

# Syllabus for MAT 525 SSII 2017

**Instructor:** Terry McConnell

- Office: 317F Carnegie
- Phone: 315-443-1499
- Email: [trmconn@syr.edu](mailto:trmconn@syr.edu)
- [Personal Website](http://barnyard.syr.edu/) (<http://barnyard.syr.edu/>)

**Office hours:** MTW 11-12 AM and by appointment.

**Class:** MTWTh 12-1:45 120 Carnegie

**Text:** *Introduction to Mathematical Statistics* 7th Ed., Robert V. Hogg, Joseph W. McKean, Allen T. Craig, Pearson, Boston, 2013 (ISBN 13: 978-0-321-82467-7)

## Catalogue Description:

MAT 525 **Mathematical Statistics** 3 Y Estimation and Confidence Intervals. Normal Distribution and Central Limit Theorem. Testing Hypotheses, chi-square, t, and F distributions. Least squares, regression, and correlation. Prerequisite: MAT 521

**Learning goals:** To understand the mathematical underpinnings of common statistical methodology. Many of the standard procedures will be taught and some applications will be considered, but the emphasis throughout is on mathematical issues rather than methodology.

**Prerequisite:** MAT 521 or equivalent calculus based probability course at the senior undergraduate or beginning graduate level.

**Grading:** 2 tests 40%, final exam 25%, homework and quizzes 15%, Project 20%

**Academic Integrity:** The Syracuse University Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the Policy and know that it is their responsibility to learn about instructor and general academic expectations with regard to proper citation of sources in written work. The policy also governs the integrity of work submitted in exams and assignments as well as the veracity of signatures on attendance sheets and other verifications of participation in class activities. Serious sanctions can result from academic dishonesty of any sort. For more information and the complete policy, see [http://supolicies.syr.edu/ethics/acad\\_integrity.htm](http://supolicies.syr.edu/ethics/acad_integrity.htm)

**Disabilities:** If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS), <http://disabilityservices.syr.edu>, located in Room 309 of 804 University Avenue, or call (315) 443-4498 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible. You are also welcome to contact me privately to discuss your academic needs although I cannot arrange for disability-related accommodations. Making arrangements with ODS takes time. Do not wait until just before the first test.

**Tests:** Tests will last 1 hour, which is just a bit over half of the class time. Test 1 will be Thursday, July 13. It will cover 3.3, 3.5, 3.6, 4.1, and 4.2. Test 2 will be Thursday, July 27. It will cover 4.4-4.6, 4.7-4.9, and 6.1-6.3.

**Final:** The final will take the entire last day of class, August 10. In addition to all earlier material, it will cover 7.1-7.3, 8.1-8.2, and 9.6-9

**Projects:** Each student will conduct a statistical study of some topic that interests them and present their conclusions both orally and in writing. The 20% of the grade allocated to the project breaks out as follows: written description of the topic to be investigated (5%), written description of methodology (5%), 5-minute oral presentation of results (5%), and written report (5%). The written description of the topic is due Monday, July 17. The written description of methodology is due Monday, July 31. The oral presentations are on Monday, August 7, and the final report is due the last day of class. I will give more details on what is expected.

**BS/BA Learning Outcomes mapped to this Course:**

- Demonstrate facility with the techniques of single and multivariable calculus and linear algebra
  - Effectively communicate mathematical ideas
  - Make symbolic calculations by hand and with technological assistance
  - Reproduce essential assumptions, definitions, examples, and statements of important theorems
  - Describe the logical structure of the standard proof formats, reproduce the underlying ideas of the proofs of basic theorems, and create simple original proofs
  - Solve problems using advanced undergraduate methods from the core areas of pure mathematics: analysis, algebra, and probability
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