STAT 5104 PROBABILITY AND DISTRIBUTION THEORY Fall 2009

INSTRUCTOR: Marion R. Reynolds, Jr.

OFFICE: 411 Hutcheson Hall, 231-7931, mrr@vt.edu

CLASS: 10:10 – 11:00 MWF, in 232 Smyth Hall.

OFFICE HOURS: I will usually be available in my office from about 11:10 - 11:40 MWF (after class). I am willing to see students at other times when I am in the office, but it is worth checking in advance to make sure that I am available.

OBJECTIVES: The objectives of this course are to develop the basic concepts and tools of probability and distribution theory that will provide a foundation for additional study in statistics, probability, stochastic processes, or applications in applied fields.

GRADING: Grades will be based on 3 tests given during the semester, and on a comprehensive final exam. The tests will count 20% each and the final exam 40%. We will try to schedule the tests during a three-hour period in the evening.

HOMEWORK: Homework will be assigned each day and brief questions will be addressed during the following class period if necessary. Additional problem sessions will be scheduled as needed. The homework will not be taken up for grading, but it is the responsibility of each student to do the homework.

TEXT: *Statistical Inference*, Second Edition, by George Casella and Roger L. Berger

MATERIAL TO BE COVERED: We will cover most of Chapters 1, 2, 3, and 4, and part of Chapter 5.

SOME ADDITIONAL REFERENCES

Bain, L. J. and M. Engelhardt (1992). *Introduction to Probability and Mathematical Statisitcs*, 2nd Edition. Duxbury

Bartoszyński, R. and M. Niewwiadomska-Bugaj (2008). *Probability and Statistical Inference*, 2nd Edition. Wiley, New York.

Hogg, R. V., J. W. McKean, and A. T. Craig (2005). *Introduction to Mathematical Statistics*, 6th Edition. Pearson Prentice Hall, Upper Saddle River, NJ.

Feller, W. (1968). *An Introduction to Probability Theory and Its Applications*, Volume I, 3rd Edition. Wiley, New York.

Ghahramani, S. (2000). *Fundamentals of Probability*, 2nd Edition. Prentice Hall, Upper Saddle River, NJ.

Harris, B. (1966). *Theory of Probability*. Addison-Wesley, Reading, MA.

Hoel, P. G., S. C. Port, and C. J. Stone (1971). *Introduction to Probability Theory*. Houghton Mifflin, Boston.

Kapadia, A. S., W. Chan, and L. Moyé (2005). *Mathematical Statistics with Applications*. CRC Press, Boca Raton, FL.

Kelly, D. G. (1994). *Introduction to Probability*. Macmillan, New York.

Knight, K. (2000). *Mathematical Statistics*. Chapman & Hall, New York.

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Lindgren, B. W. (1993). *Statistical Theory*, Fourth Edition. Chapman & Hall, New York.

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Neuts, M. F. (1973). *Probability*. Allyn and Bacon, Boston.

Olkin, I., L. J. Gleser, and C. Derman. (1994). *Probability Models and Applications*. Macmillan, New York.

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Rao, C. R. (1973). *Linear Statistical Inference and Its Applications*, Second Edition. Wiley, New York.

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Stapleton, J. H. (2008). *Models for Probability and Statistical Inference*. Wiley, Hoboken, New Jersey.