

OCT 11 2012

OFFICE OF THE SENATE COUNCIL

Courses	Distance Learning	Syllabus	Request Tracking
---------	-------------------	----------	------------------

Course Change Form

https://myuk.uky.edu/sap/bc/soaprfc?services=

Open in full window to print or save

Attachments:

Browse...

ID	Attachment
Delete: 410	150SYL summer 2013.doc
Delete: 772	DL form BIO 150.doc

First : 1 Last

Select saved project to retrieve...

NOTE: Start form entry by choosing the Current Prefix and Number (*denotes required fields)

Current Prefix and Number:	BIO - Biology BIO 150 - PRIN OF BIOLOGY I	Proposed Prefix & Number:	BIO 150
What type of change is being proposed?		<input type="checkbox"/> Major Change <input checked="" type="checkbox"/> Major - Add Distance Learning Minor - change in number within the same hundred series, exception 600-799 is the same "hundred series" Minor - editorial change in course title or description which does not imply change in content or emphasis Minor - a change in prerequisite(s) which does not imply a change in course content or emphasis, or which is made necessary by the elimination or significant alteration of the prerequisite(s) Minor - a cross listing of a course as described above	
Should this course be a UK Core Course? <input type="radio"/> Yes <input checked="" type="radio"/> No If YES, check the areas that apply: <input type="checkbox"/> Inquiry - Arts & Creativity <input type="checkbox"/> Composition & Communications - II <input type="checkbox"/> Inquiry - Humanities <input type="checkbox"/> Quantitative Foundations <input type="checkbox"/> Inquiry - Nat/Math/Phys Sci <input type="checkbox"/> Statistical Inferential Reasoning <input type="checkbox"/> Inquiry - Social Sciences <input type="checkbox"/> U.S. Citizenship, Community, Diversity <input type="checkbox"/> Composition & Communications - I <input type="checkbox"/> Global Dynamics			
1. General Information			
a. Submitted by the College of:		College of Arts & Sciences	Today's Date: 10/12/2012
b. Department/Division:		Biology	
c.* Is there a change in 'ownership' of the course? <input type="radio"/> Yes <input checked="" type="radio"/> No If YES, what college/department will offer the course instead? Select...			
e.* Contact Person Name:		Ruth E Beatta	Email: rbeat1@uky.edu Phone: 859-257-7647
* Responsible Faculty ID (if different from Contact)			Email: Phone:
f.* Requested Effective Date:		<input checked="" type="checkbox"/> Semester Following Approval	OR Specific Term: ²
2. Designation and Description of Proposed Course.			
a. Current Distance Learning(DL) Status:		<input type="checkbox"/> N/A <input type="checkbox"/> Already approved for DL* <input checked="" type="checkbox"/> Please Add <input type="checkbox"/> Please Drop	
*If already approved for DL, the Distance Learning Form must also be submitted unless the department affirms (by checking this box) that the proposed changes do not affect DL delivery.			
b. Full Title:		PRINCIPLES OF BIOLOGY I	Proposed Title: * PRINCIPLES OF BIOLOGY I
c. Current Transcript Title (if full title is more than 40 characters):		PRIN OF BIOLOGY I	
c. Proposed Transcript Title (if full title is more than 40 characters):		PRIN OF BIOLOGY I	
d. Current Cross-listing:		<input checked="" type="checkbox"/> N/A	OR Currently ³ Cross-listed with (Prefix & Number): none
Proposed - ADD ³ Cross-listing (Prefix & Number):			

Proposed – REMOVE ^{3,4} Cross-listing (Prefix & Number):					
e. Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours ⁵ for each meeting pattern type.					
Current:	Lecture 3	Laboratory ⁵	Recitation	Discussion	Indep. Study
	Clinical	Colloquium	Practicum	Research	Residency
	Seminar	Studio	Other: _____ Please explain: _____		
Proposed: *	Lecture 3 when taught in class	Laboratory ⁵	Recitation	Discussion	Indep. Study
	Clinical	Colloquium	Practicum	Research	Residency
	Seminar	Studio	Other: 3 _____ Please explain: online 25hrs wk for 4 wks		
f. Current Grading System:		ABC Letter Grade Scale			
Proposed Grading System:*		<input checked="" type="radio"/> Letter (A, B, C, etc.) <input type="radio"/> Pass/Fail			
g. Current number of credit hours:		3	Proposed number of credit hours:*		3
h.* Currently, is this course repeatable for additional credit?					<input type="radio"/> Yes <input checked="" type="radio"/> No
* Proposed to be repeatable for additional credit?					<input type="radio"/> Yes <input checked="" type="radio"/> No
If YES:	Maximum number of credit hours:				
If YES:	Will this course allow multiple registrations during the same semester?				<input type="radio"/> Yes <input checked="" type="radio"/> No
i. Current Course Description for Bulletin:					
The first semester of an integrated one-year sequence (BIO 150 and BIO 152) that is designed to develop an appreciation of biological principles necessary to explore life at the cellular and molecular levels. Similarities and differences in structure and function of simple and complex cells will be covered along with theories on the origin and evolution of biological systems.					
* Proposed Course Description for Bulletin:					
The first semester of an integrated one-year sequence (BIO 150 and BIO 152) that is designed to develop an appreciation of biological principles necessary to explore life at the cellular and molecular levels. Similarities and differences in structure and function of simple and complex cells will be covered along with theories on the origin and evolution of biological systems.					
j. Current Prerequisites, if any:					
Prereq: CHE 105, or Math ACT of 26 or above and concurrent enrollment in CHE 105, or chemistry placement test plus concurrent enrollment in CHE 105.					
* Proposed Prerequisites, if any:					
Prereq: CHE 105, or Math ACT of 26 or above and concurrent enrollment in CHE 105, or chemistry placement test plus concurrent enrollment in CHE 105.					
k. Current Supplementary Teaching Component, if any:			<input type="radio"/> Community-Based Experience <input type="radio"/> Service Learning <input type="radio"/> Both		
Proposed Supplementary Teaching Component			<input type="radio"/> Community-Based Experience <input type="radio"/> Service Learning <input type="radio"/> Both <input type="radio"/> No Change		
3. Currently, is this course taught off campus?					<input type="radio"/> Yes <input checked="" type="radio"/> No
* Proposed to be taught off campus?					<input type="radio"/> Yes <input checked="" type="radio"/> No
If YES, enter the off campus address: _____					

