

AGENDA

ALC3138: Advanced Structured Decision Making Practicum

Course Description: This course builds on the fundamental principles taught in “Introduction to Structured Decision Making” (ALC 3171) and “Adaptive Management” (ALC 3176), and explores more advanced topics in decision analysis. The course is designed to provide intensive hands-on practice of advanced techniques. The content of the course changes annually, so practitioners of SDM can take this course repeatedly as a means of professional development. In 2012, topics will include: methods for development of measurable attributes; decision trees and utility theory, including elicitation of utilities; weighting methods for multi-criteria decision analysis; economic approaches to valuing ecosystem services; and game theory as it might apply to natural resource management. A standing feature is the opportunity for participants to share their experiences in delivering SDM, and a discussion about how we can improve the effectiveness of our work. The course is student-centered; participants will be expected to undertake some advanced preparation, and to engage actively in the exercises that form the bulk of the class.

Advanced Preparation: In preparation for the course, participants should complete the following activities:

1. Consider one or more multiple-objective trade-off problems that they are familiar with in their job, and assemble measurable attributes that were used (or could have been used) in these analyses. These will be used on the second day, during break-out discussions on measurable attributes.
2. Prepare a 15-min talk on a recent experience in delivering SDM. What was the nature of the decision, how did you structure it, what tools did you use, and how was the process received? The example doesn't have to be fancy or ground-breaking; everyday application of SDM is great.
3. Read the following papers:
Colyvan M, Justus J, Regan HM. 2011. The conservation game. *Biological Conservation* 144:1246-1253.
Keeney RL. 1992. Measuring the achievement of objectives. Pages 99-128 *in* Keeney RL. *Value-focused thinking: A path to creative decisionmaking*. Cambridge, Massachusetts, USA: Harvard University Press.
Monat JP. 2009. The benefits of global scaling in multi-criteria decision analysis. *Judgment and Decision Making* 4:492-508.

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Monday (Utility Theory)

8 – 8:45	Welcome, Announcements, & Introductions	
8:45	Walk to production studio <i>Note: we're trying to arrange for the lectures on Monday and Friday to be filmed, and possibly broadcast live. Interactive distance learning (conference call & webex) will be used throughout the rest of the week, if there is demand.</i>	
9:00 – 10:30	Decision trees & utility theory	Lecture (Runge)
10:30 – 10:45	Break (and return to classroom)	
10:45 – 12:00	Decision trees with utility scales	Exercise
12:00 – 1:00	Lunch	
1:00 – 3:00	Eliciting utility curves	Exercise
3:00 – 3:15	Break	
3:15 – 5:00	Discussion: helping decision makers understand risk	Plenary

Tuesday (Measurable Attributes)

8 – 8:30	Review and insights	
8:30 – 9:30	Measurable attributes	Lecture (Runge)
9:30 – 10:00	Review of generic objectives hierarchy	Plenary
10:00 – 10:15	Break	
10:15 – 12:00	Assembling a library of measurable attributes <i>The goal of this activity is to assemble a library of examples of measurable attributes, categorized by type, and organized under a generic objectives hierarchy.</i>	Breakout Groups
12:00 – 1:00	Lunch	
1:00 – 2:30	Reports from groups	Plenary
2:30 – 2:45	Break	
2:45 – 5:00	<i>Sharing our experiences</i>	Student Presentations

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Wednesday (Multi-criteria Decision Analysis)

8 – 8:30	Review and insights	
8:30 – 9:30	MCDA: global vs. local scales for objective weights	Lecture (Runge)
9:30 – 12:00	Swing & global weighting	Exercises
12:00 – 1:00	Lunch	
1:00 – 2:00	MCDA: the assumption of conditional independence	Lecture (Runge)
2:00 – 3:00	Conditional dependence	Exercises
3:00 – 3:15	Break	
3:15 – 5:00	<i>Sharing our experiences</i>	Student Presentations

Thursday (Economic Approaches)

8 – 8:30	Review and insights	
8:30 – 9:30	Economic approaches to decision analysis	Lecture (Cathy Thomas)
9:30 – 12:00	Contingent valuation & willingness-to-pay	Exercise
12:00 – 1:00	Lunch	
1:00 – 2:00	Time-discounting in objective functions	Lecture (Runge)
2:00 – 3:00	Elicitation of time-preference functions	Exercise
3:00 – 3:15	Break	
3:15 – 5:00	<i>Sharing our experiences</i>	Student Presentations
7:30 – 9:00	Possible <i>Evening Session</i> to continue student presentations	

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Friday (Game Theory)

8– 8:45	Review and insights	
8:45	Walk to studio	
9:00 – 10:30	Game Theory	Lecture (Runge)
10:30 – 10:45	Break (and return to classroom)	
10:45 – 12:00	The SDM Community of Practice Certification and mentoring program Topics for next year's practicum Upcoming opportunities	Plenary Discussion