

# Biology 2 - Spring 2009

## Professor:

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## TA

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Meeting time: Block H+ (Tuesday and Thursday 1:30 - 2:45)

DATE	SCHEDULE
Jan. 15	<b>Introduction</b> 1) Mechanics of Course 2) What is Science? Assigned Reading: None
Jan. 20	<b>Evolution</b> Topics: 1) What is Life? 2) Evolution Assigned Reading: Mader pgs. 2-5, 10-14, 549-569, 572 (chapter 27) (skim pp 559), 659, 671, 687
Jan. 22	<b>Discussion: Animal Rights</b> Sample Questions: 1) Why Use Animals in Research? 2) Who Should Determine What Constitutes Acceptable Animal Use? 3) What Role Should Animal Use Play in Society? Assigned Reading: Rowan, Scientific American, Feb. 1997 pgs. 79-93.
Jan. 27	<b>Human Physiology</b> Topics: 1) The Skeletal, Circulatory, and Muscular Systems 2) Role of Hormones in Development and Internal Communication Assigned Reading: Mader pgs. 202-3, 209-11, 218-221, 224-26, 232-35, 369-380, 388-91, 398-399, 405-406

Jan. 29	<p><b>Discussion: Performance-Enhancing Drugs</b></p> <p>Sample Questions:</p> <ol style="list-style-type: none"> <li>1) What are Steroid's Health Risks?</li> <li>2) Should Steroid Use Be Banned?</li> <li>3) What, If Anything, Should Society Do About Steroids?</li> </ol> <p>Assigned Reading:</p> <p>Video: Bigger, Stronger, Faster (106 min) – group showings on Tue. Jan 27 (9:00 pm) and Wed. Jan. 28 (9:00 pm) in Tisch room 304</p>
Feb. 3	<p><b>Neurobiology</b></p> <p>Topics:</p> <ol style="list-style-type: none"> <li>1) Structure of the Nervous System</li> <li>2) Biological Differences Related to Sex</li> </ol> <p>Assigned Reading:</p> <p>Mader pgs. 319-321, 324-340 (Chapter 17)</p>
Feb. 5	<p><b>Discussion: Biological Basis of Homosexuality</b></p> <p>Sample Questions:</p> <ol style="list-style-type: none"> <li>1) What is Homosexuality</li> <li>2) Is it Beneficial to Search for a Biological Basis?</li> </ol> <p>Assigned Reading:</p> <p>Video: Understanding Sex (51 min) – group showings on Tue. Feb. 3 (9:00 pm) and Wed. Feb. 4 (9:00 pm) in Tisch room 304</p>
Feb. 10	<p><b>FIRST EXAM</b></p> <p>Covering first 3 topics</p>
Feb. 12	<p><b>Human Reproduction</b></p> <p>Topics:</p> <ol style="list-style-type: none"> <li>1) The Male and Female Reproductive System</li> <li>2) How Various Contraceptive Methods Work</li> </ol> <p>Assigned Reading:</p> <p>Mader pgs. 417-429</p>
Feb. 17	<p><b>Discussion: Birth Control</b></p> <p>Sample Questions:</p> <ol style="list-style-type: none"> <li>1) Which Methods are Preferable?</li> <li>2) Should We Fund Research Into Other Methods?</li> </ol> <p>Assigned Reading:</p> <p>Goldberg, Boston Globe, 282(1), May 26, 2008, pgs. E1-E3  Potts, The Economist, October 13, 2001, pgs. 73-74 and 77</p>
Feb. 24	<p><b>Human Fertilization</b></p> <p>Topics:</p> <ol style="list-style-type: none"> <li>1) Meiosis</li> <li>2) Conception</li> <li>3) Methods of Assisted Conception</li> </ol> <p>Assigned Reading:</p> <p>Mader pgs. 89-93, 95-96, 412, 440-441</p>