4.* Are significant changes in content/student learning outcomes of the course being proposed?		<input type="radio"/> Yes <input type="radio"/> No
If YES, explain and offer brief rationale:		
6. Course Relationship to Program(s).		
a.* Are there other depts and/or pgms that could be affected by the proposed change?		<input type="radio"/> Yes <input type="radio"/> No
If YES, identify the depts. and/or pgms:		
b.* Will modifying this course result in a new requirement² for ANY program?		<input type="radio"/> Yes <input type="radio"/> No
If YES ² , list the program(s) here:		
6. Information to be Placed on Syllabus.		
a.	<input type="checkbox"/> Check box if changed to 400G or 500.	If changed to 400G- or 500-level course you must send in a syllabus and you must include the differentiation between undergraduate and graduate students by: (i) requiring additional assignments by the graduate students, and/or (ii) establishing different grading criteria in the course for graduate students. (See SR 3.1.4.)

¹ See comment description regarding minor course change. Minor changes are sent directly from dean's office to Senate Council Chair. If Chair deems the change as "not minor," the form will be sent to appropriate academic Council for normal processing and contact person is informed.
² Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.
³ Signature of the chair of the cross-listing department is required on the Signature Routing Log.
⁴ Removing a cross-listing does not drop the other course – it merely unlinks the two courses.
⁵ Generally, undergrad courses are developed such that one semester hr of credit represents 1 hr of classroom meeting per wk for a semester, exclusive of any lab meeting. Lab meeting generally represents at least two hrs per wk for a semester for 1 credit hour. (See SR 5.2.1.)
⁶ You must also submit the Distance Learning Form in order for the course to be considered for DL delivery.
⁷ In order to change a program, a program change form must also be submitted.

SYLLABUS Summer 2013

BIO 150 - Principles of Biology I

Summer 2013

Instructor: Dr. Ruth E. Beattie

Office: 219 T. H. Morgan Building

Telephone: 257-7647

E-Mail: rebeat1@uky.edu

Office Hours Generally the fastest way to contact me is through e-mail. I check my e-mail regularly during the day (M-F). E-mails received before 5pm on a weekday will generally be responded to on that day. E-mails received after 5pm will generally be responded to by 9am the following morning. E-mails received after 5pm on Friday will be responded to within 24 hours. For face-to-face, telephone or SKYPE appointments: e-mail me to set up a meeting time.

Use and check your UK e-mail regularly. This is the only address that will be used to communicate with you. Do not forward your e-mail to another account. The anti-spam software for many e-mail accounts (yahoo, hotmail, etc) will not deliver mail that has been sent to multiple addresses. All class communications are sent to all students in the class and so are filtered out by yahoo, hotmail etc. You are responsible for all information sent out to the class through e-mail... so use your UK e-mail account and check it often (2 – 3 times a day at least).

Students will be able to communicate with each other and with the Instructor through the discussion feature in Blackboard. Instructions will be given on the first day of class.

Class Time and Location:

ONLINE: go to: MyUK and log into Blackboard using your LINK BLUE username and password.

Minimum Technology Requirements:

In order to participate in this course, you will need access to a computer with the minimum hardware, software and internet configuration described at this site:

<http://www.uky.edu/DistanceLearning/online/technical.php>

You will need to have access to a computer for 5 – 6 hours each DAY.

Note: the use of Internet Explorer is NOT recommended for use with Blackboard. Check this weblink to determine the optimum operating requirements for your computer.

<http://www.uky.edu/DistanceLearning/online/technical.php>

You will need to install a number of plugins on your computer. The links to the specific plugins required for this course can be found in MODULE 1 of the COURSE MATERIALS section of the course. If using a UK computer these plugins should already be installed.

If you experience technical difficulties with accessing course materials, the Customer Service Center may be able to assist you. Their hours are 7am – 6pm Monday through Friday. You may reach them at 859-257-1300 or by e-mail at helpdesk@uky.edu. Please also inform the course instructor when you are having technical difficulties.

Walk-In Assistance for Students

IT Customer Service Center, 111 McVey Hall

- Monday through Friday 7 AM - 6 PM Student Center, Room 255
- Monday through Friday 10 AM - 6 PM The Hub at WT Young Library
- Sunday through Thursday 1 PM - 10 PM

SCS Computer Labs on campus can also help with log in and access problems.

Textbook:

Required

1. Biological Science with MasteringBiology®, 4/e Freeman ©2011 | Benjamin Cummings ISBN-10: 0321597966 | ISBN-13: 9780321597960

Books may be purchased from the following stores.

- Kennedy Bookstore, 405 S. Limestone, (606) 252-0331 or 1-800-892-5165, or go to the website: <http://www.kennedys.com>
- Wildcat Text Books, 563 S. Limestone, (606) 225-7771, or go to the website: <http://www.wildcattext.com>
- UK Bookstore 106 Student Center Annex, phone (606) 257-6304 or 1-800-327-6141, or go to the website: <http://www.ukbookstore.com>

DO NOT PURCHASE A USED COPY OF MASTERING BIOLOGY

If you purchase a used copy of the textbook you will need to purchase the Mastering Biology access directly from the Mastering site (see instructions at end of syllabus).

Distance Learning Library Services

As a Distance Learning student you have access to the Distance Learning Library services at <http://www.uky.edu/Libraries/DLLS>.

This service can provide you access to UK's circulating collections and can deliver to you manuscripts or books from UK's library or other libraries. The DL Librarian may be reached at 859-257-0500, ext 2171, or 800-828-0439 (option #6) or by mail at dlservice@email.uky.edu. For an interlibrary loan visit: http://www.uky.edu/Libraries/linpage.php?lweb_id=253&lilib_id=16

Course Description: This course is an introductory course designed to develop an understanding and appreciation of the basic biological principles used in exploring life at the molecular and cellular levels. The concepts of molecular structure and function will be applied to the structure and function of the cell. Similarities and differences in structure and function of the prokaryotic and eukaryotic cell will be covered along with the origin and evolution of biological systems

Course Goals and Learning Outcomes: A complete copy of the course goals and learning outcomes are attached to this syllabus.

