COURSE SYLLABUS
FNRM 5264  Advanced Forest Management Planning
Spring, 2017

Instructor:  Howard Hoganson, Professor
North Central Research and Outreach Center
University of Minnesota
1861 Highway 169 East
Grand Rapids MN 55744
email:  hogan001@umn.edu
Grand Rapids office phone: 218-327-4490 ext 2026

St Paul Office: Visiting faculty office, First Floor, Green Hall

St Paul Office Hours:  By appointment. The instructor encourages open communication via e-
mail and regular meetings with instructor throughout the semester.

Scheduled Meeting Time:  Arranged based on schedules of students and instructors.

Pre-requisite:  Graduate student or permission from instructor

Inter-related Course Objectives:

1. To better understand interrelationships between stand-level decisions and, forest-
   level decisions and potential tools to help analyze options in detail.

2. To develop a more in-depth understanding of modeling tools from operations
   research that can be applied to the student’s area of interest or expertise.

3. To better understand how information from the student’s area of expertise can be
   utilized in decision-making analyses for forest management.

Course Structure:

1. This course operates under the assumption that most of each student’s learning occurs
   outside the classroom. Much of the emphasis is on student projects in which the student
   is expected to take a lead role in defining. The class is structured under general
   University of Minnesota guidelines that suggest that an average student in a 3 credit
   class will likely need to work 6 hours each week outside of class on coursework to earn
   an average grade for that class.
2. Class meetings will be informal and structured to be interactive discussions involving students and the instructor. Students are encouraged to actively participate in class while listening and respecting the views of others. Interacting with other students can help substantially as some concepts will be new to those without a strong background in operations research or management science. Forest planning typically involves an interdisciplinary planning team that requires active group participation. Some participants have excellent insights regarding specific issues but often have little background in natural resource planning. Students and instructors represent a wide range of background, experience, and interests. Try to take advantage of it.

3. The course is analytical in nature but it does not require a strong technical math background. The math is almost entirely high school linear algebra and basic compounding and discounting concepts from economics.

4. Students are encouraged to help each other. Often a good way to learn something well is to teach it to someone else. Grades will not be based on a curve. Please feel comfortable working on work together as long as emphasis is on helping each other learn. However, **academic dishonesty** in any portion of the work is grounds for awarding a grade of F or N for the course. If you have specific questions, please ask the instructor or visit the website: [www.oscai.umn.edu](http://www.oscai.umn.edu).

5. More topics are available than can be covered. Rather than try to cover many topics, focus will be on fewer topics with emphasis on understanding those topics well. With the small size of the class, topics for discussion will be tailored to help address the specific interests of the students registered.

6. For class meetings, outlines will be distributed in class or emailed to the student at least one week before class. Students are expected to check their email regularly.

**Textbook:** No text is required. Expect that several recent journal articles will be required reading before scheduled class discussions. A good background text is:


Copies will be made available as reserve reading in the library. The 3rd edition of this text contains much of the material discussed. Used copies may be available online at a substantially lower cost.
Grades: Final course grades will be based on two student projects. Each project will be graded based on a 4.0 scale with the first project counting 40% of the class grade and the second project counting 60%.

Each student must meet individually with the instructor during the first two weeks of the class to define their two class projects. Students are required to have a written plan of work for both projects approved by the instructor before the end of the 5th week of the semester. Students are encouraged to tailor projects to fit with their specific interests. Demonstrating what has been learned by the student should be the emphasis of each report submitted for each project.

The first project should be designed to help strengthen the student’s understanding of operations research techniques applied in natural resources. It may consist of a literature review tailored to the student’s background and interests. Students may also benefit by reviewing selected lecture notes and homework assignments from FNRM 3471, Forest Management Planning. Those notes are available through the instructor. Emphasis of the first assignment should be on demonstrating an understanding of the strengths and weaknesses of the analytical method(s) they select with emphasis on potential application to address decisions in natural resource management. The first project is due at the end of the 10th week of the semester.

The second project should focus more on specific applications of analytical methods to decision-making problems in natural resources. Students are encouraged to also tailor this project to match their specific interests. The project could very well be tied to the student’s own research project for their graduate degree. Examples of projects might include:

a) A critique of recent modeling/planning efforts done in practice. For example, recent or ongoing planning efforts by the Minnesota DNR, the USDA Forest Service, or other large landowner.

b) A proto-type test of how a model might be formulated to address a specific problem of interest to the student.

c) A comparison of results from multiple model applications to help address important management issues of special interest to the student.

d) A critical review of formal public comments (and responses) regarding a recent large-scale forest planning effort.

e) The development of a detailed study plan that proposes using tools from management science to help analyze a specific facet of the forest management situation that is of special interest to the student.

The second project is expected to be completed by the last day of class. The student will be expected to be ready to describe both of their projects to the class at the first class meeting time during the last week of classes. Students should plan for a 20-minute presentation with an additional 10 minutes for discussion.