

EEB 122b: Principles of Evolution, Ecology and Behavior

Nature and purpose of the course: This course presents the principles of evolution, ecology, and behavior for students beginning their study of biology and of the environment. It discusses the major ideas and results of these fields in a rigorous but non-technical fashion accessible to all Yale College undergraduates. These fields are dynamic and exciting areas energized by recent advances that have significance well beyond the boundaries of their disciplines. The course concentrates on the ideas, mechanisms, processes, and results that should be part of the background and thinking of any biologist.

Lectures: Monday, Wednesday, Friday 11:30-12:20 OML 202

Discussion section: mandatory, one hour per week, times and locations available online
Sections will meet next week (1/17-1/21) for the first time

Instructors:

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Office hours after lecture on Friday or by appointment

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Date	Day	Lecture topic	Reading
		Introduction	
9-Jan	M	The nature of evolution: Selection, inheritance, and history	SH Ch1
11-Jan	W	Basic transmission genetics	SH Appendix
		Evolution: Principles of Microevolution	
13-Jan	F	Adaptive evolution: natural selection	SH Ch2
16-Jan	M	MLK Day: No classes	none
18-Jan	W	Neutral evolution: genetic drift	SH Ch3
20-Jan	F	Evolution as changes in the genetic composition of populations	CH Ch4
23-Jan	M	Mutations and the maintenance of genetic variation	SH Ch5
25-Jan	W	The importance of development in evolution	SH Ch6
27-Jan	F	The expression of variation: reaction norms	SH Ch7
		Evolution: Organismal design for reproductive success	
30-Jan	M	The evolution of sex	SH Ch8
1-Feb	W	Life histories	SH Ch10, KD Ch10
3-Feb	F	Sex allocation	SH Ch10
6-Feb	M	Sexual selection	SH Ch11, KD Ch8
8-Feb	W	Multilevel selection and evolutionary conflict	SH Ch 9
		Behavior	
10-Feb	F	Economic decisions for the foraging individual	KD Ch3
13-Feb	M	Evolutionary Game Theory: Fighting and contests	KD Ch7
15-Feb	W	Mating systems and parental care	KD Ch9
17-Feb	F	Alternative breeding strategies	KD Ch10
20-Feb	M	Selfishness and altruism	KD Ch11
22-Feb	W	Cooperation	KD Ch12 & Ch15
24-Feb	F	Midterm	