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

"Attendance":

All course materials are on-line and it is YOUR responsibility to access material in a timely manner. To help keep you on track I have provided a LECTURE SCHEDULE that you should follow. The lecture schedule is posted on

BlackBoard in the COURSE INFORMATION section of Blackboard. You are expected to spend a MINIMUM of 5 - 6 hours per DAY on-line interacting with the course material.

Reading Assignments:

Reading assignments are listed on the lecture outline. **All assigned readings are potential exam material whether covered online, or not.**

Getting Started: Log into your Blackboard (Bb) account

- 1) Access the course syllabus: The course syllabus can be viewed by clicking on the red COURSE INFORMATION button and then clicking on SYLLABUS. I would recommend you print out a copy of the syllabus for future reference. **Make a note of all deadlines.**
- 2) This is a 3 credit hour course taught exclusively through the web. All course materials are on-line and it is YOUR responsibility to access material in a timely manner. To help keep you on track I have provided a LECTURE SCHEDULE that you should follow. The lecture schedule is detailed in the COURSE SYLLABUS. This is a difficult course and it is imperative that you stay up-to-date with the lecture material. Do not procrastinate and leave material to the last minute. You are expected to spend a MINIMUM of 5 - 6 hours per DAY on-line interacting with the course material. Take some time to familiarize yourself with navigating through the course material. The course is divided into 19 modules (found by clicking on the blue COURSE MATERIALS button). Each module consists of multiple files. These files are in a variety of forms: PowerPoint, word documents, web links, QuickTime movies, Authorware files, etc. As you work through the course materials you should take notes the same way you would for a "regular" lecture course. Additional course material is available on Mastering Biology
- 3) Please be aware that some files that you will be downloading are fairly large and may take a while (several minutes) to download especially if you are accessing the course material using a modem or a slow broadband connection.
- 4) Given that all course material is delivered through the Internet, occasional problems may arise with accessing course material. If you have problems accessing course material, or if web links appear to be not functioning, please contact me and I will get the problem rectified as quickly as possible.
- 5) Recommended first actions:
 - (1) Print out a copy of the syllabus
 - (2) Do the VARK questionnaire (link in module 1)
 - (3) Begin work on module 1 - (if working on your home /dorm computer - download all of the plug-ins listed in module 1).
 - (4) Log into Mastering Biology and get your online account set up.

Grading

Exams during the semester (2 total)	2 x 100 = 200	points
Final Exam	100 = 100	points
Assignments (12 total)	12 x 10 = 120	points

420 points possible

Final grades will be based on total points earned and will be assigned as follows:

- A = 357 - 420 points
- B = 315 - 356.9 points
- C = 273 - 314.9 points
- D = 231 - 272.9 points
- E = less than 231 points

NOTE: There will be NO curving of scores

All examination scores will be posted in the BlackBoard grade book: You can review your scores by going to MY GRADES in BlackBoard (click on TOOLS first).

Examinations:

Detailed exam reviews can be found on the course Blackboard web pages (Click on the EXAMINATIONS button). Exams will consist of 50 questions (multiple-choice, and possibly some true/false questions).

Last day to withdraw from the course XXX – This is the last day to withdraw from the University or reduce course load. Students can withdraw or reduce course load after this date only for “urgent non-academic reasons.” Midterm grades will be available May 21, 2013

Examination Schedule: (all times are Lexington, KY time)

- Examination 1: Thursday May 16, 2013 from 8am – 9am
Examination 2: Tuesday May 28, 2013 from 8am – 9am
Examination 3: Final Exam Tuesday June 4, 2013 from 8am – 9am

All examinations will be administered online during the above time periods. Please arrange work schedules accordingly. Problems associated with parking, traffic, library services, loss of wireless signal, computer lab availability, family commitments (including attending weddings), travel itineraries, procrastination, over-sleeping or forgetfulness are not acceptable excuses for missing an examination.

Make-up exams will only be given for excused absences as defined by University Senate Rules V, 2.4.2 and will consist of multiple-choice questions. Make-up exams will be administered at a single scheduled time. Make-up exams are scheduled for Monday June 3, 2013 from 8am – 9am in BS 202 (on campus). This is the ONLY time make-up exams will be administered. A missed exam will result in a score of zero for that exam, unless an **acceptable** written excuse is presented **at the next class meeting.**

Exam scores will be posted in the grade book on BlackBoard by 5pm on the day of an exam.

Check the Information on Examinations in the EXAMSINATIONS section of Blackboard to confirm the topics/chapters covered on each examination. The posted “lecture” schedule usually has students working a little bit ahead of the exam schedule so that there is adequate time to process information before each exam.

ONLINE EXAMINATION INFORMATION

The **online exams** will be submitted electronically through Mastering Biology and must be submitted by the stated deadline (9.00am). Each examination will consist of 50 multiple-choice or true/false questions. Each examination will be available beginning at 8am on the examination date. It is your responsibility to make sure that you access the material during that time period. You can only access the examination once. Once you access an examination you have **50 minutes** in which to complete and submit it (the latest you should access an online examination is 8.08am). If you go over the time you will not be able to submit it and will receive an automatic score of zero for any questions not answered by that time. There is a timer on the examination page - **it is your responsibility to watch the time and submit the examination in time.**

The questions on the examination will be sequenced. You must submit an answer for the first question before you can move to the second question. The first answer you submit is the answer used in the determination of your grade – you cannot go back and change an answer once it has been submitted.

The online examination is an open book examination. Note: You have 50 minutes to answer 50 questions. Make sure you know the exam material before you start each examination as this 50-minute limit does not provide

much time for looking up information. Online examinations will be automatically graded and your score will be available after the due time (9.00am).

If you encounter problems when taking an exam: First try calling me at 257-7647 - I will be in my office during the entire examination period. If you are unable to contact me by phone, send me an e-mail and include a phone number where you can be reached. I will contact you ASAP.

