

CHANGE UNDERGRADUATE PROGRAM FORM

1. General Information

College:	<u>Agriculture</u>	Department:	<u>Interdepartmental</u>
Current Major Name:	<u>Agricultural Biotechnology</u>	Proposed Major Name:	_____
Current Degree Title:	<u>BS</u>	Proposed Degree Title:	_____
Formal Option(s):	_____	Proposed Formal Option(s):	_____
Specialty Field w/in Formal Option:	_____	Proposed Specialty Field w/in Formal Options:	_____
Date of Contact with Associate Provost for Academic Administration ¹ :		<u>08/24/2012</u>	
Bulletin (yr & pgs):	<u>12-13; p. 97</u>	CIP Code ¹ :	<u>26.1201</u>
Accrediting Agency (if applicable):		<u>N/A</u>	
Requested Effective Date:	<input checked="" type="checkbox"/> Semester following approval.	OR	<input type="checkbox"/> Specific Date ² : _____
Dept. Contact Person:	<u>Daniel K. Howe</u>	Phone:	<u>218-1113</u>
		Email:	<u>dkhowe2@uky.edu</u>

2. General Education Curriculum for this Program:

The new General Education curriculum is comprised of the equivalent of 30 credit hours of course work. There are, however, some courses that exceed 3 credits & this would result in more than 30 credits in some majors.

- There is no foreign language requirement for the new Gen Ed curriculum.
- There is no General Education Electives requirement.

Please list the courses/credit hours currently used to fulfill the University Studies/General Education curriculum:

This is the list of courses that have been approved to fulfill the GenEd/UKCore requirements for the ABT curriculum. No changes are being requested.

Arts and Creativity - choose from list - 3 credit hours

Humanities - choose from list - 3 credit hours

Social Sciences - choose from list - 3 credit hours

Natural/Physical/Mathematical - CHE 105/111 - 5credit hours

Comp & Comm I - CIS or WRD 110 - 3 credit hours

Comp & Comm II - CIS or WRD 111 - 3 credit hours

Quantitative Foundations - MA 123 or 113 or 137 - 4 credit hours

Statistical Inferential Reasoning - STA 210 - 3 credit hours

Community, Culture and Citizenship in the USA - GEN 100* - 3 credit hours

Global Dynamics - choose from list - 3 credit hours

*College requirement; not required of students transferring into the College of Ag who have satisfied this UKCore requirement previously

Please identify below the suggested courses/credit hours to fulfill the General Education curriculum.

¹ Prior to filling out this form, you MUST contact the Associate Provost for Academic Administration (APAA). If you do not know the CIP code, the (APAA) can provide you with that during the contact.

² Program changes are typically made effective for the semester following approval. No program will be made effective until all approvals are received.

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General Education Area	Course	Credit Hrs
I. Intellectual Inquiry (one course in each area)		
Arts and Creativity	_____	_____
Humanities	_____	_____
Social Sciences	_____	_____
Natural/Physical/Mathematical	_____	_____
II. Composition and Communication		
Composition and Communication I	CIS or WRD 110	3
Composition and Communication II	CIS or WRD 111	3
III. Quantitative Reasoning (one course in each area)		
Quantitative Foundations ³	_____	_____
Statistical Inferential Reasoning	_____	_____
IV. Citizenship (one course in each area)		
Community, Culture and Citizenship in the USA	_____	_____
Global Dynamics	_____	_____
Total General Education Hours		_____

3. Explain whether the proposed changes to the program (as described in sections 4 to 12) involve courses offered by another department/program. Routing Signature Log must include approval by faculty of additional department(s).

4. Explain how satisfaction of the University Graduation Writing Requirement will be changed.

Current	Proposed
<input type="checkbox"/> Standard University course offering. List: _____	<input type="checkbox"/> <i>Standard University course offering.</i> <i>List: _____</i>
<input type="checkbox"/> Specific course – list: _____	<input type="checkbox"/> <i>Specific course) – list: _____</i>

5. List any changes to college-level requirements that must be satisfied.

Current	Proposed
<input type="checkbox"/> Standard college requirement. List: _____	<input type="checkbox"/> <i>Standard college requirement.</i> <i>List: _____</i>
<input type="checkbox"/> Specific required course – list: _____	<input type="checkbox"/> <i>Specific course – list: _____</i>

6. List pre-major or pre-professional course requirements that will change, including credit hours.

Current	Proposed
<u>BIO 150 - 3 hours</u>	<u>BIO 148 - 3 hours</u>
<u>BIO 151 - 2 hours</u>	<u>BIO 152 - 3 hours</u>
<u>BIO 152 - 3 hours</u>	<u>BIO 155 - 1 hours</u>
<u>BIO 153 - 2 hours</u>	

³ Note that MA 109 is NOT approved as a Quantitative Foundations course. Students in a major requiring calculus will use a calculus course (MA 113, 123, 137 or 138) while students not requiring calculus should take MA 111, PHI 120 or another approved course.

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7. List the major's course requirements that will change, including credit hours.

Current	Proposed
<u>Genetics</u> <u>ABT 360 or BIO 304 - 3-4 hours</u> <u>ABT 460 - 3 hours</u> <u>ABT 461 - 3 hours</u>	<u>Genetics</u> <u>ABT 120 - Genetics and Society - 3 hours (see attachment)</u> <u>ABT 360 or BIO 304 - 3-4 hours</u> <u>ABT 460 - 3 hours</u> <u>ABT 461 - 3 hours</u>

8. Does the pgm require a minor AND does the proposed change affect the required minor? N/A Yes No
 If "Yes," indicate current courses and proposed changes below.

Current	Proposed
_____	_____

9. Does the proposed change affect any option(s)? N/A Yes No
 If "Yes," indicate current courses and proposed changes below, including credit hours, and also specialties and subspecialties, if any.

Current	Proposed
_____	_____

10. Does the change affect pgm requirements for number of credit hrs outside the major subject in a related field? Yes No
 If so, indicate current courses and proposed changes below.

