

**IDST300 - Genetics & Society**  
**Messiah College**  
**Summer 2011 On Line**

**Dr. James Makowski, Instructor**  
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**Class Schedule:**  
May 30 – July 22

**Faculty Availability/Expectations:**

The course instructor will be available from 9:00-11:00 a.m. Monday through Friday to review postings to the Forums. Students should spend a minimum of 5 ¼ hours per week on course materials (Lectures, Forums, Journals and Assignments).

**System Requirements:**

The following list represents configurations that provide the best performance with our learning management system and synchronous software and configurations the College is ready and able to support. Although, students may find that other configurations may work as well, those configurations may not be supported by Academic Technology Services.

**Internet Connection** - High speed or broadband cable required; Satellite Broadband not recommended due to conflicts with synchronous software; **Air cards may not be used**

**Browser** - Mozilla Firefox 3.0 or higher

**Operating System Version:**

- Windows® XP (recommended)
- Windows® Vista
- Windows® 7
- Mac OS 10.4 or higher

**Desktop Processor (CPU):** Pentium 4 at 2.0 GHz or faster

**Laptop Processor (CPU):** Centrino (or Centrino Duo) 1.5 GHz or faster

**Memory (RAM):**

- Windows® XP: 512 MB or more
- Windows® Vista: 1024 MB or more
- Windows® 7: 1024 MB or more
- Mac OS: 1024 MB or more

**Hard Disk Space:** 40 GB or more of free space

**CD-ROM/CD-RW drive** (DVD or combo drive helpful)

**Any Office Suite**; Examples include Microsoft Office 2007 or newer, OpenOffice 3.1, or Google Docs

Some courses will require additional software and/or hardware as it pertains to the instruction of the course. These additional requirements will be clearly spelled out in the admissions materials and in course syllabi.

### **Computer Requirements:**

Students who enroll in an online course must have basic computer skills including:

- A working knowledge of word processing
- Navigate the Internet using different search engines (MCSquare)
- Email (Compose, Attach, Send, Read)
- Utilize Microsoft Office Programs (Word, Excel)
- Familiarity with Mozilla Firefox 2.0 or higher (preferred browser for full Sakai operation) or Microsoft Internet Explorer 6.0 or higher

### **Student Computer Support:**

Messiah College will provide the student with “real person” technical support as an online student through a variety of ways including instant messaging, telephone, and email:

- Via instant messaging (IM) @ SCS5901
- By telephone at (717) 796-1800, ext. 5901
- Via email at [bthomps@messiah.edu](mailto:bthomps@messiah.edu) or [ResNet@Messiah.edu](mailto:ResNet@Messiah.edu)

The above support is available during the summer session between 8:00 a.m. and 11:00 p.m. Monday through Friday. The student will also have access to technical support (tutorials, help functions, etc.) through the Messiah College portal, MCSquare, and also through the College’s Learning Management System (Sakai).

### **Statement of Confidentiality:**

Students in Online Courses will be asked to post written work and to engage in written dialogue with other class members. The student should be aware that although confidentiality within the course environment is encouraged, it is possible that users in and outside the course may have access to course content.

### **Statement of Copyright Protection:**

The materials on this course web site are only for the use of students enrolled in this course for purposes associated with this course and may not be retained or further disseminated.

## **COURSE RESOURCES:**

### **Texts**

Lewis, Ricki, *Human Genetics: Concepts and Applications*, 8<sup>th</sup>. Ed., McGraw-Hill Publishers, Boston, MA, 2009.

Levine, Carol, *Taking Sides: Clashing Views on Bioethical Issues*, 14th Ed., McGraw-Hill Publishers, Boston, MA, 2012.

## **Videos**

### **GATTACA**

- Available at Amazon.com or local video store
- Highly acclaimed sci-fi thriller that examines the topics of genetic profiling and human genetic engineering. A “Social Science Fiction” film.

## **COURSE DESCRIPTION**

Many believe that we are in the midst of a genetic revolution. Advances in genetic engineering, reproductive technologies, and gene therapies hold great promise as well as great cause for concern. As with nuclear technology, which has given us nuclear medicine, nuclear energy, and nuclear weapons, so too will genetic technologies offer a similar array of good, questionable, and bad technological applications. This course is intended to examine the science of genetics and the resultant technologies, and to discuss how both will influence and impact our society. Our primary goal will be to help each of you understand how hereditary mechanisms work, and to develop a Christian perspective in dealing with both the potential answers to problems as well as the potential for creating new problems as a result of these genetic technologies.