Assignments

There are twelve assignments, which contribute towards your final grade. The specifics of each assignment are detailed on the course BlackBoard web pages (Click on ASSIGNMENTS). The assignments are administered through **Mastering Biology**. Each assignment will be available from the beginning of the semester. It is YOUR responsibility to ensure that you access each assignment in a timely manner so that you have enough time to adequately complete the assigned work.

Each assignment will normally consist of several interactive activities and tutorials that you will be required to work through. After you complete the activities/tutorials you will then answer some multiple choice questions. Each assignment is sequenced – you have to work through the activities in the set sequence – you cannot skip parts and jump ahead. Allow at least one hour to complete each assignment. It is important you check Blackboard for assignment format before beginning any assignment in Mastering Biology. Note: The first answer that you submit for any question is the answer used in the determination of your score for that assignment. You cannot go back and change an answer at a later date (even if it is before the deadline). Take your time and answer each question carefully.

WARNING: Once the deadline for submission of an assignment has passed, you will no longer be able to submit the assignment for a SCORE. The computer is very unforgiving – if you go past the deadline by even one second you will not receive a score for any questions not answered by the deadline. The computer/ software records the time of submission for the instructor.

Problems associated with parking, traffic, library services, loss of wireless signal, computer lab availability, family commitments (including attending weddings), travel itineraries, procrastination, oversleeping or forgetfulness are not acceptable excuses for late submission of assignments. It is YOUR responsibility to make sure that assignments are submitted on time. **If you leave submitting the assignment to the last minute and then get caught out by unexpected events – this is not considered an excused late submission.** If you are participating in a university-approved event on a due date, then you must submit the assignment before you leave campus/start that activity.

Submission of late assignments will only be permitted for excused absences as defined by University Senate Rules V, 2.4.2.. WRITTEN SUPPORTING DOCUMENTATION regarding the late submission of an assignment MUST be presented to the course instructor within one week after a student returns to class/online after the excused absence otherwise an automatic score of zero will be earned for the assignment.

Scores for assignments will be available in Mastering Biology immediately following the deadline for submission of an assignment (10.00pm on due date). These scores will be transferred to the BlackBoard gradebook within 24 hours of the deadline for submission of a particular assignment.

If you have a concern regarding your posted score for an assignment or exam, you have 1 week from the day the scores are posted (in Blackboard) to contest that score. After one week the score remains as posted. It is your responsibility to check your scores in a timely manner and to follow-up immediately if you have a concern.

Due Dates/Times for Assignments

Assignment Number	Due Date Submission deadline is 10.00pm (Lexington, KY time) on the due date
Assignment #1	Friday May 10, 2013
Assignment #2	Monday May 13, 2013
Assignment #3	Tuesday May 14, 2013
Assignment #4	Wednesday May 15, 2013
Assignment #5	Friday May 17, 2013
Assignment #6	Monday May 20, 2013
Assignment #7	Tuesday May 21, 2013
Assignment #8	Wednesday May 22, 2013
Assignment #9	Thursday May 23, 2013
Assignment #10	Friday May 24, 2013
Assignment #11	Wednesday May 29, 2013
Assignment #12	Thursday May 30, 2013

Mastering Biology (MB)

Mastering Biology is an online learning environment that provides an extensive array of review materials for the course. Each student is REQUIRED to have a Mastering Biology account. You cannot share your account with another student in the class. All assignments are administered through Mastering Biology (MB). Failure to set up your MB account will result in automatic scores of zero for the assignments.

To set up your MB account: follow the instructions on the last page of this syllabus.

In order to facilitate your introduction to the use of MB, there is a short (4 point) extra credit assignment available on MB. This assignment consists of four activities (each worth one point) that take you through how to use the various features of MB. In order to earn these four extra credit points you must complete the exercises and submit the results by 12 noon on the 8th September 2011. You can still complete the exercise after that date but will no longer be eligible to earn the extra credit points.

Course Policy on Civility and Decorum:

The university, college and department all have a commitment to respect the dignity of all and to value differences among members of our academic community. There exists the role of discussion and debate in academic discovery and the right of all to respectfully disagree from time-to-time. Students clearly have the right to take reasoned exception and to voice opinions contrary to those offered by the instructor and/or other students (S.R. 6.1.2). Equally, a faculty member has the right -- and the responsibility -- to ensure that all academic discourse occurs in a context characterized by respect and civility. Obviously, the accepted level of civility would not include attacks of a personal nature or statements denigrating another on the basis of race, sex, religion, sexual orientation, age, national/regional origin or other such irrelevant factors.

***A Note Concerning Academic Offenses (READ THIS INFORMATION CAREFULLY)

PLAGIARISM and CHEATING are serious academic offenses.

The following is an excerpt taken from the "*Students Rights and Responsibilities Handbook, University of Kentucky*" regarding cheating.

"Cheating is defined by its general usage. It includes, but is not limited to, the wrongful giving, taking, or presenting any information or material by a student with the intent of aiding himself/herself or another on any academic work which is considered in any way in the determination of the final grade."

The following is an excerpt taken from the "**Students Rights and Responsibilities Handbook, University of Kentucky**" regarding plagiarism.

"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.

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 acknowledgment of the fact, the students are guilty of plagiarism.

*Plagiarism includes reproducing someone else's work..... 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."*

Charges of an academic offense will be made against any student that cheats or commits plagiarism. Penalties for such an offense will be assessed according to University Regulations regarding Academic Offenses. The most severe penalties include suspension or dismissal from the University. **I have a zero-tolerance policy regarding academic offenses.**

NOTE* In addition to the circumstances listed above, the following activities are considered evidence of cheating:

- 1) **Any talking** to another student during an examination.
- 2) **Looking** at another students work during an examination, or **allowing** another student to look at your work.

BIO 150, PRINCIPLES OF BIOLOGY 1

Course Goals

The student will develop an appreciation and understanding of the fundamental principles (with emphasis on molecular, cellular, evolutionary principles) which unify all life.

The student will develop an understanding of the methods and processes of scientific inquiry.

The student will be prepared for advanced courses in cell biology and genetics.

The student will recognize the contributions of biology to modern society.

The student's needs will be met by fostering the development of critical thinking, reasoning, and problem-solving skills, scientific attitudes and values.

The student will be prepared to make responsible decisions about social issues that relate to science, technology, the environment and health, such as aging, cancer, drugs, energy, genetic engineering, heredity and nutrition.