Current	Proposed
_____	_____

11. Does the change affect pgm requirements for technical or professional support electives? Yes No
 If so, indicate current courses and proposed changes below.

Current	Proposed
_____	_____

12. Does the change affect a minimum number of free credit hours or support electives? Yes No
 If "Yes," indicate current courses and proposed changes below.

Current	Proposed
_____	_____

13. Summary of changes in required credit hours:

	Current	Proposed
a. Credit Hours of Premajor or Preprofessional Courses:	<u>42-45</u>	<u>39-42</u>
b. Credit Hours of Major's Requirements:	<u>31-33</u>	<u>34-36</u>
c. Credit Hours for Required Minor:	_____	_____
d. Credit Hours Needed for a Specific Option:	_____	_____
e. Credit Hours Outside of Major Subject in Related Field:	_____	_____
f. Credit Hours in Technical or Professional Support Electives:	_____	_____

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g. Minimum Credit Hours of Free/Supportive Electives:	_____	_____
h. Total Credit Hours Required by Level:	100:	_____
	200:	_____
	300:	_____
	400-500:	_____
i. Total Credit Hours Required for Graduation:	_____	_____

14. Rationale for Change(s) – if rationale involves accreditation requirements, please include specific references to that.

The Department of Biology has changed their curriculum and will discontinue BIO 150 (lecture), 151 (lab), and 153 (lab), replacing these courses with BIO 148 (lecture) and 155 (computer-based lab). Accordingly, we are changing the Ag Biotech Pre-Major requirements to remove the discontinued courses and to include the new Biology offerings. We are requesting to add ABT 120, Genetics and Society, as a new Major requirement (see attached syllabus). This new course developed by Dr. Joe Chappell will give freshmen ABT students an introduction to genetics and its influences on society, and it will provide these students with an early wet-lab experience that has been lost with the discontinuation of BIO 151 and 153.

15. List below the typical semester by semester program for the major. If multiple options are available, attach a separate sheet for each option.

YEAR 1 – FALL: (e.g. "BIO 103; 3 credits")	<u>See attachment</u>	YEAR 1 – SPRING:	_____
YEAR 2 - FALL :	_____	YEAR 2 – SPRING:	_____
YEAR 3 - FALL:	_____	YEAR 3 - SPRING:	_____
YEAR 4 - FALL:	_____	YEAR 4 - SPRING:	_____

CHANGE UNDERGRADUATE PROGRAM FORM

Signature Routing Log

General Information:

Current Degree Title and Major Name: BS in Agricultural Biotechnology

Proposal Contact Person Name: Daniel K. Howe Phone: 218-1113 Email: dkhowe2@uky.edu

INSTRUCTIONS:

Identify the groups or individuals reviewing the proposal; note the date of approval; offer a contact person for each entry; and obtain signature of person authorized to report approval.

Internal College Approvals and Course Cross-listing Approvals:

Reviewing Group	Date Approved	Contact Person (name/phone/email)	Signature
ABT Coordinating Committee	11/07/2011	Daniel K. Howe / 218-1113 / dkhowe2@uky.edu	
Undergraduate Curriculum Committee	9/7/12	Larry J. Grabau / 7-3469 / Larry.Grabau@uky.edu	
		/ /	
		/ /	
		/ /	

External-to-College Approvals:

Council	Date Approved	Signature	Approval of Revision ⁴
Undergraduate Council	1/8/13	Joanie Ett-Mims	
Graduate Council			
Health Care Colleges Council			
Senate Council Approval		University Senate Approval	

Comments:

⁴ Councils use this space to indicate approval of revisions made subsequent to that council's approval, if deemed necessary by the revising council.

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Example Curriculum for Students starting Fall 2012

MA 109 in their first year

<u>Fall Year 1</u>		<u>Spring Year 1</u>	
MA 109	College Algebra	3	
ABT 101	Intro to Biotechnology	1	
GEN 100 ¹	Issues in Ag -UK Core IX-	3	
CIS 110 ¹	Composition and Communication I -UK Core V-	3	
CHE 105 ¹	General College Chemistry I -UK Core IV-	4	
CHE 111 ¹	General College Chemistry I Lab -UK Core IV-	1	
Total		15	
			Total
			18

<u>Fall Year 2</u>		<u>Spring Year 2</u>	
CHE 230	Organic Chemistry I	3	
CHE 231	Organic Chemistry I Lab	1	
CHE 295	Organic Chemistry Workshop I	1	
BIO 148	Biology	3	
BIO 155	Biology computer lab	1	
STA 210 ¹	Making Sense of Uncertainty: Intro to Stats -UK Core VIII-	3	
ABT 201	Scientific Method in Biotechnology (only after 30 hrs)	1	
UK Core ¹	II	3	
Total		16	
			Total
			16

<u>Fall Year 3</u>		<u>Spring Year 3</u>	
PHY 211	General Physics I	5	
ABT 360 ³	Genetics	3	
ABT 301	Writing & Presentation in the Life Sci	2	
UK Core ¹	X	3	
SS ² - 1	Specialty Support Course	3	
Total		16	
			Total
			16

<u>Fall Year 4</u>		<u>Spring Year 4</u>	
BCH 401	Fundamentals of Biochemistry	3	
ABT 395	Independent Study in Biotechnology	3	
ABT 495	Experimental Methods in Biotechnology	4	
SS ² - 3	Specialty Support Course Elective	3	
		3	
Total		16	
			Total
			15

MINIMUM TOTAL NEEDED = 128 credit hours

¹UK Core—for list of acceptable courses, check the UK 2011-2012 Bulletin pgs 91-92

²Specialty Support course—for list of acceptable courses, check the UK Bulletin pg 92 and check with your advisor

³BIO 304 (4hrs) can substitute for ABT 360 (3hrs)

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Example Curriculum for Students starting Fall 2012