Feb. 26	<p><b>Discussion: Artificial /Assisted Conception</b></p> <p>Sample Questions:</p> <ol style="list-style-type: none"> <li>1) Who Controls Reproductive Choice?</li> <li>2) How High a Priority Should be Placed on These Methods?</li> </ol> <p>Assigned Reading:</p> <p>Roan, LATimes, Oct. 6, 2008  Goodman, Boston Globe, April 11, 2008  Orenstein, NYTimes, July 20, 2008  Stein, Washinton Post, Aug. 13, 2008</p>
Mar. 3	<p><b>Human Development</b></p> <p>Topics:</p> <ol style="list-style-type: none"> <li>1) Gastrulation &amp; Neurolation</li> <li>2) Birth</li> </ol> <p>Assigned Reading:</p> <p>Mader pgs. 445-451, 453-464</p>
Mar. 5	<p><b>Discussion: Abortion</b></p> <p>Sample Questions:</p> <ol style="list-style-type: none"> <li>1) What Constitutes Human Life?</li> <li>2) Should Abortion Remain Legalized?</li> </ol> <p>Assigned Reading:</p> <p>Paul, NYTimes, Feb. 10, 2008</p>
Mar. 10	<p><b>Genetic Testing</b></p> <p>Topics:</p> <ol style="list-style-type: none"> <li>1) DNA and Chromosomes</li> <li>2) Genotypes vs. Phenotypes</li> </ol> <p>Assigned Reading:</p> <p>Mader pgs. 471-485, 522, 525-531, 534-545 (Chaps 23 and 26)</p>
Mar. 12	<p><b>Discussion: Genetic Testing</b></p> <p>Sample Questions:</p> <ol style="list-style-type: none"> <li>1) Should Test Results be Available to Insurance Agencies?</li> <li>2) Should Incurable Diseases Have Tests?</li> </ol> <p>Assigned Reading:</p> <p>Video: After Darwin: Genetics, Eugenics, and the Human Genome (2 parts: 49 &amp; 46 min) - group showings on Tue. Mar. 10 (9:00 pm) and Wed. Mar. 11 (9:00 pm) in Tisch room 304</p>
Mar. 24	<p><b>Immune System</b></p> <p>Topics:</p> <ol style="list-style-type: none"> <li>1) Cellular vs. Hormonal Immunity</li> <li>2) How AIDS Kills</li> </ol> <p>Assigned Reading:</p> <p>Mader pgs. 229-231, 239-255 (Chapter 13), 431-436, 439</p>
Mar. 26	<p><b>SECOND EXAM</b></p> <p>Covering topics 4-7</p>

Mar. 31	<p><b>Discussion: AIDS</b>  Sample Questions:  1) What Should be Done to Halt the Spread of AIDS?  2) Should Risky Treatments be Available to AIDs Patients?  Assigned Reading:  Watkins, Scientific American, November 2008, pgs 68-76  Stevenson, Scientific American, November 2008, pgs. 78-83  Gostin &amp; Hankins, JAMA, December 3, 2008, pgs. 2539-2541</p>
Apr. 2	<p><b>Infectious Organisms</b>  Topics:  1) Viral Replication  2) Types of Disease-Causing Organisms  Assigned Reading:  Mader pgs. 236, 256, 572, 575-583, 588-590, 595-602, 632-635, 634</p>
Apr. 7	<p><b>Discussion: Emerging Diseases</b>  Sample Questions:  1) How Big a Risk are These?  2) Can We Prevent Antibiotic Resistance in Old Diseases?  3) What Steps Should Be Taken to Fight These?  Assigned Reading:  Gibbs &amp; Soares, Scientific American, Nov. 2005 pgs. 44-54  Fonseca &amp; Ravishankar, American Scientist, Nov/Dec 2007, pgs. 494-501  Groopman, New Yorker, August 11, 2008,  Steinhauer, New York Times, March 21, 2008</p>
Apr. 9	<p><b>Life in the Environment</b>  Topics:  1) Ecosystems  2) Biodiversity  3) Conservation  Assigned Reading:  Mader pgs.16, 127, 161, 184, 622, 646, 709-720 , 745-763</p>
April 14	<p><b>Discussion: Environmentalism</b>  Sample Questions:  1) Are Species and Habitats Worth Saving?  2) Is Conservation Merely an Indulgence of Wealthy Societies?  3) Do We Have the Right or Obligation to Enforce Conservation?  Assigned Reading:  Marston, The Sciences, Nov/Dec 1998 pgs. 11-14  Kareiva &amp; Marvier, Scientific American, Oct. 2007, pgs. 50-57  Marks, Scientific American, March 2007, pgs. 66-71</p>

Apr. 16	<p><b>Population Biology</b></p> <p>Topics:</p> <ol style="list-style-type: none"> <li>1) The Dynamics of Population Growth</li> <li>2) Carrying Capacities</li> </ol> <p>Assigned Reading:</p> <p>Mader pgs. 144, 691-705</p>
Apr. 21	<p><b>Discussion: Population Pressures</b></p> <p>Sample Questions:</p> <ol style="list-style-type: none"> <li>1) What, if Anything, Should be Done to Maintain or Reduce the World's Population?</li> <li>2) What is a Suitable/Acceptable Standard of Living?</li> </ol> <p>Assigned Reading:</p> <p>Wilson, Scientific American, Feb. 2002, pgs. 82-91</p> <p>Diamon, New York Times, Jan. 2, 2008</p> <p>Shorto, New York Times Magazine, June 29, 2008, pgs. 34-41, 68-71</p>
Apr. 23	<p><b>THIRD EXAM</b></p> <p>Covering topics 8-11 (last four topics)</p>