

Biology 2 - Spring 2011

Professor:

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Office hours: Wednesday 2:45-3:30

Or by appointment

Meeting time: Block G+ (Monday and Wednesday 1:30 - 2:45)

DATE	SCHEDULE
Jan. 24	Introduction 1) Mechanics of Course 2) What is Science? Assigned Reading: None
Jan. 26	Evolution Topics: 1) What is Life? 2) Evolution Assigned Reading: Mader pgs. 2-5, 10-15, 541-550, 553-561 (chapter 27), 565, 658, 666
Jan. 31	Discussion: Animal Rights 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. Holland, The Chronicle of Higher Education, Nov. 7, 2010
Feb. 2	Human Physiology Topics: 1) The Skeletal, Circulatory, and Muscular Systems 2) Role of Hormones in Development and Internal Communication Assigned Reading: Mader pgs. 198-199, 207-208, 210, 213-217, 220-222, 228-231, 367-378, 386-90, 396-397, 404, 410

Feb. 7	<p>Discussion: Performance-Enhancing Drugs</p> <p>Sample Questions:</p> <ol style="list-style-type: none"> 1) What are Steroid's Health Risks? 2) Should Steroid Use Be Banned? 3) What, If Anything, Should Society Do About Steroids? <p>Assigned Reading:</p> <p>Video: Bigger, Stronger, Faster (106 min)</p>
Feb. 9	<p>Neurobiology</p> <p>Topics:</p> <ol style="list-style-type: none"> 1) Structure of the Nervous System 2) Biological Differences Related to Sex <p>Assigned Reading:</p> <p>Mader pgs. 316-317, 320-338 (Chapter 17)</p>
Feb. 14	<p>Discussion: Biological Basis of Homosexuality</p> <p>Sample Questions:</p> <ol style="list-style-type: none"> 1) What is Homosexuality 2) Is it Beneficial to Search for a Biological Basis? <p>Assigned Reading:</p> <p>Video: Understanding Sex (51 min)</p>
Feb. 16	<p>FIRST EXAM</p> <p>Covering first 3 topics</p>
Feb. 23	<p>Human Reproduction</p> <p>Topics:</p> <ol style="list-style-type: none"> 1) The Male and Female Reproductive System 2) How Various Contraceptive Methods Work <p>Assigned Reading:</p> <p>Mader pgs. 415-427</p>
Feb. 24	<p>Discussion: Birth Control</p> <p>Sample Questions:</p> <ol style="list-style-type: none"> 1) Which Methods are Preferable? 2) Should We Fund Research Into Other Methods? <p>Assigned Reading:</p> <p>Gibbs, Time Magazine, May 3, 2010</p> <p>Moyer, Scientific American, Sept. 20, 2010</p>
Feb. 28	<p>Human Fertilization</p> <p>Topics:</p> <ol style="list-style-type: none"> 1) Meiosis 2) Conception 3) Methods of Assisted Conception <p>Assigned Reading:</p> <p>Mader pgs. 89-92, 94-96, 438-439</p>

