

# HUMAN BIOLOGY, SPRING 2009

## BL 216 LECTURE SYLLABUS

**Meeting Time and Place:** Lecture—Monday and Wednesday 2:30–3:45 pm in LOY 14. Laboratory—Wednesday 4:00-6:40pm in SCI 210 and/or SCI 206.

**Instructor:** Dr. Michael Ghedotti, Mailbox in 215 SCI, e-mail: [mghedott@regis.edu](mailto:mghedott@regis.edu) (Office hours will be announced in class.) - Dr. Joan Betz, in 215 SCI, e-mail: [jbetz@regis.edu](mailto:jbetz@regis.edu) will be assisting with the lecture and lab classes,

### Required Lecture Text:

| Mader, S. S. 2008. *Human Biology, Tenth Edition*. McGraw Hill Higher Education.

**Course Goals:** The lecture course (BL 216) introduces students to science in the context of the human organism. Develops student knowledge of the biology and bioethical issues associated with scientific understanding of human disease, genetics, and biotechnology.

**Course Objectives:** As a result of taking this course students should be able to...

- generally explain how science differs from other ways of knowing.
- define the major terms used in human biology.
- explain the major organizing concepts in human biology.
- recognize the social and ethical relevance of content covered in human biology, notably ethical issues associated with biotechnology.

### Grading for BL 216:

Your grade for the 3 SH lecture portion of the course will be determined as follows:

Quizzes (9 quizzes, <b>lowest 2 dropped</b> ; 7 at 2% each).....	14%	140 pts.
Disease or Disorder Paper ( <b>including draft &amp; revision</b> ) .....	17%	170 pts.
Exam 1 .....	10%	100 pts.
<i>Comprehensive</i> Exam 2 .....	15%	150 pts.
<i>Comprehensive</i> Exam 3.....	15%	150 pts.
<i>Comprehensive</i> Final Exam .....	25%	250 pts.
<b>Total</b>	<b>100%</b>	<b>1000 pts.</b>

**Textbook Reading Quizzes:** Students will take nine quizzes that will cover a textbook chapter that the students should read beforehand. These quizzes seek to encourage students to read, review, and learn general material from the textbook before it is covered in the classroom. The lowest two will be dropped from the student's grade. The two dropped quizzes include those missed for excused or unexcused absence.

**Disease/Disorder Paper:** Students will complete a paper based on academic research supporting a clear thesis that explains the biological causes, symptoms, treatment, and the ethical issues associated with a disease or disorder of the student's choice. This paper provides students with an opportunity to learn about a disease or disorder of relevance to the student. A complete first draft will be due early in the semester and the revised final draft will be due near the end of the semester. The first draft may **NOT** be turned in after the scheduled due date, and will be averaged out of the student's grade if the absence is excused and an excused absence form is completed. This disease or disorder chosen by the student also will be the subject of a short student presentation in the laboratory.

**Lecture Examinations:** Exams ensure and encourage students to synthesize and learn the course material. Exams also are the primary means of assessment of this learning. All examinations are comprehensive. However, every exam will emphasize material since the last exam. Examinations 1-3 may **NOT** be taken after their scheduled dates. If exams 1-3 are missed because of an excused absence and an excused absence form is filled out, then the missed exam will be averaged out of the student's grade.

**Grading Scale**—The percent grading scale for both lab and lecture will be as follows. (The instructor retains the right to lower the grade boundaries of the final class grades based on overall class performance. In no instance will any student be given a higher grade independent of the grade scale applied to the class as a whole.)

<b>A</b> = 100–92.50	<b>B-</b> = 82.49–79.50	<b>D+</b> = 69.49–66.50
<b>A-</b> = 92.49–89.50	<b>C+</b> = 79.49–76.50	<b>D</b> = 66.49–62.50
<b>B+</b> = 89.49–86.50	<b>C</b> = 76.49–72.50	<b>D-</b> = 62.49–59.50
<b>B</b> = 86.49–82.50	<b>C-</b> = 72.49–69.50	<b>F</b> = <59.49

**Late Assignments:** No assignments will be accepted late. Excused assignments will be averaged out.

**Possible Grading Inaccuracies:** If you think that something was mistakenly graded as incorrect, please bring this to your instructor's attention. Wait at least one day (a "cooling off" period) and resubmit the test or outline to your instructor with a brief written explanation of why you think the grading was in error. No grading re-consideration requests will be accepted after the final exam.

