Math 4030FA/FB Probability and Statistics (2017 Fall)

Instructor: Dr. Wendy Huang
Office: RB 2007, Tel/Fax: 343-8798
E-Mail: whuang1@lakeheadu.ca
Course Website: http://whuang.lakeheadu.ca/4030.htm

Lectures for 4030FA:
MW: 8:30 – 10:00 AM (UC 0050)

Lectures for 4030FB:
MW: 11:30 – 1:00 PM (AT 1003)

Office Hours: Wednesdays: 3:00 – 4:00 PM (RB 2007)

Email Communication: Any time. When sending emails regarding the course, include course number, your name, and keywords in the subject line. For example, "Subject: Math 4030, Jen Smith, formula for standard deviation". (Otherwise, your message will not be opened.)

Textbook (Suggested): R. Johnson, Miller & Freund's Probability and Statistics for Engineers, 9th Edition.

Software (optional):

- **Excel**
- **R:** R is a free software environment for statistical computing and graphics. To download R, go to https://www.r-project.org/.
- **MATLAB**
- **SPSS**

Performance Evaluation:

	Weight
Assignments	16%
Midterm	20%
Final Exam	64%

Lectures:

1. Students are expected to attend all lectures, prepared. Preparation includes review of the previous lectures and preview of the upcoming course materials according to the course schedule.
2. Students are fully responsible for any missed information including announcements due to the absence of lectures.
3. Private discussions and/or conversations are not permitted during lecture time. Cell phones are to be turned off during lecture time.

Assignments:

- There will be 9 assignments, of which 8 highest marks will be used toward the final grade of the course. The problem sets will be posted on course website.
- The assignments can be done by hand writing, computer typing, or mix of the both. Statistical analysis can be done by using handheld calculator and any statistical analysis software. A cover part (either a separate page or top part of the first page) is needed for every assignment, which includes your full name (same as the one on your student ID card), student ID number, the course number and session, and assignment number.
- To submit your assignments, drop them in the labeled assignment box at the 2nd floor hallway of Ryan Building before 4:00 PM on the due date (normally **Thursdays**). (Assignments will **NOT** be collected at the lectures.)

- Solutions of the assignments will be available online following the due dates. For this reason, no late assignments will be marked, and no request for assignment extension will be granted, under **ANY** circumstance.
- Students are expected to do their assignments **independently**. Plagiarism will be disciplined according to university regulations.

Midterm and Final Exams:

- The 80-min midterm exam is scheduled during the lecture hours on **Wednesday, Oct. 25**. The 3-hour final exam is scheduled at the end of the term.
- Both exams are close-book. Students are allowed to bring 1 page (letter size, both sides) of personal formula sheet (for formulas only) and a non-programmable calculator. Related tables, when needed, will be provided.

Tentative Schedule (Subject to Change):

Week	**Content**	**Assignments (Due Dates)**
Week 0 (Sept. 6)	Introduction; Basic concepts; Types of Data	
Week 1 (Sept. 11 & 13)	Descriptive statistics: Tables, and Charts	Assignment 1 (Due: Sept. 21, 4:00PM)
	Descriptive Measures	
Week 2 (Sept. 18 & 20)	Sample Space, Events, and Definition of Probability	Assignment 2 (Due: Sept. 28, 4:00PM)
	Properties of Probability, Conditional Probability and Bayes' Theorem	
Week 3 (Sept. 25 & 27)	Random Variables, Mean, Variance, and Chebyshev's Theorem	Assignment 3 (Due: Oct. 3, 4:00PM)
	Binomial and Hypergeometric Distributions	
Week 4 (Oct. 2 & 4)	More Discrete Probability Distributions	Assignment 4 (Due: Oct. 19, 4:00PM)
	Continuous Probability Densities, Normal Distribution	
Week 5 (Oct. 9 & 11)	**Thanksgiving Holiday**	
	More Continuous Distributions	Assignment 5 (Due: Nov. 2, 4:00PM)
Week 6 (Oct. 16 & 18)	Joint Distributions – discrete	
	Joint Distributions – continuous	
Week 7 (Oct. 23 & 25)	Normality Issues	
	Midterm (Oct. 25)	Assignment 6 (Due: Nov. 9, 4:00PM)
Week 8 (Oct. 30 & Nov. 1)	Sampling Distribution of Mean	
	Estimation of Population Mean	
Week 9 (Nov. 6 & 8)	Hypothesis Testing	Assignment 7 (Due: Nov. 16, 4:00PM)
	Comparing Two Means	
Week 10 (Nov. 13 & 15)	Inferences Concerning Variances	Assignment 8 (Due: Nov. 23, 4:00PM)
	Inferences Concerning Proportions	
Week 11 (Nov. 20 & 22)	C X R Tables, Goodness of Fit Test	Assignment 9 (Due: Dec. 6, 4:00PM)
	The Method of Least Squares	
Week 12 (Nov. 27 & 29)	Regression Analysis	
	Correlation	
Week 13 (Dec. 4)	ANOVA	