IE 202 – Introduction to Probability

Course Outline – Winter, 2006

		DEVORE	BLUMAN
INTRODUCTION TO PROBABILITY			
1/4	Population and samples, probability and statistics	1.1	ch 1
BASICS OF PROBABILITY			
1/6	Sample spaces and events	2.1	ch 2
1/6	Properties of Probability	2.2	ch 3
1/9,11	Counting Techniques (Permutations and Combinations)	2.3	ch 6
1/13,16	Conditional Probability and Bayes Theorem	2.4	ch 3,4,5
1/16	Independence of Events	2.5	ch 3,4,5
DISCRETE RANDOM VARIABLES AND PROBABILITY DISTRIBUTIONS			
1/18	Random Variables	3.1	
1/18	Probability Distributions (PMF and CDF)	3.2	
1/20	Expected Value of a Random Variable and a Function of a RV	3.3	
1/23	Variance and Standard Deviation	3.3	
1/25	*Bernoulli Trials and Binomial Distribution*	3.4	ch 7
1/27,30	*Geometric, Hypergeometric and Negative Binomial Dist^{ns}*	3.5	ch 8
2/1	*Poisson Distribution*	3.6	ch 8
2/3	**QUIZ 1**		
CONTINUOUS RANDOM VARIABLES AND PROBABILITY DISTRIBUTIONS			
2/6	Probability Density Functions	4.1	
2/6	Cumulative Distribution Function	4.2	
2/8	Expected values, EV of a function, Variance and SD	4.2	
2/10	*Uniform Distribution*		
2/13,15	*Normal Distribution and Standard Normal Distribution*	4.3	ch 9
2/15,17	*Normal as approximation for Binomial and Poisson Dist^{ns}*	4.3	
2/20,22	*Exponential, Erlang and Gamma Distributions*	4.4	
2/22,24	*Other continuous distributions*	4.5	
2/27	**QUIZ 2**		
JOINT DISTRIBUTIONS			
3/1	Jointly distributed random variables, marginal distributions	5.1	
3/3	Independent distributions	5.1	
3/6	Conditional distributions	5.1	
3/8	Expected values, covariance, correlation	5.2	
3/10	Review		
3/15	**FINAL EXAM 9-11**		

INSTRUCTOR

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Daskin
office hours: M W, F 3-5; **or any other time** by appointment. I am serious about the **any other time** part. It is quite possible that these hours will not be convenient for some of you, so please just send me an e-mail to set up an appointment if you need/want to see me!

TA

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REQUIRED TEXTBOOK

All material for the course will be from:

Devore, Jay L., 2004, Probability and Statistics for Engineering and the Sciences, Sixth edition, Thomson, Australia.

The following book is also recommended, though we will not be using it directly

Bluman, Allan G., 2005, Probability Demystified, McGraw Hill, NY.

GRADING

Students will be evaluated on five components of the course:

- Homework 20%
- Quiz 20% each
- Final Exam 40%

HOMEWORK

There will be approximately 9 homework assignments (roughly one per week). They will be due **IN CLASS** on **Wednesday**. There will be **NO CREDIT** given for late homework.

Each question will be graded out of 4 units. You will get:

4	for correct solutions with work shown
3	for solutions with minor mistakes, i.e. computational, etc.
2	for correct solutions with no work shown, or for partially correct solutions with work shown.
1	for incorrect solutions
0	if no attempt is made

Each homework assignment is likely to include some computer work (typically, but not exclusively in Excel). This work should be submitted via BLACKBOARD.

QUIZZES AND FINAL EXAM

There will be two 1-hour quiz. Currently they are **tentatively** scheduled for **February 3** and **February 27** as shown above in the **tentative course outline**. They will be an in-class exams. The final exam is scheduled for **Wednesday, March 15, from 9-11 p.m.**

The exams are closed book exams. For the quizzes you can prepare a **one page** summary sheet of information to bring to the quiz. For the second quiz you can bring the first summary sheet as well as a new one with the additional information covered between the two quizzes. The final exam will be open book, open notes, etc. You should probably prepare a summary sheet for the final as well since doing so is a great way to study for the exam. **Each exam is cumulative** though they will tend to focus more on the most recent material**.**

AVAILABILITY OF EXCEL

EXCEL is available in the IE/MS Computing Lab in Tech C135.

ACADEMIC HONESTY

I have no problem with you working with others on the homework assignments. However, each student must hand in his/her own solutions to each assignment. The electronic components should also be done by each individual. In other words, it is not acceptable to simply copy someone else's spreadsheet, make a few cosmetic changes and then submit the work as your own.

If you do work with someone else on a problem set, please identify the person you worked with on your solutions.

The quizzes and the final are *clearly* to be done without consultation with any other student.

ATTENDANCE POLICY

Past experience has shown that students who attend class *regularly* and *on time* do significantly better in the course. While some of what we do (much of it) is covered in one way or another in the text, the perspectives offered in class are often different. In addition there will be some material presented in class that is NOT in the book. Students are **strongly** encouraged to be in class every day. If you cannot be here for some reason, I would appreciate knowing about it in advance (e.g., via e-mail).

NU DISABILITY POLICY

(For further information, please check the following web site:
http://www.northwestern.edu/disability/index.html)

Northwestern University is proud to welcome and support a diverse student body. By removing some of the barriers to education that students with disabilities often experience, we hope to create a learning environment that encourages and challenges all students.

Northwestern University provides a variety of services to assist students with disabilities in becoming active members of the University community. Services vary according to the type and level of impairment experienced by each student. The majority of these services are coordinated by the Office of Services for Students with Disabilities (SSD).

Appropriate services and accommodations are determined on a case-by-case basis. Students with questions about eligibility for services are encouraged to contact SSD. Depending on students' needs and limitations, documentation, history of accommodations and educational environment, SSD may provide the following as appropriate: scribe and reader services; note-taking services; materials in e-text and audio format; testing accommodations, such as extended time and alternative test environment; interpreter and captioning services; assistance in activity relocation; assistance in obtaining elevator and lift keys; access to adaptive equipment and software.