**Putting Your Name on Assignments:** It is the student's responsibility to put her/his first and last name on every outline and examination. Turning in an assignment or examination without a name will result in a 0% grade for that assignment.

**Attendance:** Attendance at lectures is expected and the instructor may take attendance. Exams or quizzes may *NOT* be taken before or after their scheduled date.

**Excused Absence:** Serious illness documented with a note from a health care provider (*not* a regularly scheduled appointment), a death in the family, jury duty, required appearance as a legal witness, and NCAA athletic/forensic competition are reasons for excused absences. Absences due to oversleeping, vacations, parties, hangovers, forgetfulness, arrest, or police detention for misconduct are unexcused absences. Whether any other absences are excused or unexcused is entirely at the discretion of the instructor. A final exam *missed for an excused absence* will be rescheduled. Other assignments or exams missed due to an excused absence will be averaged out of your grade after a completed ***excused assignment form*** with attached documentation has been turned in and verified. A missed quiz will be the one dropped reading quiz. Reading quizzes will only be averaged out of a student's grade if the student has been unable to access a computer and course materials for two weeks or more.

**Absence for Athletic/Forensic Competition:** Members of NCAA athletic teams or forensic team members who must miss an exam or deadline for competition, **MUST:** 1) Present the instructor with an official schedule provided by your coach (with the days to be missed identified) during the first 10 days of the semester, and 2) notify the instructor with a completed ***excused assignment form*** before the day that will be missed. If you do not follow this procedure any absence is unexcused.

**Parental Contact with the Instructor:** Please bring any problems or concerns you have to the instructor directly. Because of *federal* privacy laws your instructor can discuss your grades or attendance with your parent/guardian *only* if you have signed a waiver on file in the Dean's office. Your instructor *will not* discuss your course grades with your parents without informing you, and **your instructor will disclose the nature and content of any discussion with your parent to you.**

**Disability Statement:** If you have a documented disability that may require academic adjustments for this course, or you suspect that you may have a disability, please contact Joie Williams, Director of Disability Services (303.458.4941, or [mbwillia@regis.edu](mailto:mbwillia@regis.edu)). If possible, contact Disabilities Services (Coors Life Directions Center 118) at the beginning of the semester, if possible, so that you can receive accommodations for the complete semester since accommodations are not retroactive.

**Inappropriate Academic Conduct:** Inappropriate academic conduct includes copying assignments, plagiarism, and falsifying data as well as cheating on exams. If inappropriate academic conduct occurs, the consequences will be severe, *likely* resulting in ***failure of the course*** (grade = F) and minimally will result in a 0% score on the assignment/quiz/exam. The level of punishment between these extremes is at the discretion of the instructor based on the severity of the offense.

**Plagiarism** – The use of another writer's words or ideas without using proper documentation to credit the other writer. (This includes drafts as well as final papers.)

