Community Ecology

Some points: Community ecology uses a lot of models. The goal of this cours is 2 fold 1] Mastery of the concepts and models. 2] Understand how the models are applied in the context of ecosystem management.

Week	Topic	Lecture	Reading
Part I: Fundamentals of Community Ecology			
Week 1	What is an Ecological Community anyway?	1] Definitions, Descriptions 2] Niches and Patterns of Diversity	Mittelbach chap. 1 Velland 1990, Barnabus papers
Week 2	Population Ecology	1] Exponential and Logistic Population Growth 2] Life History,Age-structured Populations	Mittelbach chap. 4 Gotelli chap. 3
Week 3	Predation	1] Predetor-Prey Models, 2] Nonconsumptive effects of predation	Mittelbach chap. 5 Mittelbach p. 113-123, paper
Week 4	Competion	1] Competition Theory and Models 2] Competition in Nature	Mittlebach p.125-142 Mittelbach chap. 8
Week 5	Multualism and Facilitation	1] Theory 2] Mutualism case studies	Mittelbach Chapt. 9 Janzen 1966
Week 6	Ecological Networks	1] Chains, Webs and more 2]Control, Cascades	Mittelbach Chap.10 Mittlebach Chap. 11)
Part II: Complex communities			
Week 7	Metapopulations	1] Population genetics 2]Metapopulations	Book Chaper Mittelbach p. 251-260
Week 8	Metacommunities	1] Tradeoffs and Fugitive species 2] succession	Mittelbach Chap. 11
Week 9	Spatial variability	1] Habitat selection 2] Assembly rules, Neutral theory	Book Chaper Mittelbach p. 260-266, Chap. 13)
Week 10	Temporal Variability	1] Storage and priority effects 2] Distubrance	Mittelbach p.289-304 Fukami 2015
Week 11	Change and stability	1] Equilibrium, alternate stable states 2] Biological complexity and ecosystem stability	Mittelbach p .304-314 Tillman 1999
Week 12	Eco-Evolutionary Dynamics	1] Character displacement 2] Rapid Evolution	Book Chaper paper(s)