## **GOALS:**

Upon completion of this course, students should:

1. Have an understanding of basic genetic concepts, and be able to communicate those concepts as they apply to humans and other organisms.
2. Be able to examine concepts relevant to molecular genetics and recombinant DNA methodologies, and be able to objectively read media reports (newspapers, magazines, etc.) dealing with these technologies.
3. Be able to critically discuss the tremendous responsibilities that we as Christians have with regard to these technologies.

## **COURSE REQUIREMENTS:**

### **Forums**

Student participation in forums is mandatory and is worth a total of 200 points. The instructor will post discussion questions regarding the respective subject matter by 11:00 a.m. on Mondays. Each week, students are required to: (1) Post an observation to at least one discussion question; and (2) Respond to a post from two other students. For the purpose of this assignment, the weekly deadline for student postings is 11:59 p.m. on Saturdays.

The Forum will be the students’ primary means of asking questions about the course. **Please only**

**email the instructor with questions of a personal nature.** In order to take full advantage of all the benefits of online postings via the forum, please comply with the following suggestions:

- Before posting anything online, read what others have posted
- If you respond to someone else's posting(s), consider the following rules:
  - Summarize or quote what the student has said (you might want to mention the student's name for clarification purposes)
  - State your position clearly  
Example: I agree with Ashley when she says: "The modern professional athlete does not speak out regarding social issues due to endorsement contracts."
- When taking information from other sources, please remember:
  - Do not cut and paste
  - Make sure the information is referenced properly, including author, title, year of publication, URL, etc.
  - Don't quote verbatim – paraphrase
  - Give credit where credit is due
  - Make sure the resources are reliable
- Think and try to make connections between what you have learned in class and your personal experiences
- Don't respond too quickly – take the time to reflect upon what you have read and what you have learned in the classroom
- This is not instant messenger:
  - Don't use abbreviations
  - Use proper grammar
  - Spell check your document before posting it
- Be sure to respond to someone else's comment(s) about your original posting(s)
- Focus on one issue and treat it thoroughly instead of addressing several issues superficially
- Take the time to look at your old postings and monitor your own progress throughout the course
- If you agree or disagree with someone, make sure you back up your position with solid reasoning and justification

### **Position Paper:**

You will be writing a 4-6 page position paper that will be due **July 15th**. The topic of the paper should be one that we have discussed during the class. If you would like to write concerning a topic that has not been discussed in class, you may e-mail me and, upon my approval, substitute that topic for one of the others. Since this is a position paper, you are to present several points of view with regard to the topic. You should then choose the position that you favor/support, and have that make up the majority of your paper. Papers will be evaluated on logic and ethical approach rather than on the position taken. **(100 points)**

## **Journal:**

One of the goals of this class is to have you begin to think and read critically concerning topics related to genetics and genetic technologies. I would like each of you to keep an on-line journal of newspaper and magazine articles which are about genetics and/or genetic technologies.

Using on-line resources such as news services or on-line links to magazines or newspapers, select a total of 8 articles (1 article each week) relating to genetics or genetic technologies. In 1-2 pages, **list the link to the article** and then discuss the following:

- \* What is the main idea/thesis/point of the article?
- \* What, if any, slant seems to be taken by the author?
- \* In what light are scientists or the technologies seen as they are mentioned in the article?
- \* What is your reaction to the article? Do you agree/disagree with the author?

It will be helpful to separate each of the questions above into separate sections: **Main Idea/Thesis, Slant, How Scientists are Viewed, and Your Response**. Each article will be worth 15 points, for a total of 120 points. Each journal entry will be due the Monday of the next week (e.g. Journal entry #1 will be due June 6th; Entry #2 will be due June 13, and so on. The last week of class, you will have your 7<sup>th</sup> entry due July 18<sup>th</sup> and the last entry due on July 22<sup>nd</sup>. Journals will be graded on how well the articles relate to genetics & genetic technologies, and in particular, **your responses** to the questions outlined above.

**(120 points)**

## **Weekly Quizzes:**

We will have a weekly, on-line quiz that will cover the material covered for that particular week. Quizzes will be available on-line for a particular period of time—typically Friday afternoon through Sunday evening. The purpose of the quizzes is to (1.) help me know how well you're doing with the topics presented, and (2.) to encourage you to review the material weekly.