Math 123 in their first year

<u>Fall year 1</u>		<u>Spring Year 1</u>	
MA 123	Elementary Calculus and its Applications 4 -UK Core VII-	CHE 107	General College Chemistry II 3
ABT 101	Intro to Biotechnology 1	CHE 113	General College Chemistry II Lab 2
GEN 100	Issues in Ag -UK Core IX- 3	ABT 120	Genetics and Society 3
CHE 105	General College Chemistry I 4 -UK Core IV-	BIO 148	Biology 3
CHE 111	General College Chemistry I Lab 1 -UK Core IV-	MA 132	Calculus for the Life Sciences 3
CIS 110	Composition and Communication I 3 -UK Core V-	CIS 111	Composition and Communication II 3 -UK Core VI-
Total	16	Total	17

<u>Fall year 2</u>		<u>Spring Year 2</u>	
CHE 230	Organic Chemistry I 3	CHE 232	Organic Chemistry II 3
CHE 231	Organic Chemistry I Lab 1	CHE 233	Organic Chemistry II Lab 1 (Optional Organic Chemistry II Workshop)
CHE 295	Organic Chemistry I Workshop 1	UK Core ¹ II	3
BIO 152	Principles of Biology II 3	UK Core ¹ III	3
BIO 155	Biology Computer Lab 1	Elective	3
STA 210	Making Sense of Uncertainty: Intro to Statistical Reasoning -UK Core VIII- 3	STA 291	Statistical Methods 3 OR
ABT 201	Scientific Method in Biotechnology 1 (only after 30 hrs)	STA 570	Basic Statistical Analysis 4 OR
UK Core ¹ I	3	STA 580	Biostatistics I 3
Total	16	Total	16-17

<u>Fall year 3</u>		<u>Spring Year 3</u>	
PHY 211	General Physics 5	PHY 213	General Physics II 5
BCH 401G	Fundamentals of Biochemistry 3	BIO 308	General Microbiology 3
ABT 360 ³	Genetics 3	BIO 209	Introductory Microbiology Lab 2
ABT 301	Writing & Presentation in the Life Sci 2	SS ² - 1	Specialty Support Course 3
UK Core X	3	SS ² - 2	Specialty Support Course 3
Total	16	Total	16

<u>Fall year 4</u>		<u>Spring Year 4</u>	
ABT 495	Experimental Methods in Biotechnology 4	ABT 460	Introduction to Molecular Genetics 3
ABT 395	Independent Study in Biotechnology 3-4	ABT 461	Introduction to Molecular Genetics 3
SS ² - 3	Specialty Support Course 3	SS ² - 5	Specialty Support Course 3
SS ² - 4	Specialty Support Course 3	SS ² - 6	Specialty Support Course 3
Elective	3	SS ² - 7	Specialty Support Course 3
Total	16-17	Total	15
MINIMUM TOTAL NEEDED = 128 credit hours			

¹University Studies Program course—for list of acceptable courses, check the UK 2011-2012 Bulletin pgs 91-92

²Specialty Support course—for list of acceptable courses, check the UK Bulletin pg 91 and check with your advisor

³BIO 304 (4hrs) can substitute for ABT 360 (3hrs)

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Example Curriculum for Students starting Fall 2012

MA 113 or MA 137 in their first year

<u>Fall year 1</u>			<u>Spring Year 1</u>		
MA 113	Calculus I -UK Core VII-	4	CHE 107	General College Chemistry II	3
MA 193	Calculus I Workshop	1	CHE 113	General College Chemistry II Lab	2
	OR		CHE 197	General Chemistry II Workshop	1
MA 137	Calculus for the Life Sciences	4	ABT 120	Genetics an Society	3
	-UK Core VII-		BIO 148	Biology	3
ABT 101	Intro to Biotechnology	1	BIO 155	Biology Computer Lab	1
GEN 100	Issues in Ag -UK Core IX-	3	CIS 111	Composition and Communication II	3
CHE 105	General College Chemistry I	4		-UK Core VI-	
	-UK Core IV-				
CHE 111	General College Chemistry I Lab	1			
	-UK Core IV-				
CIS 110	Composition and Communication I	3			
	-UK Core V-				
Total		15-16	Total		16

<u>Fall year 2</u>			<u>Spring Year 2</u>		
CHE 230	Organic Chemistry I	3	CHE 232	Organic Chemistry II	3
CHE 231	Organic Chemistry I Lab	1	CHE 233	Organic Chemistry II Lab	1
CHE 295	Organic Chemistry I Workshop	1	(Optional CHE 297 Organic Chemistry II Workshop)		
BIO 152	Principles of Biology II	3	UK Core ¹ II		3
			UK Core ¹ III		3
STA 210	Making Sense of Uncertainty: Intro to Statistical Reasoning - UK Core VIII	3	STA 291	Statistical Methods	3
			OR		
ABT 201	Scientific Method in Biotechnology (only after 30 hrs)	1	STA 570	Basic Statistical Analysis	4
			OR		
UK Core ¹ I		3	STA 580	Biostatistics I	3
			Elective		3
Total		15	Total		16-17

<u>Fall year 3</u>			<u>Spring Year 3</u>		
PHY 211	General Physics	5	PHY 213	General Physics II	5
BCH 401G	Fundamentals of Biochemistry	3	BIO 308	General Microbiology	3
ABT 360 ³	Genetics	3	BIO 209	Introductory Microbiology Lab	2
ABT 301	Writing & Presentation in the Life Sci	2	SS ² - 1	Specialty Support Course	3
UK Core ¹ X		3	SS ² - 2	Specialty Support Course	3
Total		16	Total		16

<u>Fall year 4</u>			<u>Spring Year 4</u>		
ABT 495	Experimental Methods in Biotechnology	3	ABT 460	Introduction to Molecular Genetics	3
ABT 395	Independent Study in Biotechnology	3-4	ABT 461	Introduction to Molecular Genetics	3
SS ² - 3	Specialty Support Course	3	SS ² - 5	Specialty Support Course	3
SS ² - 4	Specialty Support Course	3	SS ² - 6	Specialty Support Course	3
Elective		3	SS ² - 6	Specialty Support Course	3
			Elective		1-3
Total		15-16	Total		16-18

