VIRGINIA COMMONWEALTH UNIVERSITY
Department of Mathematics & Applied Mathematics
Oper 731 – Combinatorial Optimization
Spring 2019

Instructor: Dr Larson
Office: 4106 Harris Hall
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Web page: www.people.vcu.edu/~clarson, and Canvas for grades.
Office Hours: 11:00-12:00 MWF

Prerequisite(s): Oper 527.

Text and Other Materials: *Introduction to Combinatorial Optimization*, by John Lee, ISBN: 0521010128. Digital version available free on VCU Library website; try: https://ebookcentral-proquest-com.proxy.library.vcu.edu/lib/vcu/detail.action?pq-origsite=primo&docID=256650

Topics and Goal: Provides the theoretical background necessary to design and evaluate advanced solution techniques for discrete optimization problems. Topics include theory of polyhedra and valid inequalities for integer programming models, matchings, computational complexity, and sufficient conditions for integer programs to be polynomially solvable.

Attendance: There is no attendance policy per se, but there will be homework and in-class assignments that are due.

Expectations:

- You are expected to attend class, complete homework, and ask questions during class or office hours.

- When presenting your work, I expect you to show all significant steps that are used to complete each problem. In cases where work is missing, you will not be given full credit.

- I encourage you to work with others on homework problems, however, any assignments to be turned in must be written up on your own. If you work with others, you must write who you worked with on your assignment.

- Please write neatly on all assignments to be graded; exceptionally messy work may not be graded.

- Only selected homework problems will be graded; other problems will be graded for completion.

- **There are no make-ups on in-class assignments.** I will drop your three lowest in-class assignments, assuming that you couldn't come to class for excusable reasons.

- Make up tests will be considered under exceptional circumstances: if you miss a test and want to be considered for a make-up, you *must* contact me immediately.

Tests and Determination of Grades:

There will be two equally weighted tests. Here is the *tentative* schedule:

Test #1, Thurs., Mar. 3
Test #2, Thurs., May 5, 8:00-10:50.

• The tests are closed-book and closed-notes.
• The tests will be *closely based on* the in-class assignments and assigned homework.
• Use of calculators or other computing technology is not allowed on the tests.
• Tests are written under the assumption that you are studying the material at least 6 hours per week outside of class.

Your final average will be computed as follows:

Tests: 50% (25% each)
Homework: 20%
In-class assignments: 20%
Project   10%

Grade Scale: The 10-point scale: 90-100 A, 80-89 B, etc.

Important Dates to Know:

- Last day to withdraw is Fri., Mar. 25
- Spring Break (no classes), Mar. 6-13.
- Classes end on Tues., May 3

VCU Syllabus Statement: Students should visit **http://go.vcu.edu/syllabus** and review **all** syllabus statement information. The full university syllabus statement includes information on safety, registration, the VCU Honor Code, student conduct, withdrawal and more.