## **TENTATIVE LECTURE/DISCUSSION SCHEDULE:**

Rather than listing a day-to-day schedule, I have chosen to divide our course into four major sections: Genetics & Mutation, Reproduction & Reproductive Technologies, Recombinant DNA & Genetic Technologies, and Genetics, Law & Bioethics. Each section will last two weeks. Reading assignments, as well as other assignments will be given throughout the course. There will be a mid-term examination covering the content of the first two sections and a non-comprehensive final exam at the end of the second two sections.

### **GENETICS & MUTATION**

**May 30-June 10**

During the first two weeks of our course, we will examine the basic concepts of genetics, including cell structure, mitosis & meiosis, Mendel's genetics, human genetics, and what happens when errors occur.

### **DEVELOPMENT & REPRODUCTIVE TECHNOLOGIES**

**June 13-June 24**

During the second portion of our course, we will examine some of the recent advances in reproductive technologies, and discuss their potential impact on society. This portion of the course will lay the foundation for our looking at DNA and how geneticists manipulate DNA through modern recombinant DNA methodologies.

Your mid-term examination will be on **Friday, June 17**, and will include topics covered during this portion of the course.

### **RECOMBINANT DNA & GENETIC TECHNOLOGIES**

**June 27-July 8**

During the third portion of the course, we will examine and discuss topics related to the structure of DNA, how DNA copies itself, and how our physical, biochemical, and behavioral characteristics are determined by our DNA. We will then examine current DNA methodologies, including cloning, DNA fingerprinting, transgenic organisms, gene therapy, and genetic surgery.

### **GENETICS, LAW & BIOETHICS**

**July 11-22**

During the final portion of the course, we will begin by examining the developments which have taken place with regard to gene therapy and genetic counseling. We will then concentrate on how the topics discussed in class relate to us as humans, and, in particular, as Christians. We will spend time discussing the legal, moral, and ethical aspects of what some have called the "New

Genetics”, and will look at what both society and scripture has to say with regard to these technologies.

The reading assignments for this portion of the course will from outside sources. During this portion of the course, you will be responsible for writing a short (4-6 page) position paper on some topic discussed in class. This paper will be due the next to last week of class (most likely, July 15<sup>th</sup>). Your final exam will be on **Friday, July 22nd**. This will be a **non-comprehensive** exam covering the topics discussed during the second half of the course.

### **EVALUATION:**

Exams & quizzes will be based on class meetings, discussions, and reading assignments. The third exam is not comprehensive. Final grades will be based on total points accumulated. The following is a breakdown of points for the course:

2 Lecture/Discussion Exams @ 100 pts.	200
8 On-line quizzes @ 10 points	80
1 Position Paper	100
8 Journal entries @ 15 pts	120
Forums	<u>200</u>
	700

A = 92% or better; A- = 90-91; B+ = 88-89; B = 82-87; B- = 80-81; C+ = 78-79; C = 72-77; C- = 70-71; D+ = 68-69; D = 60-67; F = 59 and lower

### **OTHER DETAILS:**

1. Please refer to this syllabus regularly. Dates and details for assignments and exams will be as stated unless specific changes are announced in class.
2. Make-up privileges for exams or other assignments must be arranged in advance, except for emergencies. There will be no make up privileges for unannounced quizzes.

## **ADA STATEMENT**

AMERICANS WITH DISABILITIES ACT: Any student whose disability falls within ADA guidelines should inform the instructor at the beginning of the semester of any special accommodations or equipment needs necessary to complete the requirements for this course. Students must register documentation with the Office of Disability Services (HOFF 101/102). If you have questions, call extension 7258.

## Messiah College's Policy Regarding Academic Integrity

Personal integrity is a behavioral expectation for all members of the Messiah community: administration, faculty, staff, and students. Violations of academic integrity are not consistent with the community standards of Messiah College. These violations include:

1. **Plagiarism:** Submitting as one's own work part or all of any assignment (oral or written) which is copied, paraphrased or purchased from another source, including on-line sources without the proper acknowledgment of that source. Examples: failing to cite a reference, failing to use quotation marks where appropriate, misrepresenting another's work as your own, etc..
2. **Cheating:** Attempting to use or using unauthorized material or study aids for personal assistance in examinations or other academic work. Examples: using a cheat sheet, altering a graded exam, looking at a peer's exam.
3. **Fabrication:** Submitting altered or contrived information in any academic exercise. Examples: falsifying sources and/or data, etc.
4. **Misrepresentation of Academic Records:** Tampering with any portion of a student's record. Example: forging a signature on a registration form or change of grade form.
5. **Facilitating Academic Dishonesty:** Helping another individual violate this policy. Examples: working together on an assignment where collaboration is not allowed, doing work for another student, allowing one's own work to be copied.
6. **Computer Offenses:** Altering or damaging computer programs without permission. Examples: software piracy, constructing viruses, introducing viruses into a system, copying copyrighted programs, etc.
7. **Unfair Advantage:** Attempting to gain advantage over fellow students in an academic exercise. Examples: lying about the need for an extension on a paper, destroying or removing library materials, etc.