MINIMUM TOTAL NEEDED = 128 credit hours

¹University Studies Program course—for list of acceptable courses, check the UK 2011-2012 Bulletin pgs 91-92

²Specialty Support course—for list of acceptable courses, check the UK Bulletin pg 92 and check with your advisor

³BIO 304 (4hrs) can substitute for ABT 360

ABT 120 Genetics and Society Fall 2012

Lectures: Monday/Wednesday: 4:00 – 4:50 PM, room A7, Ag. Sci. Center North

Discussion/lab: Friday: 11:00-12:50 PM, room 106, Garrigus Building

Instructor: Dr. Joe Chappell, 301B Plant Sci Bldg, chappell@uky.edu, 218-0775

Office hours: Weds 11:00-12:00 AM

Co-Instructor: Dr. Chunming Liu, chunming.liu@uky.edu, 323-4558

TAs: TBA

TA Office hours: TBA

Course Description: This course is designed for science and non-science majors, giving students an understanding of how genetics influences and impacts our social fabric on a daily basis, and equips students with a sufficient understanding to participate in the policy debates that are impacting our lives. The course will introduce students to the basic concepts of genetics and introduce them to the modern methodologies of molecular genetics. The course will also educate students in the process of scientific discovery and empower students with the knowledge and critical thinking skills necessary to evaluate the present and future impact of genetics on society.

Prerequisites: none

Student Learning Outcomes:

1. Students will master the basic concepts of genetics, and gain practical experience in the methodologies used in establishing basic scientific principles
2. Students will realize the process of scientific discovery in laboratory exercises.
3. Students will demonstrate the knowledge and critical thinking skills necessary to evaluate the present and future impact of genetics on society.

Course Format:

2 hours lecture, 2 hours of discussion-laboratory exercise per week

Reading material:

Required - Genome – the Autobiography of a Species in 23 Chapters by Matt Ridley, Harper Perennial Press, 2000

Electronic access to assigned articles on the course web page.

Optional: Essential Genetics, Daniel L Hartl and Elizabeth W Jones, 2002, call number QH430 .H3732 2002, on reserve in the Young Library.

Optional: The Human Genome, Carina Dennis and Richard B Gallagher, 2001, call number QH447 .H835 2001, on reserve in the Young Library.

Grading:

Critical thinking, organization, legibility, spelling and grammar will be taken into consideration in grading exams and assignments.

25% Midterm (50 points):

The midterm exam will cover basic genetics, the process of scientific discovery, molecular genetics and the basic concepts of genetic engineering. The exam will be CLOSED book and consist of multiple choice and short answer questions.

10% Debate (20 points):

Students will debate one of 10 topics. The instructor will assign debate teams consisting of 4-6 members. Please fill out a debate topic selection form on Wednesday, Aug 29th, 2012. Please indicate the following: date/subject and affirmative or negative. We will do our best to accommodate your preferences, but cannot guarantee it. The timing of the oral presentation will be strictly limited according to the rules described in the debate handout. You will be graded on clarity of your presentation, the persuasiveness of your arguments, and your ability to identify and convey relevant scientific knowledge to the class.

15% Lab Reports (30 points):

All Students will be required to perform two experiments: 1. A segregation analysis of traits in an F2 population of fruit flies; and 2. Develop a molecular fingerprint of your DNA. Lab reports for each experiment will be graded on the quality of the report, the technical accuracy of the results, and on the inferences drawn from the results.

10% Written reviews (20 points):

Each team member will be required to contribute two unique literature references to the debate effort. Students will prepare a brief review of each article, two reviews in total. Grading will be based on the quality of writing, including both grammar and presentation style, and also on the veracity of the selected references. Consult the "review guidelines" handout for additional details regarding the format and grading of reviews.

10% Genome book assignment (20 points):

Students are responsible for reading the book, Genome, by Matt Ridley. Topics from each chapter of the book will be chosen and posted on the Blackboard class website. Each student will choose one topic and, using NCBI Pubmed, will prepare a short update on that topic. These updates will be submitted for grading by posting them on Blackboard. Grading will be based on the quality of writing, including grammar, and also on the demonstrated understanding of the selected references. Consult the "Genome blackboard guidelines" for additional information.

30% Final (60 points):

The emphasis on the final exam will be on material covered since the midterm examination. Questions will cover class lectures, assigned readings, debates and guest

speaker presentations. The exam will be CLOSED book and consist of multiple choice and short answer questions.

Course Grading Scale:

90 – 100% = A
80 – 89% = B
70 – 79% = C
60 – 69% = D
less than 60% = E

Final Exam Information:

Dec. 10th, 2012 at 3:30 PM in A7 Ag. Sci. Center-North

Mid-term grades will be posted in myUK by the deadline established in the Academic Calendar (<http://www.uky.edu/Registrar/AcademicCalendar.htm>)

Course Policies:

Submission of Assignments:

Written assignments will be due by 5:00 PM EST on their due date. All reports should be submit to the Blackboard on-line site. Late submissions will lose 10% of the maximum grade per day or fraction of a day.

Attendance Policy:

Students are expected to attend all class, laboratory and discussion periods and will be held responsible for all information presented in classroom and laboratory discussions.

Excused Absences:

Students need to notify the professor of absences prior to class when possible. S.R. 5.2.4.2 defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit “reasonable cause for nonattendance” by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Information regarding dates of major religious holidays may be obtained through the religious liaison, Mr. Jake Karnes (859-257-2754).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused or unexcused) per university policy.

Verification of Absences:

Students may be asked to verify their absences in order for them to be considered excused. Senate Rule 5.2.4.2 states that faculty have the right to request “appropriate verification” when students claim an excused absence because of illness or death in the family. Appropriate notification of absences due to university-related trips is required prior to the absence.

Academic Integrity:

Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of *Student Rights and Responsibilities* (available online <http://www.uky.edu/StudentAffairs/Code/part2.html>) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else’s work, whether it be a published article, chapter of a book, a paper from a friend or some file, or something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a student’s assignment involves research in outside sources of information, the student must carefully acknowledge exactly what, where and how he/she employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is

plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain (Section 6.3.1).