BIO 150, Principles of Biology I, Student Learning Outcomes

At the completion of the course, the student should be able to:

Scientific Methods and Tools of Science

1. Demonstrate an understanding of the role of scientific method in scientific investigation.
2. Analyze and interpret data from a given graph or figure.
3. Relate pH scale to hydrogen ion concentration.

Organizing Concepts

4. List the fundamental characteristics of living organisms and discuss the principles that unify living organisms.
5. Discuss the five kingdom and three domain system of classification of organisms, and give the criteria used to assign members to each kingdom/domain.
6. Arrange in order the following categories of classification: domain/ kingdom, phylum, class, order, family, genus, species.
7. Discuss the various factors involved in natural selection as a mechanism of evolution.

The Chemistry of Life

8. Be able to use the periodic table to determine the electronic configuration, chemical properties and method of bonding of a particular atom
9. Discuss the role of the following bond types, ionic, covalent, hydrogen and hydrophobic, in the structure of biomolecules.
10. Discuss the likelihood of the formation of hydrogen bonds between two given molecules and the importance of hydrogen bonds as they relate to the properties of water.
11. Identify hydrophobic and hydrophilic functional groups (hydroxyl, amino, methyl, carbonyl, carboxyl, sulfhydryl, phosphate), and polar and nonpolar bonds. Relate their structure to their function.
12. Identify the four groups of biomolecules. Discuss the relationship between the structure and function of the molecules in each group.
13. Demonstrate how macromolecules are formed and how they are broken down.
14. Predict the solubility of compounds in hydrophilic and hydrophobic solvents.
15. Describe the chemical conditions that are believed to have existed on earth at the time of the origin of life. Discuss the steps by which life may have originated from organic monomers.
16. Discuss how the evolution of the first organisms led to changes in those early chemical conditions.

The Cell - Structure and Function

17. Compare and contrast the structure of prokaryotic and eukaryotic cells, and plant and animal cells.

18. Relate the structure of major cell organelles to their function.
19. Describe the role of key organelles in cellular processes such as protein manufacture and secretion.
20. Discuss the evolution of eucaryotes.

Membrane Structure and Function

21. Relate membrane structure to membrane function.
22. Predict the effect of exposing cells to solutions of differing solute concentration and describe the solute concentration in terms of hypertonic, isotonic and hypotonic.
23. Describe diffusion, facilitated diffusion and osmosis and cite examples of each process.
24. Compare and contrast passive transport process with active transport processes.

Cellular Respiration - Harvesting Chemical Energy

25. Cite the First and Second Laws of Thermodynamics and explain how they relate to biological systems.
26. Discuss the role of different kinds of energy (potential and kinetic) and different forms of energy (chemical, electrical, heat, mechanical) in biological systems. Discuss caloric content of food.
27. Given equations, energy diagrams, and/or values for ΔG , identify reactions as endergonic or exergonic.
28. Define oxidation and reduction and relate these processes to energy gain or loss.
29. Discuss the role of ATP as the energy currency of the cell.
30. Describe how an enzyme changes the rate of a chemical reaction. Relate enzyme specificity of action to enzyme structure.
31. Describe how environmental changes influence enzyme activity.
32. Discuss the relationship between mitochondrial structure and its function in cellular respiration.
33. Cite the role of key compounds in glycolysis and Krebs cycle.
34. Describe ATP production by chemiosmotic phosphorylation.
35. Compare and contrast ATP production via substrate-level phosphorylation with ATP production via oxidative phosphorylation.
36. Discuss the role of NADH and FADH₂ in ATP production.
37. Compare and contrast aerobic respiration processes with anaerobic processes in terms of energy yield, final electron acceptor, type of phosphorylation involved and availability of oxygen.

Photosynthesis

38. Discuss the relationship between chloroplast structure and its function in photosynthesis.
39. Relate wavelength of light to energy.

40. Discuss the relationship between the absorption spectrum and the action spectrum for the pigments of any given plant.
41. Compare and contrast cyclic and noncyclic photophosphorylation.
42. Describe the relationship between the light and dark reactions of photosynthesis.
43. Explain the roles of key compounds in photosynthesis.
44. Predict the effects of environmental changes (amount and type of light, carbon dioxide levels) on the rate of photosynthesis.
45. Discuss the roles of photosynthesis and aerobic respiration in the flow of energy through a biological system.

Cell Reproduction - Mitosis and Meiosis

46. Describe the four stages (G , S, G , M) of the cell cycle.
47. Compare and contrast asexual and sexual reproduction.
48. Identify each of the stages of mitosis and meiosis. Identify the cells at each stage as haploid or diploid.
49. Compare and contrast mitosis with meiosis.
50. Discuss how the process of meiosis contributes to genetic variation.

Mendel and the Gene Idea

51. State Mendel's Law of Segregation and Mendel's Law of Independent Assortment and relate them to events in meiosis.
52. Define the terms commonly associated with basic genetics: phenotype, genotype, homozygous, heterozygous, allele, locus, testcross, segregation, independent assortment, linkage, crossing over, sex linkage, sex determination.
53. Solve problems involving the following genetic principles:
 gene assortment (3:1, 1:2:1, F ratios)
 independent assortment (9:3:3:1 F ratios)
 sex linkage, multiple alleles, dominance v incomplete dominance, epistasis, pleiotropy
54. Cite examples of how an organism's environment may control phenotype.

DNA Structure and Protein Synthesis

55. Describe the structure and chemical composition of DNA and RNA. Discuss the role of hydrogen bonding in DNA replication, transcription and translation.
56. Compare and contrast prokaryotic and eukaryotic chromosome structure.
57. Describe DNA replication.
58. Given a DNA sequence be able to transcribe and translate it into the designated protein.
59. Explain the roles of DNA, mRNA, tRNA, rRNA, DNA polymerase, DNA ligase, RNA polymerase, peptidyl transferase, amino acids and ATP in the process of protein synthesis.

60. List the different kinds of mutations and consequences on gene expression and factors that may cause those mutations.
61. Describe how gene expression is controlled in prokaryotic and eukaryotic cells.
62. Describe how genetic engineering is accomplished and cite practical examples in agriculture and medicine.
63. Critically examine moral and ethical issues surrounding genetic engineering, genetic diseases and the Human Genome Project.

