

Additional Course Information - Math 321 (L02)

Text: *Mathematical Statistics with Applications (Sixth Edition)*, by Wackerly, Mendenhall, and Scheaffer, Duxbury, 2001.

Assignments: Assignments are based on the material covered. They should be worked on either individually, or with the assistance of your tutorial instructor. The assignments are not for credit, and are simply to assist you in your study of the course material.

Tutorials: Pre-assigned tutorial sections will be used to write quizzes, discuss the assigned problems, and to give students help with problems on request. You will also be exposed to certain aspects of a popular statistical software, MINITAB. You will also learn certain routines in MINITAB when the course material allows. A version of the text is packaged with the student version of MINITAB, for an additional cost. This may be an option worth considering, particularly if you are/plan on enrolling in Mathematics 323. In order to gain access to the programs on the computers in MS 515, MS 521, and MS 571, you will have to use your IT login. If you do not already have one, you will need to acquire a university computing services account, or a UCS/ACS account. You can register for this account on-line at the web page <http://www.ucalgary.ca/it/mp/students.html> or apply for it on the 7th floor of the Math Sciences Building. Finally, these tutorials are not mandatory, but your attendance is **strongly recommended**.

Quizzes: As stated above, you will write each quiz in your assigned tutorial section. Each quiz is a closed book exam. Aides allowed in quizzes/exams include writing utensils, and a basic **nonprogrammable** scientific calculator. In some quizzes, MINITAB use will be allowed. It is of utmost importance that you **check your registration and insure you write each quiz in your registered tutorial section**. Students who fail to do so without prior consent will not receive credit. Quizzes will be based on the assigned questions and will be constructed with the expectation that **ALL PROBLEMS HAVE BEEN ATTEMPTED** and are understood. Cell phones will not be allowed in quizzes/exams.

QUIZ AND EXAM SCHEDULE ACCORDING TO LECTURE SECTION

	L02 - TR@15:30 - ENA003, Lab on Wednesday
Lab Section	T05, T06, T07
Quiz 1	September 29
Quiz 2	October 13
Midterm Exam	October 28 (in Lecture)
Quiz 3	November 17
Quiz 4	December 1

Missed Quizzes: Missed quizzes and exams are extremely rare. Any student missing a quiz or exam for reasons beyond the student's control will have a final grade assessed by reweighting the quizzes in which the student has completed. To be consistent and fair to all, this will apply to all students in the course. **There will be no makeup quizzes or exams!**

Midterm Exam: The midterm exam will be written as scheduled in the above table. The midterm will be written in your lecture section. The duration of the exam will be 50 minutes. It is strongly recommended that you show up early. Formula sheets are **NOT ALLOWED** on the midterm exam. It is a closed book exam.

Final Exam: The final exam will be scheduled by the registrar, and will be a common final exam. It is important to note that **ALL DEFERRED FINAL EXAMS ARE ORAL**.

Final Grades: A distribution of final grades will be described in more detail as the course progresses. In order to earn a letter grade of at least a C-, a student must pass the final exam. **A final grade of less than 50% is considered sub-standard and will result in a letter grade of F.** It should also be stated that final grades are **NON-NEGOTIABLE**.

Behaving: Academic misconduct is a serious offence. Any student exhibiting behavior which is characterized as academic misconduct will be dealt with promptly and with great severity. See the 2004/2005 University Calender for more information or visit the U of C's webpage on academic integrity www.ucalgary.ca/honesty
Please be so kind as to **turn off your cell phone.**

Tentative Course Syllabus

If you wish to read ahead and prepare for the lectures, the following is a rough course syllabus of the textbook sections that will correspond to the lecture material. Please note there is certain to be some flexibility here. I will notify you in class what sections of the text we are currently covering at that time. Please note: This does not mean that you can "blow-off" class.

