MATH 201 – Introduction to Probability and Statistics (3 credits)
Professor’s notes*
As of June 25, 2007

*Note: All content is based on the professor’s opinion and may vary from professor to professor & student to student. All content may be changed without notice. This information is for the purpose to provide analysis but is not binding in any form.

From a Scale 1-10 (1 = low demands; 5 = moderate demands; 10 = very demanding), How would you rate the overall level of difficulty of this course?

Level of demand = 8 (if you are a typical math student), = 10 (if math doesn’t come easy to the student)
Note that you must learn this material on your own and outside of a classroom setting. I believe this course should be taken by itself when possible due to the concentration and time demands required (minimum 10 hrs per week). I believe the overall difficulty of the course exceeds the sum of its parts for the following reason: it is one thing to learn how to hit a backhand and forehand in tennis: it is a completely different animal to put those strokes together in a game against Andy Roddick, Roger Federer, Maria Sharapova or Serena Williams.

From a Scale 1-10 (1 = low demands; 5 = moderate demands; 10 = very demanding), How would you rate the level of the reading requirements in this course?

Level of demand = 7
I believe the author of the textbook does an excellent job of presenting the material in a format that is conducive to learning for a distance student, although nothing can replace taking a math course in a classroom and being able to ask questions. I advise the student to not just read the textbook and example problems, but to work the example problems to understand all the processes and calculations involved.

From a Scale 1-10 (1 = low demands; 5 = moderate demands; 10 = very demanding), How would you rate the level of the lecture requirements in this course?

Level of demand = 1
There are no videos or lectures for the course. However, a set of video lectures to accompany the textbook are available from the publisher, and another website is referenced in the syllabus and provides lectures on various statistical concepts.

From a Scale 1-10 (1 = low demands; 5 = moderate demands; 10 = very demanding), How would you rate the level of the online exam requirements in this course?

Level of demand = 7
This course only contains 2 exams: a midterm and a final, and count as 58% of your final grade. Both are timed with points deducted if that time is exceeded. The exams are multiple choice and the problems are based on the homework. No statistical software is
permitted during the exams. There are no study guides for the exams. Anything on the homework is fair game, so doing and understanding the homework is essential.

**From a Scale 1-10 (1 = low demands; 5 = moderate demands; 10 = very demanding), How would you rate the level of the discussion board requirements in this course?**

Level of demand = 3
This course contains 8 weekly discussion board assignments and comprises a total of roughly 36 questions and 18% of your final grade. Most are fairly straightforward and come directly from concepts presented in the textbook. One discussion board requires you to assess the probability of an Old Testament prophecy from being fulfilled. Another one requires you to explore the life of Blaise Pascal. Your responses should be in complete sentences --- not just “yes” or “no”.

**From a Scale 1-10 (1 = low demands; 5 = moderate demands; 10 = very demanding), How would you rate the level of the written paper requirements in this course?**

Level of demand = 7
This refers to the assignments regarding homework problems since there are no written paper requirements. The 8 weekly homework assignments comprise a total of roughly 100 problems and 24% of your final grade. If you understand and do the homework expeditiously, the exams should be easy.

**Additional comments:**

Based on the 1000 students who have completed this course, here is some advice from the students’ comments. This is a fast-paced course and not for the faint-hearted at math. You should expect to spend a minimum of 10 – 15 hours per week in this course to do well (and more if you struggle in math). The prerequisite for the course is MATH 110 Intermediate Algebra. I would not advise taking MATH 201 if it has been over 5 years since you have had a math class: take the prerequisite and use it to get up to speed in basic mathematical concepts and calculations. Nearly half the students who take MATH 201 without the prerequisite earn a D or F, so think about the impact on your GPA before you jump into this course blindly. As a last resort and if you think you would learn mathematics better in a traditional classroom setting (which provides immediate responses to your questions), you may want to explore taking this course at a local community college (which also provides free tutoring). Note that this course serves as a prerequisite for a total of 10 other courses in the areas of business, computers, health and psychology. If you do poorly in this course, you will likely bomb the sequential course. Thus, do what you can to be as best prepared as possible when taking this course.
# Course Chart