**Cellular Phones & Blackberries:** Turn them off during the class period.



**Schedule and anticipated lecture topics:** The due dates are fixed and the lecture topics are estimates.

Monday	Tues.	Wednesday	Thurs.	Fri.
<b>Jan. 12</b> Intro. to Human Biology & Science Chapter 1 pp. 1-15	<b>13</b>	<b>14</b> Science & Basic Chemistry Chapter 2 pp. 20-23 <b>LAB 1</b> – Science & Microscopes	<b>15</b>	<b>16</b>
<b>19</b> Martin Luther King Jr. Day	<b>20</b> Add-Drop Ends	<b>21</b> The Chemistry of Water Chapter 2 pp. 24-27 <b>LAB 2</b> – Solutions, Acids, & Bases	<b>22</b>	<b>23</b>
<b>26</b> <b>Chapter 2 Reading Quiz</b> The Molecules of Life Chapter 2 pp. 27-38	<b>27</b>	<b>28</b> Understanding Nutrition Labels Chapter 2 p. 31 <b>LAB 3</b> – The Molecules of Life	<b>29</b>	<b>30</b>
<b>Feb. 2</b> <b>- LECTURE EXAM 1 -</b>	<b>3</b>	<b>4</b> Cell Structure Ch. 3 pp. 42-45, Ch. 7 pp. 122-123 <b>LAB 4</b> – Cells	<b>5</b>	<b>6</b>
<b>9</b> <b>Chapter 3 Reading Quiz</b> Cell Membranes and Organelles Chapter 3 pp. 46-52	<b>10</b>	<b>11</b> Science & History: The Discovery of DNA <b>LAB 5</b> – Diffusion and Osmosis	<b>12</b>	<b>13</b>
<b>16</b> <b>First Draft of Disease Paper Due</b> Cellular Respiration and Enzymes Chapter 3 pp. 53-56	<b>17</b>	<b>18</b> Cellular Resp. and Exercise Chapter 3 pp. 53-56 <b>LAB 6</b> – Enzymes	<b>19</b>	<b>20</b>
<b>23</b> <b>Ch. 4 Reading Quiz (pp. 61-70 only)</b> Human Tissues Chapter 4 pp. 61-70	<b>24</b>	<b>25</b> <b>COMPREHENSIVE</b> <b>- LECTURE EXAM 2 -</b> <b>LAB 7</b> – <b>- LAB EXAM 1 -</b>	<b>26</b>	<b>27</b>
<b>Mar. 2</b> <b>Spring Break Week</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>9</b> <b>Ch. 5 Reading Quiz</b> Cardiovascular System I Chapter 5 pp. 86-91	<b>10</b>	<b>11</b> Cardiovascular System II Chapter 5 pp. 92-101 <b>LAB 8</b> – Human “Guts” Overview	<b>12</b>	<b>13</b>
<b>16</b> <b>Ch. 6 Reading Quiz</b> Blood I Chapter 6 pp. 106-113	<b>17</b>	<b>18</b> Blood II Chapter 6 pp. 114-117 <b>LAB 9</b> – Cardiovascular System	<b>19</b>	<b>20</b>
<b>23</b> <b>Ch. 9 Reading Quiz</b> Respiratory System Chapter 9 pp. 169-176, 180-183	<b>24</b>	<b>25</b> <b>COMPREHENSIVE</b> <b>- LECTURE EXAM 3 -</b> <b>LAB 10</b> – Bioethics	<b>26</b>	<b>27</b>
<b>30</b> <b>Ch. 20 Reading Quiz</b> Genetic Inheritance I Chapter 20 pp. 421-435	<b>31</b>	<b>Apr. 1</b> Genetic Inheritance II Chapter 20 pp. 436-439 <b>LAB 11</b> – Human Inheritance	<b>2</b>	<b>3</b>
<b>6</b> <b>Ch. 21 Reading Quiz</b> DNA Biology Chapter 21 pp. 443-453	<b>7</b>	<b>8</b> DNA Technology Chapter 20 pp. 454-464 <b>LAB 12</b> – Genetic Engineering	<b>9</b>	<b>10</b> Good Friday
<b>13</b> <b>Ch. 19 Reading Quiz</b> Biology of Cancer Chapter 19 pp. 403-407	<b>14</b>	<b>15</b> Causes & Treatment of Cancer Chapter 19 pp. 408-417 <b>LAB 13</b> – <b>Disease Presentations</b>	<b>16</b>	<b>17</b>
<b>20</b> <b>Final Draft of Disease Paper Due</b> Human Health, Biotechnology, and Bioethics	<b>21</b>	<b>22</b> Final Review & Discussion <b>LAB 14</b> – <b>Disease Presentations</b>	<b>23</b>	<b>24</b>

BL 216 FINAL EXAM 1:15PM MON. APRIL 27<sup>TH</sup>

BL 217 LAB FINAL EXAM 1:15PM WEDNS. APRIL 29<sup>TH</sup>

## Biology 216 Human Biology DISEASE OR DISORDER PAPER

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A 5-10 page (+ references/literature cited) paper is due on first as a complete draft and then as a final draft during the second to last class period. You will choose a particular human disease or disorder to research. This disease or disorder will be the basis for both your required paper and your required presentation for laboratory. This paper will cover the **causes, symptoms, available treatments, and ethical considerations** associated with a human disease or disorder.

