Solutions to the problems you work on cooperatively in groups will be posted on Blackboard at least weekly, and always in time to prepare for a quiz or examination.

Blackboard discussion items If you would like to contact other members of the class, please go to the Blackboard course companion and post a message – it is quite likely that someone else in the class may be able to help you out. I will also receive copies of these messages and will try to respond to them if no one else does. I can also be sent a personal message at my email address or via Blackboard.

**Some additional information:**

Calculators We will make use of graphing calculators in the classroom, and you may use them for homework and examinations. The TI-82 and -83 are supported by the Mathematics Department, which means that we can provide you instruction on how to use them and programs for appropriate parts of the course. If you have another graphing calculator you want to use, as long as you know how to use it and can write your own programs for it, it is allowed if it meets the following restriction: No calculator with computer algebra capability (this includes the TI-89 and -92 and others) will be allowed during testing. If you have a question about whether your calculator is appropriate, consult the instructor.

Grades You can access copies of your grades via the Gradebook in the Blackboard course companion. Grades will be updated at least once a week; please check in regularly to see that what is posted agrees with what you think is correct, and contact me if you think you have found an error. Cooperative work will be graded on a straight 90 A-, 80 B-, 70 C-, 60 D- scale; the rest of the grades will be “curved” using a curve no more rigorous than 87% A-, 74% B-, 62% C-, 50% D-.

Final examinations You may pick up your final examination no later that 72 hours after the exam. Mathematics Department policy is that final examinations must be held for at least one month following the final examination.

Accessibility issues Students with special needs should contact the Accessibility Office (264 UCEN) to make arrangements to have those needs accommodated.

*NOTE: This document can be accessed online at any time, via the Blackboard course companion, under Course Documents.*

**Academic Integrity:** *The following is excerpted from the Student Rights and Responsibilities section of the UM-Flint Catalog. Every student should be familiar with these policies. Violations, depending on their severity, can result in failure for coursework, of an entire course, and/or suspension or expulsion from the University with notation on a student’s permanent record.*

**Academic Integrity**Intellectual integrity is the most fundamental value of an academic community. Students and faculty alike are expected to uphold the highest standards of honesty and integrity in their scholarship. No departure from the highest standards of intellectual integrity, whether by cheating, plagiarism, fabrication, falsification, or aiding and abetting dishonesty by another person, can be tolerated in a community of scholars. *Such transgressions may result in action ranging from reduced grade or failure of a course, to expulsion from the University or revocation of degree.*

It is the responsibility of all students and faculty to know the policies on academic integrity in the instructional units at the University of Michigan-Flint. Information about these policies and the appeals process is available from the appropriate administrative office of the instructional units: in the College of Arts and Sciences, the Office of the Dean of the College of Arts and Sciences; in the School of Education and Human Services, the Office of the Dean of the School of Education and Human Services; in the School of Management, the Office of the Dean of the School of Management; in the School of Health Professions and Studies, the Office of the Dean of the School of Health Professions and Studies and for graduate students, the Office of the Dean of Graduate Programs and Research.

Departments and programs within these instructional units may have specific policies and procedures which further delineate academic integrity. In such cases students are bound by the University policy on academic integrity as well as these department or program policies.

**Procedural Rights of the Accused Student.** A student who is charged with academic dishonesty by an instructor, administrator, or another student may be assured that he/she has the right to a fair hearing of the charges and the evidence, the right to question witnesses, to invite witnesses on his/her behalf, and to introduce whatever other evidence may be relevant to the charge.

**Code of Academic Conduct.** The University, like all communities, functions best when its members treat one another with honesty, fairness, respect, and trust. Therefore, an individual should realize that deception for the purpose of individual gain is an offense against the members of the community. Such dishonesty includes:

**Plagiarism:** taking credit for someone else’s work or ideas, submitting a piece of work (for example, an essay, research paper, assignment, laboratory report) which in part or in whole is not entirely the student’s own work without fully and accurately attributing those same portions to their correct source.

**Cheating:** using unauthorized notes, or study aids, or information from another student or student’s paper on an examination; altering a graded work after it has been returned, then submitting the work for regrading; allowing another person to do one’s work, then submitting the work under one’s own name.

**Fabrication:** fabricating data; selectively reporting or omitting conflicting data for deceptive purposes; presenting data in a piece of work when the data were not gathered in accordance with guidelines defining the appropriate methods of collecting or generating data; failing to include a substantially accurate account of the method by which the data were gathered or collected.

**Aiding and Abetting Dishonesty:** providing material or information to another person with the knowledge that these materials or information will be used in a manner that would violate this code of academic integrity.

**Falsification of Records and Official Documents:** altering documents affecting academic records; forging a signature of authorization or falsifying or omitting necessary information on an official academic document, election form, grade report, letter of permission, petition, or any document designed to meet or exempt a student from an established College or University academic regulation; falsification or unauthorized altering of information in any official academic computer file.

**Misrepresentation and Other Acts of Academic Dishonesty:** fraudulently obtaining and/or using academic materials that would give oneself an unfair advantage over other students or would deceive the person evaluating one’s academic performance.

**Attempts.** An attempt to commit an act prohibited by this code may be punished to the same extent as a completed violation.