Evolution and Natural Selection

64. Define evolution and cite examples that supports it.
65. Explain the origins of genetic variability including mutations, chromosomal aberrations, and crossing over during meiosis and sexual reproduction and relate the importance of recombination to natural selection and evolution.
66. Discuss the various factors involved in natural selection as a mechanism of evolution and the effects of natural selection on populations.
67. Define the term species and discuss reproductive isolating mechanisms.
68. Define and give examples of allopatric and sympatric speciation.
69. Identify emergent macroevolutionary patterns. Cite examples of major events in the evolution of life.

Biodiversity

70. Compare and contrast prokaryotic and eukaryotic cells.
71. Describe the general characteristics of bacteria (cell structure, metabolism, genetics, cell replication)
72. Describe the general characteristics of protists. Describe the criteria used to classify protists.
73. Describe the general characteristics of fungi. Describe the criteria used to classify fungi. Distinguish between sexual and asexual fungal spores. Discuss fungal adaptations as they relate to the evolution of fungi.
74. Describe the distinguishing characteristics of the four groups of plants. Compare and contrast gymnosperms and angiosperms.
75. Describe terrestrial adaptations found in plants.
76. Describe the structure of sponges
77. Distinguish between radial and bilateral symmetry
78. Distinguish between sponges and sea anemones
79. Compare and contrast the platyhelminths, the annelids and the nematods
80. Describe the distinguishing characteristics of chordates and give examples of chordates.
81. Describe the distinguishing characteristics of rotifers, roundworms, arthropods, reptiles, birds, fish and mammals.

Summer 2013

<u>DAY:</u>	<u>TOPIC</u>	<u>READING</u>
May 7	Introduction to Course (Module 1)	Chapters 1, 24, 25
May 8	Scientific Method, Evolution Classification, Water (Modules 1, 2)	Chapters 1, 2, 24, 25
May 9	Biomolecules (Module 2)	Chapters 3-6,
May 13 /14	Cell Structure, Membrane Structure and Function (Modules 3, 4)	Chapters 6, 7
May 15 -20	Energy and Enzymes (Module 5) Respiration (Module 6) Photosynthesis (Module 7)	Chapter 3 Chapter 9 Chapter 10
May 20	Cell Cycle, Mitosis & Meiosis (Module 8)	Chapters 11, 12
May 21	Genetics (Module 9)	Chapters 13
May 22	DNA Structure, Function & Replication (Module 10)	Chapter 14
May 23	RNA Structure, Function, Transcription Protein Synthesis, Mutations (Modules 11, 12)	Chapter 15, 16
May 24	Viral and Bacterial Molecular Genetics Prokaryotic and Eukaryotic Gene Expression (Modules 11, 12)	Chapters 17,18
May 28	DNA Technology (Module 13) Evolution and Natural Selection Population Genetics, Adaptation, Speciation, Macroevolution (Modules 14, 15)	Chapter 19, 20 Chapter 24-27
May 29 – June 4	Diversity (Modules 16, 17, 18, 19)	Chapters 28 - 35

FINAL EXAM –Tuesday June 4, 2013 at 8am – 9am online



Dear Student:

In this course you will be using MasteringBiology®, an online tutorial and homework program that accompanies your textbook.

What You Need:

- ✓ **A valid email address**
- ✓ **A student access code** (Comes in the Student Access Kit that may have been packaged with your new textbook or is available separately in your school's bookstore. Otherwise, you can purchase access online at www.masteringbiology.com.)
- ✓ **The ZIP code for your school: 40506**

- ✓ **A Course ID: BIO150BEATTIESUMMER2013**

Register

- Go to www.masteringbiology.com and click **New Students** under **Register**.
- To register using the Student Access Code inside the MasteringBiology Student Access Kit, select **Yes, I have an access code**. Click **Continue**.

–OR– **Purchase access online:** Select **No, I need to purchase access online now**. Select your textbook and whether you want to include access to the eText, and click **Continue**. Follow the on-screen instructions to purchase access using a credit card. The purchase path includes registration, but the process may differ slightly from the steps printed here.

- **License Agreement and Privacy Policy:** Click **I Accept** to indicate that you have read and agree to the license agreement and privacy policy.
- Select the appropriate option under “Do you have a Pearson Education account?” and supply the requested information. Upon completion, the **Confirmation & Summary** page confirms your registration. This information will also be emailed to you for your records. You can either click **Log In Now** or return to www.masteringbiology.com later.

Log In

- Go to www.masteringbiology.com.
- Enter your Login Name and Password and click **Log In**.

Enroll in Your Instructor's Course and/or Access the Self-Study Area

Upon first login, you'll be prompted to do one or more of the following:

- **Join your MasteringBiology course** by entering the **MasteringBiology Course ID** provided by your instructor. (**BIO150BEATTIESUMMER2012**)
- Enter a Student ID

Click **Save** and **OK**.

Congratulations! You have completed registration and have enrolled in your instructor's MasteringBiology course. To access your course from now on, simply go to www.masteringbiology.com, enter your Login Name and Password, and click **Log In**. If your instructor has created assignments, you can access them in the **Assignments Due Soon** area or by clicking **View All** in this area. Otherwise, click on **Study Area** to access self-study material.

Support

Access Customer Support at www.masteringbiology.com/support, where you will find:

- System Requirements
- Answers to Frequently Asked Questions
- Additional contact information for Customer Support, including Live Chat

Distance Learning Form

This form must accompany every submission of a new/change course form that requests distance learning delivery. This form may be required when changing a course already approved for DL delivery. **All fields are required!**

Introduction/Definition: For the purposes of the Commission on Colleges Southern Association of Colleges and Schools accreditation review, *distance learning* is defined as a formal educational process in which the majority of the instruction (interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place. Instruction may be synchronous or asynchronous. A distance learning (DL) course may employ correspondence study, or audio, video, or computer technologies.