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Accommodations due to disability:

If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address: jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.

Classroom Behavior Policies:

Please respect others during class and laboratory periods. Please pay attention and refrain from unnecessary socializing and talking. Please turn off all electronic devices (i.e. cell phones) during class time. Cell/smart phone, laptop, ipad use during class is forbidden – these are distracting and disruptive of others. Cell/smart phone/electronic resource users during class/lab periods will be asked to leave the class/lab room. Repeat offenders will not be allowed to attend class.

Schedule of Lectures
ABT 120 Genetics and Society

Lecture	Day	Date	Topic	Assignment	Reading
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Lecture - Monday/Wednesday 4:00-4:50 PM
Discussion/lab –Friday 11:00-12:50 PM

	W	8/22	Introduction to Course		
	F	8/24	Introduction to the Lab/Discussion Group		
1	M	8/27	What is Science?		Chap 1
2	W	8/29	Science and the Media Ethics and Conduct in Science	Debate topics picked	Chap 20
D	F	8/31	Organize debate teams First Genetic Cross	Debate teams assigned	
3	M	9/3	Labor Day Holiday (no class)		
4	W	9/5	What is DNA/What is a gene?		Chap 2
D	F	9/7	Debate team meetings Score F1 generation/Set up F1 Crosses		
5	M	9/10	How are genes characterized?		Chap 3
6	W	9/12	Genetics and Inheritance I		Chap 4
D	F	9/14	Debate 1 Score F2 generation		
7	M	9/17	Genetics and Inheritance II		Chap 5
8	W	9/19	The Green Revolution		Chap 6
D	F	9/21	Debate 2 Data analysis		
9	M	9/24	Molecular Genetics I		Chap 7
10	W	9/26	Molecular Genetics II		Chap 8
D	F	9/28	Debate 3 Isolation of your DNA	Lab report 1 due	
11	M	10/1	Microbial Genetic Engineering I		Chap 9
12	W	10/3	Microbial Genetic Engineering II		Chap 10
D	F	10/5	Midterm review session		
13	M	10/8	Midterm		Chap 12
14	W	10/10	Plant Genetic Engineering I		Chap 11
D	F	10/12	Debate 4 PCR reactions		
15	M	10/15	Plant Genetic Engineering II		Chap 13
16	W	10/17	Unraveling the Human Genome		Chap 14

Instructor: Dr. Joe Chappell, chappell@uky.edu; TAs: TBA

D	F	10/19	Debate 5 Gel electrophoresis		
17	M	10/22	Genotyping		Chap 15
18	W	10/24	Forensics		Chap 16
D	F	10/26	Debate 6 Bioinformatics		
19	M	10/29	Population Genetics I		Chap 17
20	W	10/31	Population Genetics II		Chap 18
D	F	11/2	Debate 7		
21	M	11/5	Human migration		Chap 19
22	W	11/7	The Personal Genome Project		Chap 20
D	F	11/9	Debate 8	Lab report 2 due	
23	M	11/12	Cloning		Chap 21
24	W	11/14	Animal Genetic Engineering I		Chap 22
D	F	11/16	Debate 9		
	M	11/19	Thanksgiving holiday (no class)		
	W	11/21	Thanksgiving holiday (no class)		
	F	11/23	Thanksgiving holiday (no class)		
25	M	11/26	Animal Genetic Engineering II		Chap 23
26	W	11/28	Human Genetic Engineering I		
D	F	11/30	Debate 10	Update report due	
27	M	12/3	Human Genetic Engineering II		
28	W	12/5	Catch-up		
D	F	12/7	Review for final		
	M	12/10	Final exam 3:30 PM		

THE DEBATES Guidelines

Introduction

A debate is a formal discussion or a contest between two groups of speakers. In a way, it is similar to a trial with the prosecution and defense presenting two sides of an issue in front of a jury. However, in debate, the contest is “won” based on contestants' knowledge, presentation and ability to persuade the judges of the validity of their arguments. In our class debates, you will be graded on quality of the sources you use for content, the coherence and logic of your arguments, and the clarity of your presentation.

As an aside, a disadvantage of the debate format is that it does not tend to promote creative problem solving or conflict resolution. Nonetheless, one advantage of the debate format is that it forces students to articulate an argument and to respond to a verbal challenge. These are important professional skills.

The “Resolution” of a Debate

The resolution is the issue of the debate. It should be stated clearly, so that:

1. It contains a statement
2. Usually it implies an alteration of the present situation (called the 'status quo'.)

For example: "*Smoking is bad*" is not a good topic for a debate, because it is purely a medical question and no change in status quo is suggested. On the other hand, "*Smoking in all public places should be prohibited*" is a better topic, because in some countries smoking is not regulated by law.

Here are the resolutions for the ABT 120 debates:

- Rice genetically engineered to produce provitamin A should be widely and freely distributed in less developed countries.
- The US should prohibit commercialization of genetically engineered plants.
- All food containing genetically engineered ingredients should be labeled as "GMO", to indicate that they are genetically modified organisms.
- The government should prohibit research to extend the human lifespan to 300 years.
- Cloning of human embryonic stem cells should be banned.
- Genetic engineering of animals to produce pharmaceuticals should be prohibited.
- The government should ban research that aims to use synthetic DNA technologies to create new life forms.
- At birth, all children should be routinely screened for genetic predisposition to treatable human diseases.
- Medical screens for genetic disorders in the human population should be not be federally or state regulated.

- All people convicted for any legal violation should be DNA fingerprinted.

On Aug. 24, 2012 in class you will be given a form to fill out to pick your preferred debate topics. Please indicate your top three choices and preference for either the affirmative or negative position. We will do our best to accommodate your preferences, but cannot guarantee it. Debate teams will be assigned by Dr. Chappell. BY Sept. 7th, 2012, YOU MUST HAVE MET WITH YOUR GROUP AT LEAST ONCE. On that date you must hand in the minutes of your meeting including the signatures of attendees and chair of your group.