### Content Requirements for Paper

The paper must be well written, must explain what is known about the biological nature of the disease or disorder, must identify symptoms, and must outline specific treatments that exist. Some specific requirements are outlined below:

- Clearly state a thesis that is supported by the following information (probably concerning the social or ethical considerations).
- Clearly explain the **BIOLOGICAL basis** of the disease or disorder in your paper.
- Clearly state **symptoms** associated with the disease or disorder.
- Clearly describe **current treatments and possible future avenues of research**.
- Identify any important **social or ethical considerations associated with the disorder**.
- Include a **references/literature cited section**. Use APA or “Biological” style.

### Style and Basic Writing Requirements for Paper

- Must be well organized with all parts supporting a clearly stated thesis.
- Must be clear and concise. Avoid wordiness and redundancy.
- Must be grammatically correct and use words correctly. (-2% for each grammatical or word use error)

### Specific Format Requirements for Paper

- Papers must be typed or word processed and stapled. *-Otherwise they will not be accepted-*
- Paper must have margins between 3/4 and 1 1/4 inches. *-20% off if larger margins-*
- Paper must be double spaced or space and a half. *-20% off if not appropriately spaced-*
- Must have a font size of from 10-12 point and be in a reasonable font face (e.g., Times, Times New Roman, Palatino). *-20 % off if inappropriate font size or style-*
- Must be **within the page limits EXCLUDING** the references section (5-10 pages for papers). The minimum length is the length in **FULL** pages. *-20% off if inappropriate length-*
- Must include references/literature cited section. *-30% off if absent-*
- Literature must be cited in text and in the references/literature cited section in either APA or “Biological” format. *-2% off for each deviation from format-\**
- You will need to refer to and appropriately cite as references a minimum of six (6) **ACADEMIC SOURCES**. You may use non-academic sources (beyond the minimum six academic sources) if you wish to emphasize a point of popular conception or popular culture. *-10% off for each missing academic source below the minimum requirement-*
- You must use words correctly, in a manner consistent with each word’s definition. You must also use correct grammar. *-2% off for each error-*

## **BL 216 Most of the Content of Each of the Monday Reading Quizzes**

Not that not all the content of each quiz is provided. Students should read to prepare for the unknown questions.

### **Chapter 2 (Chemistry of Life) Quiz**

- This quiz will ask students to identify the following molecules by name: H<sub>2</sub>O, CO<sub>2</sub>, H<sup>+</sup>, OH<sup>-</sup>, C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>.
- This quiz will ask students to define the following BIOLOGICAL/CHEMICAL term, Organic molecule.
- This quiz will ask students to name the basic subunits, name two examples, and the function of the following macromolecules: Carbohydrate, Lipid (no common subunits for lipids), Protein, and Nucleic acid.

### **Chapter 3 (Cell Structure and Function) Quiz**

- This quiz will ask students to sketch and label a generalized human/animal cell.
- This quiz will ask students to define the following BIOLOGICAL/CHEMICAL terms, Diffusion, Osmosis.
- This quiz will include a short question concerning other content in the chapter.

### **Chapter 4 (Organization and Regulation of Body Systems) Quiz**

- This quiz will ask students to define the following tissue types, Connective tissue, Epithelial tissue, Muscle tissue, Nervous tissue.
- This quiz will include a short question concerning other content in the chapter (up to page 70).