A number of specific requirements are listed for DL courses. **The department proposing the change in delivery method is responsible for ensuring that the requirements below are satisfied at the individual course level.** It is the responsibility of the instructor to have read and understood the university-level assurances regarding an equivalent experience for students utilizing DL (available at <http://www.uky.edu/Faculty/Senate/forms.htm>).

Course Number and Prefix: BIO 150	Date: July 20 2012
Instructor Name: Ruth E Beattie	Instructor Email: rebeat1@uky.edu
Check the method below that best reflects how the majority of course of the course content will be delivered.	
Internet/Web-based <input checked="" type="checkbox"/>	Interactive Video <input type="checkbox"/>
	Hybrid <input type="checkbox"/>

Curriculum and Instruction	
1.	<p>How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?</p> <p>Information from syllabus: Instructor: Dr. Ruth E. Beattie</p> <p>Office: 219 T. H. Morgan Building</p> <p>Telephone: 257-7647</p> <p>E-Mail: rebeat1@uky.edu</p> <p>Office Hours Generally the fastest way to contact me is through e-mail. I check my e-mail regularly during the day (M-F). E-mails received before 5pm on a weekday will generally be responded to on that day. E-mails received after 5pm will generally be responded to by 9am the following morning. E-mails received after 5pm on Friday will be responded to within 24 hours. For face-to-face, telephone or SKYPE appointments: e-mail me to set up a meeting time.</p> <p>Use and check your UK e-mail regularly. This is the only address that will be used to communicate with you. Do not forward your e-mail to another account. The anti-spam software for many e-mail accounts (yahoo, hotmail, etc) will not deliver mail that has been sent to multiple addresses. All class communications are sent to all students in the class and so are filtered out by yahoo, hotmail etc. You are responsible for all information sent out to the class through e-mail... so use your UK e-mail account and check it often (2 – 3 times a day at least).</p>

Abbreviations: TASC = Teaching and Academic Support Center DL = distance learning DLP = Distance Learning Programs

Distance Learning Form

This form must accompany every submission of a new/change course form that requests distance learning delivery. This form may be required when changing a course already approved for DL delivery. **All fields are required!**

	<p>Students will be able to communicate with each other and with the Instructor through the discussion feature in Blackboard. Instructions will be given on the first day of class.</p> <p>The syllabus conforms to the University Senate Syllabi Guidelines</p>
2.	<p>How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.</p> <p>The course content, student learning outcomes and assessments are the same as for the traditional lecture-format version of the course.</p> <p>The only difference is the format in which course content is presented.</p> <p>This is a 3 credit hour course taught exclusively through the web (Blackboard and Mastering Biology (an electronic homework platform)). All course materials are on-line. A LECTURE SCHEDULE is provided to keep students on task. The course is divided into 19 modules . Each module begins with a listing of the module student learning outcomes and a short description of the module content. Students then work through the module materials which consist of a variety of formats: PowerPoint with audio (produced by the Instructor), word documents (produced by instructor), web links, QuickTime movies, interactive animations, ECHO 360 podcasts of lectures (produced by the Instructor) etc. Additional course material is available on Mastering Biology</p>
3.	<p>How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.</p> <p>Exams are administered through Mastering Biology. This website is password protected.</p> <p>Information from syllabus:</p> <p>The online exams will be submitted electronically through Mastering Biology and must be submitted by the stated deadline (9.00am). Each examination will consist of 50 multiple-choice or true/false questions. Each examination will be available beginning at 8am on the examination date. It is your responsibility to make sure that you access the material during that time period. You can only access the examination once. Once you access an examination you have 50 minutes in which to complete and submit it (the latest you should access an online examination is 8.08am). If you go over the time you will not be able to submit it and will receive an automatic score of zero for any questions not answered by that time. There is a timer on the examination page - it is your responsibility to watch the time and submit the examination in time.</p> <p>The questions on the examination will be sequenced. You must submit an answer for the first question before you can move to the second question. The first answer you submit is the answer used in the determination of your grade – you cannot go back and change an answer once it has been submitted.</p> <p>The online examination is an open book examination. Note: You have 50 minutes to answer 50 questions. Make sure you know the exam material before your start each examination as this 50-minute limit does not provide much time for looking up information. Online examinations will be automatically graded and your score will be available after the due time (9.00am).</p> <p>If you encounter problems when taking an exam: First try calling me at 257-7647 - I will be in my office during the entire examination period. If you are unable to contact me by phone: send me an e-mail and include a phone number where you can be reached. I will contact you ASAP.</p> <p>UK's academic offense policy is detailed in the syllabus.</p>

Abbreviations: TASC = Teaching and Academic Support Center DL = distance learning DLP = Distance Learning Programs

Distance Learning Form

This form must accompany every submission of a new/change course form that requests distance learning delivery. This form may be required when changing a course already approved for DL delivery. **All fields are required!**

4.	<p>Will offering this course via DL result in at least 25% or at least 50%* (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?</p> <p>NO</p> <p>If yes, which percentage, and which program(s)?</p> <p><small>*As a general rule, if approval of a course for DL delivery results in 50% or more of a program being delivered through DL, the effective date of the course's DL delivery will be six months from the date of approval.</small></p>
5.	<p>How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?</p> <p>The following information is detailed in the syllabus:</p> <p>Distance Learning Library Services As a Distance Learning student you have access to the Distance Learning Library services at http://www.uky.edu/Libraries/DLLS. This service can provide you access to UK's circulating collections and can deliver to you manuscripts or books from UKs library or other libraries. The DL Librarian may be reached at 859-257-0500, ext 2171, or 800-828-0439 (option #6) or by mail at dlservice@email.uky.edu. For an interlibrary loan visit: http://www.uky.edu/Libraries/linpage.php?lweb_id=253&llib_id=16</p>
<i>Library and Learning Resources</i>	
6.	<p>How do course requirements ensure that students make appropriate use of learning resources?</p> <p>All resources for both the traditional and online courses are online. Online students will have the same access to these resources as the traditional format students.</p>
7.	<p>Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.</p> <p>The following information is detailed in the syllabus:</p> <p>Distance Learning Library Services As a Distance Learning student you have access to the Distance Learning Library services at http://www.uky.edu/Libraries/DLLS. This service can provide you access to UK's circulating collections and can deliver to you manuscripts or books from UKs library or other libraries. The DL Librarian may be reached at 859-257-0500, ext 2171, or 800-828-0439 (option #6) or by mail at dlservice@email.uky.edu. For an interlibrary loan visit: http://www.uky.edu/Libraries/linpage.php?lweb_id=253&llib_id=16</p>
<i>Student Services</i>	
8.	<p>How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (http://www.uky.edu/UKIT/)?</p> <p>Information from syllabus:</p> <p>Minimum Technology Requirements:</p>

