

# Math 4030FA/FB Probability and Statistics (2007 Fall)

Instructor: [Dr. Wendy Huang](#)

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Course Website: <http://qiant.lakeheadu.ca/~wzhuang/4030>

## Lectures for 4030FA:

MWF: 8:30 – 9:30 AM (UC 0050)

## Lectures for 4030FB:

MWF: 12:30 – 1:30 PM (UC 0050)

**Office Hours:** Wednesdays: 9:30 – 11:30 AM (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, John Smith, formula for standard deviation". (Otherwise, your message will not be opened.)

**Textbook:** Richard Johnson, Miller & Freund's Probability and Statistics for Engineers, 7<sup>th</sup> Edition.

**Performance Evaluation:** your final grades are calculated from your weekly assignments, midterm, and final exam marks. In order to pass the course, you need to get at least 40% on your final exam. In other words, the formula used to calculate your final grade for the course is

	Assignments	Midterm	Final Exam
Weights if your final exam is less than 40%	0%	0%	100%
Weights if your final exam is at least 40%	20%	30%	50%

## 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:

1. Weekly assignments are normally given in Monday's classes and due on the following Wednesday. The problem sets will also be posted on the course website.
2. To submit your assignments, drop them in the labeled assignment box at the 2<sup>nd</sup> floor hallway of Ryan Building before 4:00 PM on the due date. (Assignments will **NOT** be collected at the lectures.)
3. Solutions of the assignments will be available online following the due dates.
4. Late assignments will **NOT** be marked under **ANY** circumstance (i.e. requests of any form regarding the extension of assignment due dates will not get responded.). Considering that circumstances beyond control may happen, the lowest mark of the

assignments will be automatically dropped in calculating the average assignment mark of the course.

5. Students are expected to do their assignments **independently**. Plagiarism will be disciplined according to the university regulations.

**Midterm and Final Exams:** The one-hour midterm and the three-hour final exam are close-book. Students are allowed to bring up to 3 pages (letter size, both sides) of personal study notes and a non-programmable calculator. Related tables, when needed, will be provided.

**Tentative Schedule (Subject to Change):**

<b>Week</b>	<b>Content</b>
Week 0 (Sept. 3 – 7)	c. Introduction (Ch. 1)
Week 1 (Sept. 10 – 14)	a. Charts & Tables (2.1 – 2.3) b. Descriptive Measures (2.4 – 2.7) c. Sample Space and Events (3.1)
Week 2 (Sept. 17 – 21)	a. Counting (3.2) b. Probability (3.3 – 3.5) c. Conditional Probability (3.6)
Week 3 (Sept. 24 – 28)	a. Bayes' Theorem (3.7) b. Mathematical Expectation (3.8) c. Random Variables (4.1)
Week 4 (Oct. 1 – 5)	a. Binomial distribution (4.2) b. Hypergeometric, etc. (4.3) c. The Mean and Variance (4.4)
Week 5 (Oct. 8 – 12)	<b>a. Thanksgiving Holiday</b> a. Chebyshev's Theorem (4.5 – 4.6) b. Poisson and Geometric Distribution (4.7 – 4.8)
Week 6 (Oct. 15 – 19)	a. Continuous Random Variables (5.1) c. Normal Distribution (5.2) d. Normal to Approximate Binomial (5.3)
Week 7 (Oct. 22 – 26)	b. <b>Midterm Exam</b> a. Other Probability Densities (5.4 – 5.9) c. Joint Distribution (5.10)
Week 8 (Oct. 29 – Nov. 2)	b. Normality & Transform. (5.11 – 5.12) c. Sampling Distribution (6.1 – 6.2) d. Sampling Distribution (6.3 – 6.4)
Week 9 (Nov. 5 – 9)	a. Estimation (7.1-2) b. Test of Hypotheses (7.3 – 7.4) c. Test for One Mean (7.5 – 7.6)
Week 10 (Nov. 12 – 16)	a. Test for Two Means (7.8 – 7.9) d. Estimation of Variances (8.1 – 8.2) e. Test for Two Variances (8.3)
Week 11 (Nov. 19 – 23)	b. Test for Proportions (9.1 – 9.3) c. Chi-square Test & Goodness of Fit (9.4 – 9.5) d. Nonparametric Tests (10.1 – 10.5)
Week 12 (Nov. 26 – 30)	a. Method of Least Square (11.1 – 11.2) b. Regression & Correlation (11.3 – 11.6)