MthSc 814 — *Network Flow Programming* (Fall 2012)

Meeting Time: 8:00-9:15 TuTh, M-302 Martin

Instructor: Dr. D. Shier, 656-1100, O-120 Martin, shierd@clemson.edu

Office Hours: TTh 2:00–3:00, W: 12:00-1:00, and by appointment

Textbooks: *814 Course Notes*, 200+ pages, available at Campus Copy, Rubin Square (required)
R. K. Ahuja, T. L. Magnanti, J. B. Orlin, *Network Flows*, Prentice Hall, 1993 (recommended)

Web Page: http://www.math.clemson.edu/~shierd/Shier/MthSc814/ms814.html

Prerequisites: MthSc 440/810 (linear programming) is desirable but not essential

Learning Outcomes: Upon successful completion of this course the student will be able to

- formulate scheduling and distribution problems as network problems
- solve combinatorial problems using networks
- carry out a complexity analysis of a given algorithm, written in pseudocode
- execute the steps of several shortest path algorithms
- execute the steps of several maximum flow algorithms
- execute the steps of several minimum cost flow algorithms

Grading Policy: 40% Two In-Class Tests
25% Homework Assignments and Class Activities
35% Final Exam (Friday December 14, 7:00-9:30)

☞ The homework assignments are designed to be stimulating and educational experiences. General discussion among students is fine. However, be sure to turn in your *own* written work.

Grading Scale: A = 85+
B = 70–85
C = 55–70

Class Attendance: Students are expected to attend class regularly and punctually. If the instructor does not arrive within 15 minutes after the designated start of class, the class is considered dismissed.

Course Contents: Preliminary concepts (complexity, graph searching), shortest paths, maximum flows, minimum cost flows, combinatorial implications. The course will also stress formulations, applications, and algorithms for network problems. We will make use of network optimization software installed on Unix machines located in Martin E-7.

Official Policies:

• It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities. Students are encouraged to contact Student Disability Services to discuss their individual needs for accommodation.

• Clemson's academic integrity policies will be followed; see the following web sites

http://www.clemson.edu/ugs/academic_integrity/index.html
http://gradspace.editme.com/AcademicGrievancePolicyandProcedures - integritypolicy