### **Chapter 5 (Cardiovascular System: Heart and Blood Vessels) Quiz**

- This quiz will ask students to briefly explain the biological basis of the following human health problems, Aneurysm, Heart Attack, Stroke.
- This quiz will ask students to generally and concisely explain the functions of the cardiovascular system.
- This quiz will include a short question or two concerning other content in the chapter.

### **Chapter 6 (Cardiovascular System: Blood) Quiz**

- This quiz will ask students to briefly explain the biological basis of the following human health problems, Anemia, Hemophilia, Leukemia.
- This quiz will ask students to list the types of formed elements blood.
- This quiz will include a short question or two concerning other content in the chapter.

### **Chapter 9 (Respiratory System) Quiz**

- This quiz will ask students to briefly explain the biological basis of the following human health problems, Asthma, Bronchitis, Emphysema, Pneumonia, Pulmonary Tuberculosis.
- This quiz will include a short question or two concerning other content in the chapter.

### **Chapter 20 (Patterns of Genetic Inheritance) Quiz**

- This quiz will ask students to define the following BIOLOGICAL terms, Genotype, Phenotype.
- This quiz will ask students to briefly explain the **symptoms** the following human genetic disorders, Cystic fibrosis, Huntington's disease, Sickle-cell disease.
- This quiz will include a short question or two concerning other content in the chapter.

### **Chapter 21 (DNA Biology and Technology) Quiz**

- This quiz will ask students to briefly explain how DNA and RNA differ.
- This quiz will ask students to identify what the final (molecular) result of gene expression is.
- This quiz will include a short question or two concerning other content in the chapter.

### **Chapter 19 (Cancer) Quiz**

- This quiz will ask students to briefly explain what cancer is and at least three of the characteristics of cancer cells.
- This quiz will ask students to define the following BIOLOGICAL/MEDICAL terms, Metastasis, Oncology.
- This quiz will include a short question or two concerning other content in the chapter.

**BL 216 EXCUSED ASSIGNMENT FORM**

Student Name: \_\_\_\_\_ Date of absence: \_\_\_\_\_

This form must be filled out to have any score averaged out of a student's grade due to an excused absence. Final Exams or the paper missed for an excused absence must be re-scheduled and will not be averaged out of a student's grade.

**A photocopy of documentation of the absence, such as a note from a health care provider or a photocopy of a funeral card/program, must be stapled to this form for it to be accepted.** The instructor reserves the right to follow up with the Office of Student Life or other sources to verify excused absences (e.g., faxing a health provider's note back to the office and asking the office to verify its authenticity).

If this form is not received by the final exam the missed exam quiz or assignment will be graded as a 0%.

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This form is for the following assignment (circle one):

Lec. Examination 1 – Feb.	Quiz 1 Ch. 2 **	Quiz 8 Ch. 21 **
Lec. Examination 2 – Feb.	Quiz 2 Ch. 3 **	Quiz 9 Ch. 19 **
Lec. Examination 3 – March	Quiz 3 Ch. 4 **	**Two reading quizzes may be dropped, thus none may be averaged out unless two (2) already have been missed for excused reasons.
Final Lecture Exam – April*	Quiz 4 Ch. 5 **	
*A final exam or the final disease/disorder paper missed for an excused absence must be re-scheduled or a grade of "I" gwill be given. These will not be averaged out of a student's grade.	Quiz 5 Ch. 6 **	Disease/Disorder Paper Draft Disease/Disorder Paper*
	Quiz 6 Ch. 9 **	
	Quiz 7 Ch. 20 **	

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This excused absence if for the following reason (circle one):

Illness	NCAA Game	Serious Injury of a Close Relative or Friend
Serious Injury	Death of a Close Relative or Friend	Other
Documentation of illness or serious injury requires a note or photocopy of a note from a certified health care provider.	Documentation of a death would include a photocopy of a funeral card, memorial program, or other document with the deceased's name.	Documentation of these will vary. Please discuss appropriate documentation with your instructor

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Include a **brief** explanation of the reason for the excused absence below.

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I the undersigned certify that this was an excused absence of the nature indicated above and request that the indicated assignment be treated as resulting from an excused absence.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_