Abbreviations: TASC = Teaching and Academic Support Center DL = distance learning DLP = Distance Learning Programs

Distance Learning Form

This form must accompany every submission of a new/change course form that requests distance learning delivery. This form may be required when changing a course already approved for DL delivery. **All fields are required!**

In order to participate in this course, you will need access to a computer with the minimum hardware, software and internet configuration described at this site:
<http://www.uky.edu/DistanceLearning/online/technical.php>

You will need to have access to a computer for 5 – 6 hours each DAY.

Note: the use of Internet Explorer is NOT recommended for use with Blackboard. Check this weblink to determine the optimum operating requirements for your computer.
<http://www.uky.edu/DistanceLearning/online/technical.php>

You will need to install a number of plugins on your computer. The links to the specific plugins required for this course can be found in MODULE 1 of the COURSE MATERIALS section of the course. If using a UK computer these plugins should already be installed.

If you experience technical difficulties with accessing course materials, the Customer Service Center may be able to assist you. Their hours are 7am – 6pm Monday through Friday. You may reach them at 859-257-1300 or by e-mail at helpdesk@uky.edu. Please also inform the course instructor when you are having technical difficulties.

Walk-In Assistance for Students

IT Customer Service Center. 111 McVey Hall

- Monday through Friday 7 AM - 6 PM Student Center. Room 255
- Monday through Friday 10 AM - 6 PM The Hub at WT Young Library
- Sunday through Thursday 1 PM - 10 PM

SCS Computer Labs on campus can also help with log in and access problems.

If you encounter problems when taking an exam: First try calling me at 257-7647 - I will be in my office during the entire examination period. If you are unable to contact me by phone: send me an e-mail and include a phone number where you can be reached. I will contact you ASAP.

9. Will the course be delivered via services available through the Academic Technology Group (ATG) and Distance Learning Programs (DLP)?

Yes

No

If no, explain how students enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

The course will be delivered through both Blackboard and Mastering Biology. The Mastering Biology access code is purchased with the textbook. Once registered in Mastering Biology, the students complete a short tutorial on the use of the website/ navigation/ features. I have used the Mastering website in BIO 148, BIO 150 and BIO 208 for the past two years. During that time I have had no problems with the site. In fact it is more user friendly than Blackboard.

Distance Learning Form

This form must accompany every submission of a new/change course form that requests distance learning delivery. This form may be required when changing a course already approved for DL delivery. **All fields are required!**

10.	<p>Does the syllabus contain all the required components, below? <input checked="" type="checkbox"/> Yes</p> <ul style="list-style-type: none"> <input type="checkbox"/> Instructor's <i>virtual</i> office hours, if any. <input type="checkbox"/> The technological requirements for the course. <input type="checkbox"/> Contact information for Information Technology Customer Service Center: <ul style="list-style-type: none"> <input type="checkbox"/> Web: http://www.uky.edu/UKIT/ <input type="checkbox"/> Phone: 859-218-HELP <input type="checkbox"/> Web Address for Distance Learning Programs: http://www.uky.edu/DistanceLearning <input type="checkbox"/> Procedure for resolving technical complaints. <input type="checkbox"/> Preferred method for reaching instructor, e.g. email, phone, text message. <input type="checkbox"/> Maximum timeframe for responding to student communications. <input type="checkbox"/> Language pertaining academic accommodations: <ul style="list-style-type: none"> <input type="checkbox"/> "If you have a documented disability that requires academic accommodations in this course, please make your request to the University Disability Resource Center. The Center will require current disability documentation. When accommodations are approved, the Center will provide me with a Letter of Accommodation which details the recommended accommodations. Contact the Disability Resource Center, Jake Karnes, Director at 859-257-2754 or jkarnes@email.uky.edu." <input type="checkbox"/> Information on Distance Learning Library Services <ul style="list-style-type: none"> <input type="checkbox"/> Carla Cantagallo, DL Librarian <input type="checkbox"/> Web: http://libraries.uky.edu/DLLS <input type="checkbox"/> Phone: 859 257-0500, ext. 2171 <input type="checkbox"/> Email: carla@uky.edu <input type="checkbox"/> DL Interlibrary Loan Service: http://libraries.uky.edu/page.php?lweb_id=253
11.	<p>I, the instructor of record, have read and understood all of the university-level statements regarding DL.</p> <p>Instructor Name: Ruth E Beattie Instructor Signature:</p>

Abbreviations: TASC = Teaching and Academic Support Center DL = distance learning DLP = Distance Learning Programs

Detailed Navigation

- Windows Home
- eCATS (Curricular Proposal)
- OSPA Form
- Financial Disclosure

Related Links

- Browser Compatibility

eCATS Request Tracking

No Filter
 Filter By College Name: ARTS & SCIENCES
 Filter By CourseID: BIO
 Filter By Date Range: FromDate: ToDate: 11/17/2012

Course/ Prog ID	Display Form	Course/ Program	Request Type	College	Date
BIO 150	Display Form	Course	Change	ARTS & SCIENCES	7/23/2012

Details of Course/Program ID(BIO 150)

WDR ITEM ID	Workflow Status	Date	Time
000010507339	Department Received	2012-07-23	10:07 AM
000010507345	Department Approved	2012-07-24	14:42 PM
000010520229	Received by College	2012-07-24	14:42 PM
000010520231	Approved by College	2012-08-31	09:35 AM
000010765119	Received by USC	2012-08-31	09:35 AM
000010765121	Approved by USC	2012-10-11	12:57 PM
000011040748	Received by Senate Council	2012-10-11	12:57 PM

Bio 450	Display Form	Course	New	ARTS & SCIENCES	8/29/2012
BIO 528	Display Form	Course	Change	ARTS & SCIENCES	9/4/2012