**MATH 201**


<table>
<thead>
<tr>
<th>WEEK</th>
<th>READING ASSIGNMENT</th>
<th>LEARNING OUTCOMES</th>
<th>LEARNING ACTIVITIES</th>
<th>POINTS</th>
<th>% OF TOTAL</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Chs. 1-2</td>
<td>1.1–1.2 1.4 2.1–2.4</td>
<td>Discussion Board 1  Weekly Assignment 1</td>
<td>3 4</td>
<td>2.21% 2.94%</td>
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<tr>
<td>2</td>
<td>Ch. 3</td>
<td>3.1–3.4</td>
<td>Discussion Board 2  Weekly Assignment 2</td>
<td>3 4</td>
<td>2.21% 2.94%</td>
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<tr>
<td>3</td>
<td>Ch. 4</td>
<td>4.1–4.5 4.7</td>
<td>Discussion Board 3  Weekly Assignment 3</td>
<td>3 4</td>
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<tr>
<td>4</td>
<td>Chs. 5–6</td>
<td>5.1–5.4 6.1–6.3</td>
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<td>3 4 40</td>
<td>2.21% 2.94% 29.4%</td>
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<tr>
<td>5</td>
<td>Chs. 6–7</td>
<td>6.4–6.5 7.2–7.4</td>
<td>Discussion Board 5  Weekly Assignment 5</td>
<td>3 4</td>
<td>2.21% 2.94%</td>
</tr>
<tr>
<td>6</td>
<td>Chs. 8–9</td>
<td>8.1–8.4 9.5</td>
<td>Discussion Board 6  Weekly Assignment 6</td>
<td>3 4</td>
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<tr>
<td>7</td>
<td>Ch. 10</td>
<td>10.1–10.3</td>
<td>Discussion Board 7  Weekly Assignment 7</td>
<td>3 4</td>
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<tr>
<td>8</td>
<td>Chs. 11–12</td>
<td>11.1–11.3 12.1–12.2</td>
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<td>3 4 40</td>
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**Total Points** 136 100%
COURSE SYLLABUS

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF MATHEMATICS

MATH 201
INTRODUCTION TO PROBABILITY AND STATISTICS

COURSE DESCRIPTION
Introduction to descriptive statistics and probability, probability distributions, estimation, tests of hypotheses, chi-square tests, regression analysis, and correlation with applications in business and science.

RATIONALE
As members of a society increasingly devoted to the use and misuse of numbers, students must learn to correctly interpret statistical presentations in advertising and in their major fields. This course is designed to give the students a working knowledge of the topics listed above with an emphasis on the application of statistical knowledge rather than the theory.

I. PREREQUISITES
MATH 110 or equivalent.

II. REQUIRED TEXTBOOK

III. MATERIALS FOR LEARNING
A. Internet access (broadband or cable recommended) and Microsoft Word and Excel
B. Textbook
C. Scientific calculator

IV. COURSE OBJECTIVES
Develop a basic understanding of probability and statistics, their basic concepts and practical applications. Upon completing the course, you will be able to:

A. Summarize and analyze data.
B. Calculate the probabilities of independent and dependent events.
C. Analyze probability distributions
D. Define the confidence interval for the population mean and the population proportion.
E. Perform hypothesis testing.
F. Calculate a correlation coefficient and equation of a regression line.
G. Use a chi-square distribution in a test of independence.

V. COURSE REQUIREMENTS AND ASSIGNMENTS

A. General
An eight-week online math class requires hard work, 12 to 18 hours per week. You will have spare time when traveling to and from school, and the schedule will be not so strict as in an on-site class. On the other hand, there will not be face-to-face contacts with the instructor and classmates, and work in groups will be more difficult. Therefore, an on-line course requires more independence, self-discipline and self-motivation.

B. Discussion Boards
This is an important component of on-line learning. Threaded discussions take place asynchronously with each student posting or commenting by logging on to the class at different times. That allows the participant more time to ponder an issue and come up with a justified opinion. Students can initiate discussions, ask questions, react to other students, respond to ideas shared by others in the class, and become more creative in their own learning process.

The topics for discussion will be offered for each of the eight weeks. Postings can be made during the current week through the Monday of the next week. After the weekly threaded discussion is closed, no more postings are allowed.

C. Weekly Assignments
You will be required to do 8 homework assignments, each consisting of solutions to the assigned problems. You need to show all work, not just the answers, and turn in the assignments in a timely manner.

D. Midterm Exam
A midterm exam, covering chapters 1–5, will be administered at the end of Week 4 (more details will be given before the test). The timed test will
contain multiple-choice questions. Since this is an objective test, you will
not submit any
calculations and no partial credit will be awarded.

E. **Final Exam**

A final exam, covering chapters 6–12, will be administered at the end of
Week 8 (more details will be given before the test). The test will contain
multiple-choice questions. During the allotted time, you will have to mark
the right answers to the questions. Since this is an objective test, you will
not submit any calculations and
no partial credit will be awarded.

VI. **Evaluation and Grading**

A. **Points/Weight**

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<tr>
<th>Activity</th>
<th>Points/Weight</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Discussion Boards</td>
<td>8 @ 3pts each</td>
<td>24 pts</td>
</tr>
<tr>
<td>Weekly Assignments</td>
<td>8 @ 4 pts each</td>
<td>32 pts</td>
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<tr>
<td>Midterm Exam</td>
<td>Lessons 1–4</td>
<td>40 pts</td>
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<tr>
<td>Final Exam</td>
<td>Lessons 5–8</td>
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<tr>
<td><strong>Total</strong></td>
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B. **Scale**

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<td>B</td>
<td>84–91</td>
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<td>C</td>
<td>74–83</td>
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<td>D</td>
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