

# MAT 5340, Intro to Operations Research

## Course Information

Prof Wm C Bauldry

Mathematical Sciences

January, 2012

## Catalog Entry

**MAT 5340. Introduction to Operations Research/(3).On Demand.**

A thorough study of linear programming including duality theory and sensitivity analysis. At least two other topics related to mathematical applications in the management sciences queuing theory, Markov processes, game theory, decision analysis, network analysis, etc. will be covered. Prerequisites: MAT 2240 (Linear Algebra) and either STT 3850 (Statistical Data Analysis) or STT 4250 (Probability Modeling with Applications). [Dual-listed with MAT 4340.]

## Syllabus

We will cover study of linear programming including duality theory and sensitivity analysis, Data envelopment analysis, and inventory analysis, considering material from chapters 1  $\rightarrow$  6, 17, and 18 of the text, as time allows.

## Text & Resources

### **Textbook:**

*Introduction to Operations Research*, Hillier & Lieberman, 8th ed, McGraw-Hill, 2005.

### **Optional Supplement:**

*Schaum's Outline: Theory and Problems of Operations Research*, Bronson & Naadimuthu, 2nd ed., McGraw-Hill, 1997.

### **Software:**

- Maple 15™
- Excel™
- some web page java simplex calculators
- graphing programs

## Contact Information

Professor: Dr Wm C Bauldry

Office: Walker 237

Office Hours: To be announced and/or by appointment.  
Check my [online calendar](#).

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## Grading

1 midterm exam	≈	100 pt.
Quizzes & homework	≈	100 pt.
Projects & Reports	≈	100 pt.
Comprehensive Final Exam	≈	150 pt.
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Total	≈	450 pt.

There are two requirements:

① Accumulate the necessary points:

90%: A-

80%: B-

70%: C-

55%: D

*These are anticipated cut-off scores  
and may be lowered (but not raised).*

② Pass the final exam (at least 50%)

Note: Attendance is expected, but not graded.

## University Policies

*See the Academic Affairs Policy Page*

### ● **Academic Integrity Code**

*See the complete Academic Code*

Students . . . agree to abide by the following Code:

- Students will not lie, cheat, or steal to gain academic advantage.
- Students will oppose every instance of academic dishonesty.

### ● **Disability Services**

*See the Office of Disability Services*

“Appalachian State University is committed to making reasonable accommodations for individuals with documented qualifying disabilities”

### ● **Attendance Policy**

*See the ASU Attendance Policy*

“Class attendance is an important part of a student’s educational experience. Students are expected to attend every meeting of their classes and are responsible for class attendance.”

### ● **Student Engagement with Courses**

*See Student Engagement*

The “foremost activity of students is an intense engagement with their courses. In practical terms, students should expect to spend two to three hours of studying for every hour of class time.”

**Generic Comments**

- Attendance is not graded; however, mathematics can only be learned through **active participation** — not by osmosis. Study groups are good!
- Cell phones must be silent during class and must be turned off for quizzes and tests. Using a cell phone during a quiz or test is academic misconduct. The instructor's cell-phone will be turned on during quizzes and tests for emergency notification.
- If you find a concept difficult, come in for **help**. Don't wait until an exam or quiz to prove that you don't understand something.
- If you cannot attend a test, make arrangements *before* an exam to make it up. There are no post hoc make-ups. Missed quizzes or homework assignments will not be made up. Keep close track—the days of exams & quizzes or due dates for homework may change.