**Course Schedule**

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| Day | Lect | Topic | Readings |
| Mon | **1** | What is Ecology? How is it studied? |    |
| Wed | **2** | How does evolution impact ecology? | **Evolutionary Ecology** 1: Evolution and Ecology are Intertwined2: The Logic of Evolution by Natural Selection |
| Fri | **3** | How are genetics, evolution, and management linked? | **Evolutionary Ecology** 3: Genetics and Evolution4: Managing the Evolution of Resistance |
| Mon | ***Labor Day - No class*** |
| Wed | **4** | How do temperature and precipitation affect distribution? How do organisms respond to change? | **Physiological Ecology** 1: Trade-offs and Species Distributions2: Adaptation and Acclimation |
| Fri | **5** | How do organisms maintain their temperature and water budgets? | **Physiological Ecology** 3: Homeostasis |
| Mon | **6** | Why do some plants rely on C3 photosynthesis while others use C4 or CAM? | **Physiological Ecology** 4: Plant Metabolism |
| Wed | **7** | How many different ways can one "win" the game of life? What are demographics? Age pyramids? | **Life History** 1: Life Cycles and Life Histories2: Life-History Parameters |
| Fri | **8** | What are the trade-offs that drive variation in life history strategies? | **Life History** 3: Life Tables and Survivorship Curves4: Trade-Offs and Life-History Evolution |
| Mon | **9** | What drives global patterns in species richness? What can islands tell us about immigration and extinction? | **Biogeography** 1: Species Richness and the Extinction Crisis2: Ecological Biogeography |
| Wed | **10** | How do evolutionary patterns affect species distributions? What drives global biome distribution? | **Biogeography** 3: Historical Biogeography4: Global Patterns in Physical Conditions |
| Fri | **11** | How should the growth of a population that is not limited by resources be modeled? | **Population Growth** 1: Geometric Growth2: Exponential Growth |
| Mon | **12** | How does resource limitation affect population growth? What determines metapopulation persistence? | **Population Growth** 3: Logistic Growth4: Dispersal and Metapopulations |
| Wed | **13** | Why do some populations fluctuate over time? | **Population Growth** 5: Variability in Populations |
| Fri |  | ***EXAM 1*** |

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| Day | Lect | Topic | Readings |
| Mon | **14** | What is resource limitation?How does it affect intraspecific competition? | **Competition**1: Limited Resources and Competition2: Intraspecific Competition |
| Wed | **15** | How can interspecific competition be modeled? Why does environmental complexity matter? | **Competition** 3: Interspecific Competition4: Competition in Complex Environments |
| Fri | **16** | How many ways can two species interact? Why do predator and prey populations cycle? | **Predation, Herbivory, and Parasitism** 1: Natural History of Exploitation2: Predator-Prey Dynamics |
| Mon | **17** | What do Lotka and Volterra have to say about predator-prey interactions? | **Predation, Herbivory, and Parasitism** 3: Lotka-Volterra and Beyond |
| Wed | **18** | Why does it matter how a predator finds its food? What does the Red Queen have to say about parasitism? | **Predation, Herbivory, and Parasitism** 4: Functional Responses to Exploitation5: The Evolutionary Arms Race |
| Fri | **19** | What affects where a wise animal forages? How much time it spends foraging? And what food it gathers? | **Behavioral Ecology** 1: So Many Choices2: Behavior in the Marketplace |
| Mon | **20** | What can you learn from a prison cell? | **Behavioral Ecology** 3: Playing Games |
| Wed | **21** | Why are there so many mating strategies?Why is cooperation common even though it’s costly? | **Behavioral Ecology** 4: Family Matters5: Cooperation |
| Fri | **22** | What is an ecological community? How might it change over time? What happened when Yellowstone burned? | **Community Dynamics** 1: Communities, Disturbance, and Succession |
| Mon | **23** | On wolves, beaver, and trophic cascades.Or, what drives community structure? | **Community Dynamics** 2: Food Chains and Indirect Effects3: Top-Down vs. Bottom-Up Control |
| Wed | **24** | When does the song remain the same? | **Community Dynamics** 4: Community Stability  |
| Fri | **25** | What causes infectious diseases? What determines how a disease spreads? | **How Diseases Spread** 1: Pathogens and Infectious Disease2: Modeling Epidemics |
| Mon | **26** | How can a disease's spread be slowed?Why are vector-borne diseases different?Why does evolution matter? | **How Diseases Spread** 3: Controlling Disease Spread4 & 5: Vector-Borne and Evolving Nature of Disease |
| Wed | **27** | What can ecology tell us about the spread of Lyme Disease? | No readings: case study  |
| Fri | ***EXAM 2*** |

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| Day | Lect | Topic | Readings |
| Mon | **28** | Why do ecosystems need a constant supply of energy? How are primary production and respiration related? | **Ecosystem Ecology** 1: Energy Powers Ecosystems2: Primary Production and Respiration |
| Wed | **29** | Why are there so few predators? | **Ecosystem Ecology** 3: Secondary Production  |
| Fri | **30** | How does energy flow through an ecosystem? What do people gain from ecosystem processes? | **Ecosystem Ecology** 4: Ecosystem Energetics5: Ecosystem Services |
| Mon | **31** | What determines decomposition rates?How do local conditions affect decomposition? | **Decomposition** 1: Decomposition Rates2: Physical Environment |
| Wed | **32** | What is high-quality detritus? How do decomposer organisms affect decomposition? | **Decomposition** 3: Litter Quality4: Decomposer Organisms |
| Fri | **33** | Why do nutrients cycle if energy flows?What are the key components of the C-cycle? Of the P-cycle? | **Nutrient Cycling** 1: Nutrient Cycling Fundamentals |
| Mon | **34** | Who drives the nitrogen cycle and why?What can we learn from small watersheds? | **Nutrient Cycling** 2: Ecosystem-Level Nutrient Cycles  |
| Wed& Fri | ***Thanksgiving Break - No Class*** |
| Mon | **35** | What can nutrient budgets tell you? How have people altered global biogeochemical cycles? | **Nutrient Cycling** 3: Nutrient Budgets4: Global Biogeochemical Cycles |
| Wed | **36** | What's the big deal about temperature?How do we know the world is warming? | **Climate Change** 1: Why Does Climate Change Matter?2: Detecting Climate Change |
| Fri | **37** | How do models help us understand Earth's climate? | **Climate Change** 3: Earth’s Climate and Climate Models |
| Mon | **38** | How do we know that humans are responsible for modern climate change? | **Climate Change** 4: Humans and Climate Change |
| Wed | **39** | What are the consequences of a changing climate? | **Climate Change** 5: Biological Consequences of Climate Change |
| Fri | **40** | Wrap up. |  |

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