

MORAVIAN COLLEGE

IDIS 398 - SOCIAL IMPACT OF GENETIC INFORMATION SPRING 2006

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Office hours: Monday 2:30 p.m.- 4:00 p.m.

Tuesday 10:00 a.m. - 11:00 a.m.

Tuesday 2:30 p.m. - 4:00 p.m.

and by appointment.

Overview

A course designed for students to explore issues related to genetic sequencing. Topics include medical, legal, and ethical implications of decisions about the use of genetic information on themselves and on society. *Prerequisite:* F4 recommended. (U1).

Course Objectives

Students will be able to:

1. Explain the nature of genetics and heredity.
2. Discuss current practices in medicine, agriculture, and workplace related to genetic information.
3. Examine existing law related to genetic information.
4. Analyze potential applications of genetic information.
4. Critique implications of potential decisions about genetic information.
5. Appreciate ethical dimensions interconnected with all aspects.

Required Texts

Reilly, P. R. (2000). *Abraham Lincoln's DNA and other adventures in genetics*. Cold Spring Harbor, NY: Cold Spring Harbor Laboratory Press.

Resources

Blackboard

Important information about our class will be posted on our Blackboard site at <http://blackboard.moravian.edu>. Announcements will inform you of any changes. The Discussion Forum will enable us to exchange ideas, insights, and resources about various topics throughout the semester. Information about logging in and using the site will be given in class.

Assignments

"Information is an undigested burden unless it is understood. It is knowledge only as its material is comprehended. And understanding, comprehension means that the various parts of the information are grasped in their relations to one another—a result that is attained only when acquisition is accompanied by constant reflection upon the meaning of what is studied" (Dewey, *How We Think*, 177).

Reading Assignments

Reading assignments will include chapters in the text and recent media articles. As part of each reading assignment, consider questions posed by the reading and be prepared to discuss these in class. For one chapter of the assigned reading, write an insightful question for class discussion. You may identify a quotation from the reading that captures important concepts that relate to your question.

Written Assignments

You will complete several kinds of written assignments. Written assignments may include use of outside texts, journals, and electronic sources; these will serve to extend your understanding of concepts and familiarize you with resources. All written work is to be prepared using a word processor. Reading and written assignments are expected during the class session on the due date. Late assignments will be reduced for each day late. Written assignments are expected to be free of spelling and grammatical errors.

Classroom assignments. There will be short assignments that you will complete individually or with your group where you will be exploring content in various ways, in preparation for and during class sessions. These assignments will be graded as acceptable or unacceptable. To be acceptable, the assignment must be complete, demonstrate active participation, effort, and, where appropriate, creativity in preparation.

Blackboard discussion forum. You will post three substantive questions/issues during the semester to the Discussion forum, and you will post substantive responses to three questions/issues posed by classmates.

Identifying resources. There are extensive resources available to support our understanding of the various topics. During the semester, report on two references, with one from a website and one from a journal. Describe them in your Blackboard posts. In each case, cite the resource specifically and what within the resource was useful to you. Also, locate one current event item and report it.

Journal. You will keep a journal to reflect upon your understanding of the social impact of genetic information. You will make six entries, related to history, legal questions, human behavior, genetic engineering, medicine, and ethics. Each journal should summarize your understanding of the topic, then reflect your opinion about some aspect of the topic. Journal entries are two pages long.

Topic paper. Select an issue related to genetic information that interests you. Prepare a paper on this topic that discusses positive and negative aspects of the topic and gives your conclusions. (10 pages; 10 references) *Note:* There will be a sign-up sheet of topics.

Presentation/discussion. Briefly, present your topic to the class and participate in the class discussion during which class members integrate your findings with concepts previously discussed. Prepare a one-page handout about your topic for class members.

Examinations. There will be a midterm exam and a final exam.

Attendance and Class Participation

Attendance in every class is expected, as it is essential for your comprehension of the concepts covered. Arrive on time and remain for the entire class session. If you are absent, call me before class to tell me the reason. It is your responsibility to make up all work. Absence because of illness will be excused if you bring a note from the Health Center. Lateness or partial class attendance will count toward absence. Each unexcused absence will lower your grade.

Be prepared for each class session by completing the reading and other assigned work. During class, remain actively involved by paying attention, taking notes, and participating. By contributing to class discussions, and asking or answering questions, you ensure that you comprehend the material. Participation will be assessed on evidence of your completion of assigned work, the questions and comments made during class sessions, and the relevance and quality of responses. Participation on a regular basis is expected. Lack of participation will reduce your grade.