### Violations of Academic Integrity Policy

1. If a violation of the Academic Integrity Policy is suspected, the faculty member should meet with the student(s) to discuss the incident and determine to the faculty member's satisfaction whether or not a violation has occurred. Faculty members may choose to have a witness present at the discussion.
2. If a student is accused of violating the academic integrity policy, but subsequently the faculty member determines that the student is innocent or insufficient evidence exists to justify further action, the student should be informed of this determination in writing. No report of the accusation or of the faculty/student meeting should be filed with the Academic Dean.
3. If the faculty member determines that a violation has occurred, a report should be filed with the Academic Dean and a duplicate of the report should be provided to the student. The report should include the following:
  - a. Complete description of the incident including date of meeting with the student
  - b. Conclusions and sanctions reached as a result of the meeting

This information will be kept on file until a student is graduated.

4. The faculty member should keep originals of tests, papers, etc. that provide evidence of the violation.

## **Penalties for Violations of the Academic Integrity Policy**

A faculty member may exercise broad discretion when responding to violations of the academic integrity policy. The range of responses may include failure of the course to a grade reduction of the given assignment. The typical consequence for violations will be failure of the assignment. Some examples of serious offenses which might necessitate the penalty of the failure of the course include: cheating on an examination, plagiarism of a complete assignment, etc. Additionally, the faculty member should notify the office of the Academic Dean. The faculty member should communicate to the student in writing whenever a grade reduction or failure of the course occurs due to a violation of the academic integrity policy. With issues related to computer offenses or misrepresentation of academic records, the case may be referred to the Student Judicial Council for processing.

If a staff member or an administrator discovers violations of the academic integrity policy he/she should contact the Academic Dean who will contact the student.

## **Penalties for Multiple Violations of the Academic Integrity Policy**

The policy of the college is to act, whenever possible, in redemptive rather than merely punitive ways. We believe that simply to ignore an offense is to be neither loving nor redemptive. Consequently, the following procedure will be followed:

If a second report of a violation of the academic integrity policy is received by the Academic Dean's office, the student will be required to meet with the Academic Dean. Suspension of the student or other appropriate sanctions may occur after the second offense at the discretion of the Academic Dean. A student may appeal the decision of the Academic Dean by appealing to the Provost, whose decision will be final.

## **Appeals Process for Violations of the Academic Integrity Policy**

The student may appeal in writing to the academic department in which the course is offered. A student's intent to appeal a faculty member's response to a violation must be communicated to the department chairperson in writing within one week of the receipt of the written notification from the faculty member dealing with the incident. The decision of the academic department may be appealed to the Academic Standing Committee of the Dean's Council.

# Honor Code Agreement

## *Terms and conditions for students taking Genetics & Society*

By enrolling in this course, the student agrees to the following terms and conditions:

- 1. Regarding Plagiarism:** I will not use or represent the work of another as my own. This specifically includes the use of other students' work, WWW resources, and published works. I understand that citation of each source is expected and a part of the ethical practice of science and learning.
- 2. Regarding Cheating:** I will abide by the instructions on exams, tests, quizzes and homework assignments when they are labeled or assigned as closed book, individual effort or other such designation of assistance or period of performance. I further understand that it is my ethical duty, on my honor, that I abide by these instructions even in the absence of an instructor or exam proctor.
- 3. Regarding Knowledge of Violators:** I will be honor bound to report immediately all violations of the Honor Code of which I have first-hand knowledge. I understand that a failure to do so shall be a violation of the Honor Code. I understand that students found guilty of a violation shall be failed in the course and potentially dismissed from the College.
- 4. Regarding Messiah College's Academic Honesty Policy:** I pledge to abide by the Messiah College Academic Honesty Policy for all work concerning this course.

**Pledge of Honor:** All course work submitted for evaluation is pledged with the student's signature. This signature henceforth is tantamount to pledging the following:

*"I pledge that I will not plagiarize nor cheat in this course, and I report any violations of the Honor Code Agreement by others."*

**Signature** \_\_\_\_\_

**Printed Name** \_\_\_\_\_