

<u>Week</u>	<u>(Dates)</u>	<u>Topic</u>	<u>Readings</u>
<u>Part I: Major Concepts and Themes</u>			
1	T - Aug 25 Th - Aug 27	Course Overview Variation and its Evolutionary Significance	FRF chap 1,2
2	T - Sep 1 Th - Sep 3	Variation and Heritability Heritability - (Discussion)	FRF chap 2, 3
3	T - Sep 8 Th - Sep 10	Natural Selection and its Measurement Selection Gradients - (Discussion)	FRF chap 3
4	T - Sep 15 Th - Sep 17	Adaptation Adaptation (Discussion)	FRF chap 4
5	T - Sep 22 Th - Sep 24	Phenotypic Plasticity Plasticity - (Discussion) (hand out Essay Assignment #1)	FRF chap 5
6	T - Sep 29 Th - Oct 1	Population Structure Genetic Structure - (Discussion) (Essay # 1 due)	FRF chap 6
7	T - Oct 6 Th - Oct 8	Inbreeding and Outbreeding Inbreeding Depression - (Discussion)	FRF chap 7
<u>Part II: Topical Overviews</u>			
8	T - Oct 13 Th - Oct 15	Age and Size at Maturity Offspring Size and Number Tradeoffs (hand out Essay Assignment # 2)	FRF chaps 8 FRF chap 9
9	T - Oct 20 Th - Oct 22	Why Sex? Why Different Sexes? Sex Ratios and Sex Allocation (Essay # 2 due)	FRF chaps 12 FRF chaps 13
10	T - Oct 27 Th - Oct 29	Mating Systems Sexual Selection	FRF chaps 15 FRF chap 16
11	T - Nov 3 Th - Nov 5	Cooperation and Altruism Foraging Behavior (hand out Essay Assignment # 3, Paper/Proposal Topic due)	FRF chap 17 FRF chap 18

12	T - Nov 10 Th - Nov 12 (Nov 10)	Ecological Specialization and Generalization Character Displacement (Essay # 3 due, hand out for reviews)	FRF chap 14 FRF chap 20
13	T - Nov 17 Th - Nov 19	Parasite-Host Interactions Plant-Herbivore Interactions (Essay # 3 reviews due, preliminary outline/citation list due)	FRF chap 22 FRF chap 23
14	(Nov 24, 26)	Thanksgiving Break – No Class	
15	T – Dec 1 Th – Dec 3 (Dec 1)	Mutualisms Geographic Dynamics of Coevolution (First draft of project of due, hand out for review)	FRF chap 24 FRF chap 25
16	T - Dec 8 Th – Dec 10	Final Project Presentations Final Project Presentations (Reviews of projects due)	FRF chap 27 FRF chap 28
17	(Dec 15, 17)	Finals Week (Final projects due Dec 17)	

Readings for discussions are from the primary literature or reviews from books and periodicals. Readings include both recent and classic papers. After week 4, a pair of students will be responsible for choosing one or more additional papers and leading the discussion each week. Papers will be made available in a notebook in the photocopy room (LS 235), or emailed as a .pdf attachment to the class. Papers should be available at least two days prior to the date of the discussion. Come prepared to summarize the papers and to discuss their merits, deficiencies and to pose further questions suggested by the readings.

2 (Sep 4) Variation and Heritability

- *Galen, C. 1996. Rates of floral evolution: adaptation to bumblebee pollination in an alpine wildflower, *Polemonium viscosum*. *Evol.* 50:120-125.
- *Reimer O., and M. Tedengren. 1996. Phenotypical improvement of morphological defences in the mussel *Mytilus edulis* induced by exposure to the predator *Asterias rubens*. *Oikos* 75: 383-390.

3 (Sep 11) Natural Selection and its Measurement

- *Arnold, S. J. and M. J. Wade. 1984. On the measurement of natural and sexual selection: applications. *Evolution* 38:720-734.
- #Arnold, S. J. and M. J. Wade. 1984. On the measurement of natural and sexual selection: theory. *Evolution* 38:709-719.
- #Lande, R., and S. J. Arnold. 1983. The measurement of selection on correlated characters. *Evolution* 37:1210-1226.
- #Endler, J. A. 1986. Methods for the detection of natural selection in the wild, Chapter 3: In Natural Selection in the Wild (pp. 52-96). *Monographs in Population Biology*, 21. Princeton University Press, Princeton, NJ.

4 (Sep 18) Adaptation

- *Williams, G.C. 1966. Introduction. Pp. 3-19 (Chapter 1) in *Adaptation and natural selection: a critique of some current evolutionary thought*. Princeton U. Press, Princeton, NJ.
- *Burian, R. M. 1983. Adaptation. Pp. 287-314 in *Dimensions of Darwinism: themes and counterthemes in twentieth-century evolutionary theory*, M. Green (ed.). Cambridge U. Press, Cambridge, UK.
- #Gould, S.J. and R.C. Lewontin. 1979. The spandrels of San Marco and the Panglossian paradigm: a critique of the adaptationist programme. *Proc. R. Soc. Lond. B* 205:581-598.

5 (Sep 25) Phenotypic Plasticity

- *Dudley, S. A., and J. Schmitt. 1996. Testing the adaptive plasticity hypothesis: Density-dependent selection on manipulated stem length in *Impatiens capensis*. *Am. Nat.* 147:445-465.

6 (Oct 2) Population Structure

- *Hamrick, J. L., and M. J. W. Godt. 1996. Effects of life history traits on genetic diversity in plant species. *Phil. Trans. Roy. Soc. Lond. B* 351:1291-1298.

7	(Oct 9)	Inbreeding and Outbreeding
8	(Oct 16)	Age and Size at Maturity/ Senescence
9	(Oct 23)	Offspring Size and Number Tradeoffs
10	(Oct 30)	Why Sex? Sex Allocation
11	(Nov 6)	Mating Systems and Sexual Selection
12	(Nov 13)	Foraging and Movement
13	(Nov 20)	Interspecific Interactions and Coevolution I
14	(Nov 27)	Thanksgiving Break – No Class
15	(Dec 4)	Interspecific Interactions and Coevolution II
16	(Dec 11)	Oral Presentation of Proposals
17	(Dec 18)	Finals Week

Sign Up for Discussion Leaders (2 per topic). I will assign one paper and the discussion leaders will pick 1-2 more for the class to read and discuss. Leaders should come prepared to elicit discussion, pose further questions and analyze the merits and deficiencies of the papers.

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12 (Nov 13) Foraging and Movement

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14 (Nov 27) Thanksgiving Break – No Class

15 (Dec 4) Interspecific Interactions and Coevolution II

16 (Dec 11) Oral Presentation of Proposals

17 (Dec 18) Finals Week