Affirmative and Negative Teams

The affirmative team must defend the statement. The affirmative has some freedom in choosing how broad the statement should be extended and how specifically it should be implemented. The affirmative has to show that the change needs to be made and that their plan should be adopted.

The negative team opposes the resolution. The negative team may oppose the affirmative team's interpretation of the resolution, for example, by saying that their definition is too broad, impractical, etc. As a general rule, the negative team must challenge the affirmative plan in the debate round, but may also present its own counter-plan. Overall, the negative team has the burden of proving that either no change should be made, or that the affirmative plan is flawed and should not be adopted.

The Debate Format

The format consists of two monologues followed by questioning from an opponent (cross-examination), and then rebuttals from each team. The debate concludes with a summary from each side. Presentations are 3 minute speeches, followed immediately by cross-examination. In formal debates, no new evidence should be presented in the rebuttals (although we can be flexible about this). Each team member must give either a 3 minute presentation, a 2 minute rebuttal, or a 3 minute summary.

1A	First Affirmative (1 Speaker)	3 min
	Cross Examination period (any N team member asks questions of 1A)	2.5 min
1N	First Negative (1 Speaker)	3 min
	Cross Examination period (any A team member asks questions of 1N)	2.5 min
2A	Second Affirmative (1 Speaker)	3 min
	Cross Examination period (any N team member asks questions of 2A)	2.5 min
2N	Second Negative (1 Speaker)	3 min
	Cross Examination period (any A team member asks questions of 2N)	2.5 min
	First Negative Rebuttal (1 Speaker)	2 min
	First Affirmative Rebuttal (1 Speaker)	2 min
	Second Negative Rebuttal (1 Speaker)	2 min
	Second Affirmative Rebuttal (1 Speaker)	2 min
	Negative Team Summary (1 Speaker)	3 min
	Affirmative Team Summary (1 Speaker)	3 min

Strategy

Start by examining the given topic. You can use any resource to prepare. Think about how the resolution might be interpreted in different ways. The affirmative team must be able to support the statement. For both sides, examples are strongly recommended. A debater can use note cards for the presentation, but should not read the speech. However, writing either an outline of your speech, or writing the speech itself, may be an excellent way for you to prepare. In the debate round, some major alteration to either team's plan may occur. Still, it is better to make these changes based on written material. The second presenter is encouraged to address issues raised in the opposing team's first presentation. Partly for this reason, teams should practice in order to be prepared for the other team's arguments.

The rebuttal periods should be used to defend the issues presented in the first periods (the "constructives"), refining (summarizing and clarifying) the previous arguments, outlining the earlier debate flow, pointing out weaknesses of the rival team, etc.

Research

The evidence supporting both the negative and the affirmative sides needs to be relevant, up-to-date, to-the-point and persuasive. Sources of information may include publications, periodicals (which may contain extensive analytical articles or just useful data), and an expert in the field of interest. Providing a human aspect to the issues may be very useful. Remember, you may be challenged on the veracity of your sources.

Each team member will be required to independently find and analyze 2 references that the group will use while debating. An individual reference may not be selected by more than one member of the group. The references, along with a 400 word review of the reference articles, must be submitted to the TA one week prior to the debate. 15% of each student's course grade will be based on the quality of the written analyses of these 2 references. Please consult the "Debate review guidelines" document for detailed instructions.

Although each team will argue only one side of the resolution, both teams should research both sides of the issue. Preparation for your opponent's viewpoint will enable you to better prepare questions that can be used during cross-examination. In addition, such preparation will also give you another perspective on your own speech, will assist you in finding your own weaknesses, and will help you to develop stronger arguments.

Preparation

An inarticulate performance is unsatisfactory for both the participants and the judges. Preparing is time-consuming but worthwhile. Debating is a team event; trust, cooperation and leadership are important for success. All members of the team should have a mutual understanding of their strategy for defending or opposing the resolution, be aware of potential arguments and questions from the opponent's side and understand the role of each presentation/rebuttal in the debate.

Judging

You, the class, are the judges. Teams should be judged on logical and convincing presentation of the issues. Try to ignore your own opinions on the topic. A show of hands will determine the winning team.

Grading

A maximum of 20 points will be assigned based on the clarity (ability to articulate major points), and content (depth and breath of understanding) of your individual speeches. 10 points will be assigned to the team as a whole, based on team work and the quality of key concepts distributed to the audience (see above under "preparation"). An additional 30 points will be assigned based on the written analysis of two references selected by each student (see handout on writing of reviews).

Debate Team Meeting Minutes

This page must be turned in to TA by the end of class, (date).

Debate Resolution:

Debate Position (circle one): FOR AGAINST

Attendees: _____ (chair)

Schedule of next meeting: Date _____ Time _____

Location _____

Outline of Discussion:

ABT 120, Fall 2012
Guidelines for writing reviews of debate literature

Task: Identify two articles from the popular scientific literature on the topic of your debate. According to the guidelines, prepare a separate and brief written review of each article.

Two reviews are required, one for each article.

Your written reviews are due to the TA, by 5:00 pm 1 week prior to the debate. Late submissions will lose 10% of the maximum grade per day or fraction of a day.

Before starting to write your report, make certain that you have read each of your articles thoroughly.

Your Paper: Please provide a clear and concise review according to the following format.

- 1) In an introductory paragraph, provide a clear introduction to the article.
- 2) In the body of the review, provide a clear description of the main points covered in the article. Some of the articles you select may be primarily fact-based, while others may present a point of view. In both cases, your goal is to convey the main points covered in your article. Assume that your reader is not well informed on the topic, and your job is to provide a concise overview.
- 3) Finish the review with a succinct summary paragraph with an emphasis of your choosing.
- 4) In the "references cited section" (not part of the 400 words, see below), provide your personal assessment of the value of each article to the debate you will be conducting. Are the points or facts central to the debate topic? Do you consider the particular article to be a credible source of information -- why or why not?
- 5) Attach the articles you reviewed to the back of your reviews.