Mar. 2	<p>Discussion: Artificial /Assisted Conception</p> <p>Sample Questions:</p> <ol style="list-style-type: none"> 1) Who Controls Reproductive Choice? 2) How High a Priority Should be Placed on These Methods? <p>Assigned Reading:</p> <p>Bennet, Boston Globe, Oct 24 2010 Cohen, The Atlantic, Dec. 2002 Russell, The Atlantic, Oct. 2010 Saul, NYTimes, Oct. 11 2009 Westphal, Boston Globe, Aug. 8 2010</p>
Mar. 7	<p>Human Development</p> <p>Topics:</p> <ol style="list-style-type: none"> 1) Gastrulation & Neurolation 2) Birth <p>Assigned Reading:</p> <p>Mader pgs. 439, 443-449, 452-462</p>
Mar. 9	<p>Discussion: Abortion</p> <p>Sample Questions:</p> <ol style="list-style-type: none"> 1) What Constitutes Human Life? 2) Should Abortion Remain Legalized? <p>Assigned Reading:</p> <p>Scott Gilbert Audio Lecture and Slideshow</p>
Mar. 14	<p>Genetic Testing</p> <p>Topics:</p> <ol style="list-style-type: none"> 1) DNA and Chromosomes 2) Genotypes vs. Phenotypes <p>Assigned Reading:</p> <p>Mader pgs. 469-484, 487-490, 492-498, 520</p>
Mar. 16	<p>Discussion: Genetic Testing</p> <p>Sample Questions:</p> <ol style="list-style-type: none"> 1) Should Test Results be Available to Insurance Agencies? 2) Should Incurable Diseases Have Tests? <p>Assigned Reading:</p> <p>Video: After Darwin: Genetics, Eugenics, and the Human Genome (2 parts: 49 & 46 min)</p>
Mar. 28	<p>Immune System</p> <p>Topics:</p> <ol style="list-style-type: none"> 1) Cellular vs. Hormonal Immunity 2) How AIDS Kills <p>Assigned Reading:</p> <p>Mader pgs. 224-227, 235-252, 429-434, 437, 684</p>
Mar. 30	<p>SECOND EXAM</p> <p>Covering topics 4-7 (Immune System will be covered in last exam)</p>

Apr. 4	<p>Discussion: AIDS Sample Questions: 1) What Should be Done to Halt the Spread of AIDS? 2) Should Risky Treatments be Available to AIDs Patients?</p> <p>Assigned Reading: Watkins, Scientific American, November 2008, pgs 68-76 Wilson, New Scientist, Feb. 19, 2009 Gostin & Hankins, JAMA, December 3, 2008, pgs. 2539-2541 McNeil, NYTimes, Nov. 23, 2010</p>
Apr. 6	<p>Infectious Organisms Topics: 1) Viral Replication 2) Types of Disease-Causing Organisms</p> <p>Assigned Reading: Mader pgs. 231, 252, 565, 569-576, 580-586, 590-596, 627-629, 635</p>
Apr. 11	<p>Discussion: Emerging Diseases 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?</p> <p>Assigned Reading: Wolfe, Scientific American, April 2009 Branswell, Scientific American, Jan. 2011 Allen, Washington Post, Sept. 27 2010 Marsa, Discover, Dec. 2010</p>
Apr. 13	<p>Life in the Environment Topics: 1) Ecosystems 2) Biodiversity 3) Conservation</p> <p>Assigned Reading: Mader pgs. 14, 30, 41, 180, 428, 616, 641, 705-716, 737, 741-761</p>
April 20	<p>Discussion: Environmentalism 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?</p> <p>Assigned Reading: Marston, The Sciences, Nov/Dec 1998 pgs. 11-14 Angier, NYTimes, Sept. 29, 2009 Budiansky, NYTimes, Aug. 19 2010 Alsop, Smithsonian, Nov. 2009 Wasser, Scientific American, July 2009</p>

Apr. 25	<p>Population Biology</p> <p>Topics:</p> <ol style="list-style-type: none"> 1) The Dynamics of Population Growth 2) Carrying Capacities <p>Assigned Reading:</p> <p>Mader pgs. 138, 689-701</p>
Apr. 27	<p>Discussion: Population Pressures</p> <p>Sample Questions:</p> <ol style="list-style-type: none"> 1) What, if Anything, Should be Done to Maintain or Reduce the World's Population? 2) What is a Suitable/Acceptable Standard of Living? <p>Assigned Reading:</p> <p>Brown, Scientific American, May 2009 Kunzig, National Geographic, Jan 2011 Fishman, NYTimes Magazine, Oct. 17 2010</p>
May. 2	<p>THIRD EXAM</p> <p>Covering topics 8-11 (last four topics)</p>