WEEK OF:

September 8: Introduction to Statistics; Review of Set Notation and Introduction to Probability.
Chapter 1: § 1.1, 1.4; Chapter 2: § 2.1 - 2.4

September 13: Foundations of Probability, Counting Techniques.
Chapter 2: § 2.5 - 2.6

September 20: Independence, Conditional Probability, and Bayes Theorem.
Chapter 2: § 2.7 - 2.10

September 27: Discrete Random Variables; Probability Distributions of Discrete R.V.'s, Expected Values and Variance (Properties of). **Week of Quiz 1.**
Chapter 6: § 2.11, Chapter 3: § 3.1 - 3.3

October 4: The Binomial, Geometric, Negative Binomial, Hypergeometric, and Poisson Distributions.
Chapter 3: § 3.4 - 3.8

October 11: Moment Generating Functions, Chebychev's Theorem. **Week of Quiz 2.**
Chapter 3: § 3.9, 3.11

October 18: Continuous Random Variables and their Probability Distributions. (Special Cases: Uniform)
Chapter 4: § 4.1 - 4.4

October 25: The Normal Distribution, Gamma (Special Cases: Chi-Square and Exponential). **Week of Midterm Exam.**
Chapter 4: § 4.5 - 4.10

November 1: The Central Limit Theorem and Sampling Distributions. The Normal Approximation to the Binomial Distribution.
Chapter 7: § 7.3, 7.4, 7.5

November 8: Introduction to Statistical Inference; Point Estimation and Interval Estimation.
Chapter 8: § 8.1 - 8.7

November 15: Confidence Interval Estimation of the Population Mean (μ) and the Population Proportion (p). **Week of Quiz 3.**
Chapter 8: §: Selected Topics of 8.6 and 8.7

November 22, 29th: Introduction to Hypothesis Testing: Hypothesis Testing of the Population Mean (μ). P -values. Type I and Type II Errors. **Quiz 4 on Wednesday, December 1.**
Chapter 10: §: 10.2 - 10.4, 10.6

December 6: Hypothesis Testing (Con't): Testing about the Population Proportion (p). P -values.
Chapter 10: §: 10.4, 10.6

Assigned Problems

The following are the assigned problems for the course. They have been split into assignments:

Assignment #1: Chapter 1: 9, 20. Chapter 2: 2, 3, 5, 6, 8, 9, 10, 13, 16, 17, 20, 26, 27, 29, 32, 33, 35, 44, 47, 48, 50, 51, 54, 58, 61, 62, 63, 64, 65, 67, 68, 69, 71, 72, 75, 76, 78, 85, 86, 88, 90, 91, 95, 96, 99, 100, 101, 105, 108, 110, 112, 113, 115, 116, 121, 124, 125, 126, 127, 131, 136, 138

Assignment #2: Chapter 3: 2, 3, 4, 7, 10, 11, 13, 15, 16, 17, 19, 20, 21, 23, 24, 26, 27, 29, 31, 33, 40, 42, 45, 49, 51, 54, 55, 56, 59, 62, 72, 73, 77, 79, 80, 81, 85, 87, 95, 101, 102, 104, 105, 107, 112, 117, 118, 119, 120, 121, 123, 124, 125, 134, 135, 139, 141, 142, 149, 150, 155, 156, 159, 162, 165, 168, 171, 174

Assignment #3: Chapter 4: 5, 7, 9, 12, 13, 15, 16, 19, 21, 22, 23, 24, 25, 26, 27, 28, 29, 32, 37, 42, 43, 49, 50, 51, 52, 54, 58, 60, 69, 71, 72, 79, 74, 77, 82, 83, 89, 91, 92, 104, 109, 112, 113, 118, 122, 129, 131, 135, 142, 152

Assignment #4: Chapter 7: 25, 26, 27, 28(a), 30, 31, 34, 35, 36, 37, 42, 43, 46, 47, 48, 49, 50, 51, 54, 57, 60, 61, 70, 79. Chapter 8: 4(omit $\hat{\theta}_4$), 5, 6, 7, 8, 9, 16, 36, 39, 40, 41, 42, 43, 44, 45, 58, 59, 62, 63.

Assignment #5: Chapter 10: 1, 2, 3, 4, 5, 6, 7, 8, 10(assume $\sigma = 10$), 15, 19, 20, 21, 24(assume $\sigma = 3.1$ days), 27, 28, 29, 31, 32, 40(assume $\sigma = 11$), 45, 47. In addition, find the P -values in problems 7, 10, 15, 19, 24.

The detailed solutions to the even numbered text problems will be posted online. Again, quizzes and exams will be based on the assignments. Generally speaking, if you do not complete the assignments, you do not successfully complete the course.