Feel free to consult with your instructors about your paper. Call or email to make an appointment. You are responsible for the veracity of the articles you select. Articles that present persuasive arguments for or against certain points of view are fine; articles that present substantially incomplete or inaccurate information are not acceptable.

Each review should be no more than **400 words in length, excluding the literature citations**. This equates to 1.5 pages at 1.5 line spacing (or 0.75 page of single spaced writing). Please use the following format: **(1) ARIAL 12 POINT FONT, (2) ONE INCH MARGINS, (3) 1.5 line spacing** in preparing your reviews. *You may not use quotes from the literature or websites -- all writing must be in your own words.*

The reviews should be prepared using a computer and printer. Hand written documents are not acceptable unless you have special circumstances that are pre-approved by the instructor. Make certain that your writing is succinct and focused -- you don't have much space to convey your message. You must turn in a hard copy of your report. Your reviews should show that you have thought carefully about the articles you have selected. Make certain your writing is well organized and that the text flows from paragraph to paragraph. Always use clear and concise language. Avoid the use of slang.

The 400-word goal for each review (800 words combined) is for your text; it does not include the literature citations. At the end of your report, list the references that you have cited.

Example:

Yount, L. 2000. Issues in Biotechnology and genetic engineering, p. 3-25.
Biotechnology and Genetic Engineering. Facts on File, Inc. N.Y., N.Y.

After each citation, include your personal evaluation of how reliable the source is, see above.

You may NOT copy or paraphrase parts of other students' reviews. If we discover this has been done, we will automatically award an "E" to ALL students concerned.

The reviews are due at 5:00 pm 1 week prior to the debate, as described above. You are encouraged to turn the assignment in early. Late submissions will lose 10% of the maximum grade per day or fraction of a day.

Your reviews will be graded on your ability to:

- 1) follow instructions and answer all questions;
- 2) provide a well-rounded yet concise review of your articles (considering space limitations);
- 3) maintain a high quality of analysis;
- 4) be well organized and succinct in your presentation;
- 5) evaluate the quality of your citations.

ABT120 DEBATE WRITING ASSIGNMENT GRADING SHEET

<u>Points</u>	<u>Grading Criteria (Max Points)</u>
_____	References (6) Points deducted if complete articles were not attached (abstracts only are not acceptable), were not from a credible source, or were not cited properly. _____
_____	Organization/Stayed on Topic (6) Points deducted if paper was exceedingly short or significantly over 400 words or if report was off-topic. _____
_____	Understanding of Subject (5) (How well you understood the subject matter and the reference articles.) _____
_____	Clarity of Writing (5) (How well you were able to communicate the information to the reader.) _____
_____	Grammar/Spelling (5)
_____	Posted to Blackboard on time (3)
=====	
_____	TOTAL (30)

Comments:

Other general comments:

- Some might refer to the book, *Genome*, as a novel. Please be aware that the word “novel” refers to fiction, so *Genome* is not a novel.
- When citing an article, do not rearrange the order of the authors. In particular, do not put them in alphabetical order. Always cite a reference by the first author.

ABT 120, Fall 2012 Guidelines for Genome Update Written Report

Task: Update a topic from the book, *Genome*, using recently published scientific books and/or review literature.

Your submission is to be posted to BlackBoard by 5:00 pm on (date). A printed report and copies of three key reference articles are to be submitted to TA by 5:00 pm on the following day (date). Late submissions will lose 10% of the maximum grade per day or fraction of a day.

Background to the assignment: The book, *Genome*, was written in 1999-2000. While it provides an excellent discussion of human genetics, the scientific knowledge of this subject continues to grow each year. In this assignment, each student will choose a topic that is discussed in the book, and will research that topic to understand and explain recent developments.

On the BlackBoard site, research topics for each chapter have been listed. Each topic is to be researched by only one student. When you have selected your topic, please claim it by posting a statement on BlackBoard (see example on following page). Other students may not research a topic that has already been claimed. (Note: some topics are scientists whose research is discussed in the book.)

Before starting your research, make certain that you have thoroughly read and understand the chapter(s) of the book that discuss the topic. Feel free to consult with your instructors about this assignment.

Finding research material: You must read and understand a minimum of two references on your topic. To begin the literature search, use the posted topic keywords to search NCBI Pubmed (<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=search&DB=pubmed>). When performing the Pubmed search, limit the responses to those articles published in the “Last 5 Years” (see screenshots at the end of these guidelines). You may limit your search to review articles. After performing a Pubmed search, you may also wish to

consult the NCBI Bookshelf and other sources such as Google Scholar and databases available through the library. However, make sure that the key references you cite have been published no earlier than 2006. Before starting to write your report, make certain that you have read each of your references thoroughly.

Format of the report: Please provide a clear and concise discussion of the topic according to the following format:

- 1) In an introductory paragraph, provide a clear introduction to the topic. Follow this by one or two paragraphs summarizing, in your own words, the discussion of the topic in the Genome book, explaining how it relates to human genetics. To put the topic in perspective may require the incorporation of ideas from more than one chapter of the book.
- 2) In the body of your writing, discuss the developments that have taken place since the book was published. Assume that your reader is not well informed on the topic, and your job is to provide a concise overview. Have any breakthroughs taken place? Have certain hypotheses been disproved?
- 3) Finish the update with a succinct summary paragraph with an emphasis of your choosing. You may wish to describe future research that is taking place or will be needed to further understand the subject.
- 4) In the "References Cited" section (not part of the 500 words, see below), list the sources you used in your research. Copies of the abstract of the two key references are to be included as part of your report.

Each report should be no more than 500 words in length, excluding the literature citations. This equates to 2 pages at 1.5 line spacing. Please use the following format: (1) ARIAL 12 POINT FONT, (2) ONE INCH MARGINS, (3) 1.5 line spacing in preparing your reports. *You may not use quotes from the literature or websites – all writing must be in your own words.*

The reports should be prepared using a computer and printer. Hand written documents are not acceptable unless you have special circumstances that are pre-approved by the instructor. Make certain that your writing is succinct and focused – you don't have much space to convey your message. Your writing should show that you understand and have thought carefully about the topic you have selected. Make certain your writing is well organized and that the text flows from paragraph to paragraph. Always use clear and concise language. Avoid the use of slang or jargon.