The Moravian College policy on academic honesty will be followed.

Collaboration with peers can be valuable in enabling your understanding of various aspects of your work. However, the work you submit must be the result of your individual effort, apart from the collaborative process. You may use paper and on-line resources as you develop your work. Here, too, the work you submit must be the result of your individual effort, apart from the resources. In all cases, cite sources that you used.

Grading

Each assignment will be graded based on specific criteria. You will receive the criteria during the discussion of each assignment.

Classroom assignments	15%	A	=	93 - 100
Journals	25 %	A-	=	90 - 92
Individual issue paper	15 %	B+	=	87 - 89
Presentation/discussion	5 %	B	=	83 - 86
Blackboard and resources	10 %	B-	=	80 - 82
Midterm Examination	15 %	C+	=	77 - 79
Final examination	15 %	C	=	73 - 76
		C-	=	70 - 72
		D+	=	67 - 69
		D	=	63 - 66
		D-	=	60 - 62
		F	=	below 60

Course Outline

I. Genes and heredity

II. Issues related to use of genetic information

Medical and health issues

- Genetic testing
- Genetic diseases
- Pharmacogenomics
- Prenatal genetic testing
- Gene therapy
- Stem cell research
- Genetic counseling
- Psychological impact of genetic knowledge
- Behavioral Genetics

Employment issues

- Employment screening

Insurance issues

- Life insurance
- Payment for preventive treatment
- Risk classification
- Health insurance

Legal issues

- Privacy and confidentiality of genetic information
- Population screening
- Ownership of the genetic code
- Forensics
- Legal rights

III. Genetic Modification

Agriculture

Food

Health

IV. Cloning

- Genetically modified animals

V. Ethical implications

There are ethical considerations related to each of the course topics, and these will be integrated within the discussion of the topics.

You can expect to work 6-9 hours per week outside of class preparing for this class. Students with disabilities who believe that they may need accommodations in this class are encouraged to contact the Learning Services Office as soon as possible to enhance the likelihood that such accommodations are implemented in a timely fashion.

Course Outline

- 1/17 Introduction: Course Overview
due: 1/19: Reilly - Preface and Introduction
- 1/24 History: Using DNA to Understand the Past
due: 1/24: Reilly - Ch. 1
1/26: Reilly - Ch. 2
- 1/31 Justice: The DNA Revolution in the Courts
due: 1/31: Reilly - Ch. 3
2/2: Reilly - Ch. 5, 6
- 2/7 Justice (cont.)
due: 2/7: Reilly - Ch. 7
2/7: History journal
2/9: Reilly - Ch. 8
- 2/14 Behavior: Do Genes Make Us the Way We Are
due: 2/14: Reilly - Ch. 9
2/14: Legal questions journal
2/16: Reilly - Ch. 10
- 2/21 Behavior (cont.)
due: 2/21: Reilly - Ch. 11
2/23: Reilly - Ch. 12
- 2/28 Plants and Animals: Genetic Engineering and Nature
2/28: Midterm Examination
due: 3/2: Reilly - Ch. 13, 14
- 3/7 Spring break
- 3/14 Genetic Engineering (cont.)
due: 3/14: Reilly - Ch. 15
3/14: Human behavior journal
3/16: Reilly - Ch. 16
- 3/21 Diseases: The Genetic Revolution in Medicine
due: 3/21: Reilly - Ch. 17
3/21: Genetic engineering journal
3/23: Reilly - Ch. 18
- 3/28 Diseases (cont.)
due: 3/28: Reilly - Ch. 19, 20
3/30: Reilly - Ch. 21
- 4/4 Dilemmas: Genetic Technologies and Individual Choice
due: 4/4: Reilly - Ch. 22, 23
4/4: Diseases journal
4/6: no class
- 4/11 Dilemmas (cont.)
due: 4/11: Reilly - Ch. 24
4/13: no class
- 4/18 Interrelating Genetic Decisions
due: 4/18: Ethics journal
4/18: presentation/discussion
4/20: presentation/discussion

4/25 Interrelating Genetic Decisions
due 4/25: presentation/discussion
4/27: Conclusion

Note: This schedule is tentative and may be modified as necessary.