At the end of your report, list the references that you have cited.

Example:

Forman, M.S., Trojanowski, J.Q. and Lee, V. M.-Y. 2004. Neurodegenerative diseases: a decade of discoveries paves the way for therapeutic breakthroughs. Nature Medicine 10:1055-1063.

Submitting your report: The completed assignment is to be posted on the class BlackBoard website, on the page corresponding to the chapter and topic you have chosen. Your report must be posted by 5:00 pm on Nov. 30. Late submissions will lose 10% of the maximum grade per day or fraction of a day.

Grading: Your written reports will be graded on your ability to:

- 1) follow these instructions and answer all questions;
- 2) provide a well-rounded yet concise discussion of the topic (considering space limitations);
- 3) maintain a high quality of analysis;
- 4) be well organized and succinct in your writing.

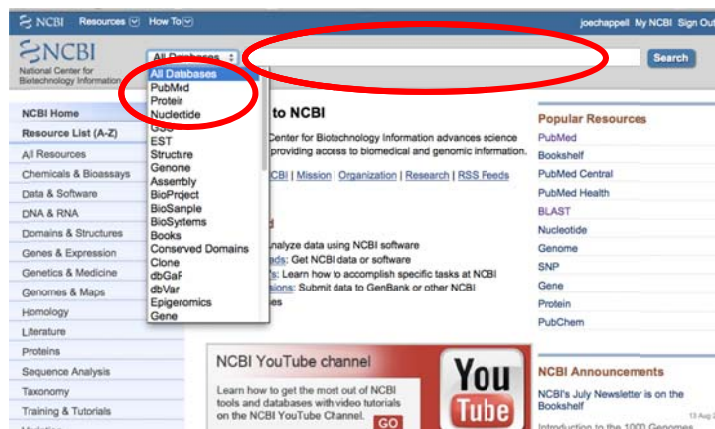
Selecting and claiming a topic: Each student must choose a topic that has not been claimed by any other student. You may NOT collaborate with other students to complete this assignment. If we discover this has been done, we will automatically award an "E" to ALL students concerned.

How to limit your Pub med search:

Go to the URL:

<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=search&DB=pubmed>

On the first page, click the select PubMed, then enter a search query:



Show additional filters

- Text availability**
 Abstract available
 Free full text available
 Full text available
- Publication dates**
 5 years
 10 years
 Custom range...
- Species**
 Humans

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Results: 1 to 20 of 510 << First < Prev Page 1 of 26 Next > Last >>

- [Effects of taraxasterol on inflammatory responses in lipopolysaccharide-induced RAW 264.7 macrophages.](#)
 Zhang X, Xiong H, Liu L.
 J Ethnopharmacol. 2012 May 7;141(1):206-11. Epub 2012 Feb 17.
 PMID: 22366673 [PubMed - indexed for MEDLINE]
[Related citations](#)
- [Antioxidant, antiglycation and inhibitory potential of Saraca ashoka flowers against the enzymes linked to type 2 diabetes and LDL oxidation.](#)
 Prathapan A, Nanpothiri SV, Mini S, Raghu KG.
 Eur Rev Med Pharmacol Sci. 2012 Jan;16(1):57-65.
 PMID: 22338549 [PubMed - indexed for MEDLINE]

39 free full-text articles in PubMed Central

Spatial mapping of lipids at cellular resolution in embryo [Plant Cell. 201: ...]
 Physiological and proteomic approaches to evalu [J Exp Bot. 201: ...]
 Brassinosteroids inhibit pathogen-asso [Proc Natl Acad Sci U S A. 201: ...]
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Clear all

- Text availability**
 Abstract available
 Free full text available
 Full text available
- Publication dates** clear
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 10 years
 Custom range...
- Species**
 Humans
 Other Animals

Display Settings: Summary, 20 per page, Sorted by Recently Added

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Filters: Manage Filters

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Filters activated: published in the last 5 years Clear all

- [Effects of taraxasterol on inflammatory responses in lipopolysaccharide-induced RAW 264.7 macrophages.](#)
 Zhang X, Xiong H, Liu L.
 J Ethnopharmacol. 2012 May 7;141(1):206-11. Epub 2012 Feb 17.
 PMID: 22366673 [PubMed - indexed for MEDLINE]
[Related citations](#)
- [Antioxidant, antiglycation and inhibitory potential of Saraca ashoka flowers against the enzymes linked to type 2 diabetes and LDL oxidation.](#)
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 Physiological and proteomic approaches to evalu [J Exp Bot. 201: ...]
 Brassinosteroids inhibit pathogen-asso [Proc Natl Acad Sci U S A. 201: ...]
 See all (39)

Find related data

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ABT120 GENOME UPATE ASSIGNMENT GRADING SHEET

<u>Points</u>	<u>Grading Criteria (Max Points)</u>
_____	References (3) Points deducted if abstracts are not attached, were published earlier than 2006, were not from a credible source, or were not cited properly. _____
_____	Organization/Stayed on Topic (3) Points deducted if paper was exceedingly short or significantly over 500 words, if discussion of new developments was only a small portion of the report, or if report was off-topic. _____
_____	Understanding of Subject (5) (How well you understood the subject matter and the reference articles.) _____
_____	Clarity of Writing (5) (How well you were able to communicate the information to the reader.) _____
_____	Grammar/Spelling (2)
_____	Posted to BlackBoard (2)
=====	
_____	TOTAL (20)

Comments:

Other general comments:

- Some may refer to the book, *Genome*, as a novel. Please be aware that the word “novel” refers to fiction, so *Genome* is not a novel.
- When citing an article, do not rearrange the order of the authors. In particular, do not put them in alphabetical order. Always cite a reference by the first author.