

# REQUEST FOR NEW COURSE

## Signature Routing Log

### General Information:

Course Prefix and Number: BIO 148

Proposal Contact Person Name: Ruth E. Beattie


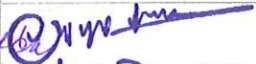

Phone: 257-7647

Email: rebeat1@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   |
|---------------------|----------------|---|---|
| Biology Faculty     | 04/10/09       | Dr. Vincent Cassone / 257-6766 /<br>vincent.cassone@uky.edu                   |    |
|                     |                | / /   |   |
|                     |                | / /   |   |
| <i>A&amp;S EPC</i>  | <i>10/5/10</i> | <i>Jenpathy<br/>Murphy</i> / <i>17-47291</i> / <i>jenpathy.murphy@uky.edu</i> |   |
| <i>A&amp;S Dean</i> | <i>10/5/10</i> | <i>Anna<br/>Bosch</i> / <i>17-66891</i> / <i>bosch@uky.edu</i>                |  |

### External-to-College Approvals:

| Council                      | Date Approved | Signature                  | Approval of Revision <sup>6</sup> |
|------------------------------|---------------|----------------------------|-----------------------------------|
| Undergraduate Council        | 11/09/2010    |                            |                                   |
| Graduate Council             |               |                            |                                   |
| Health Care Colleges Council |               |                            |                                   |
| Senate Council Approval      |               | University Senate Approval |                                   |

Comments:

<sup>6</sup> Councils use this space to indicate approval of revisions made subsequent to that council's approval, if deemed necessary by the revising council.

# REQUEST FOR NEW COURSE

## 1. General Information.

- a. Submitted by the College of: A&S Today's Date: August 27, 2010
- b. Department/Division: Biology
- c. Contact person name: Ruth E Beattie Email: rebeat1@uky.edu Phone: 257-7647
- d. Requested Effective Date:  Semester following approval OR  Specific Term/Year<sup>1</sup>: Fall 2011

## 2. Designation and Description of Proposed Course.

- a. Prefix and Number: BIO 148
- b. Full Title: Introductory Biology I
- c. Transcript Title (if full title is more than 40 characters): \_\_\_\_\_
- d. To be Cross-Listed<sup>2</sup> with (Prefix and Number): n/a
- e. Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours<sup>3</sup> for each meeting pattern type.

|                  |                                |                                     |                  |                    |
|------------------|--------------------------------|-------------------------------------|------------------|--------------------|
| <u>3</u> Lecture | <u>Laboratory</u> <sup>1</sup> | _____ Recitation                    | _____ Discussion | _____ Indep. Study |
| _____ Clinical   | _____ Colloquium               | _____ Practicum                     | _____ Research   | _____ Residency    |
| _____ Seminar    | _____ Studio                   | _____ Other – Please explain: _____ |                  |                    |

- f. Identify a grading system:  Letter (A, B, C, etc.)  Pass/Fail
- g. Number of credits: 3
- h. Is this course repeatable for additional credit? YES  NO
- if YES: Maximum number of credit hours: \_\_\_\_\_
- if YES: Will this course allow multiple registrations during the same semester? YES  NO

i. Course Description for Bulletin: BIO 148 introduces the student to the biological mechanisms operating at the molecular, cellular, and population level that contribute to the origin, maintenance, and evolution of biodiversity including the origins and history of the evolutionary process. Course material is presented within a phylogenetic context, emphasizing the shared history of all living organisms on earth through common ancestry. The first semester of an integrated one-year sequence (Bio 148 and BIO 152). Pre-reqs: Math ACTE of 23 or above or MA 109, past or concurrent enrollment in CHE 105

- j. Prerequisites, if any: Math ACTE of 23 or above or MA 109, past or concurrent enrollment in CHE 105
- k. Will this course also be offered through Distance Learning? YES<sup>4</sup>  NO

<sup>1</sup> Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.

<sup>2</sup> The chair of the cross-listing department must sign off on the Signature Routing Log.

<sup>3</sup> In general, undergraduate courses are developed on the principle that one semester hour of credit represents one hour of classroom meeting per week for a semester, exclusive of any laboratory meeting. Laboratory meeting, generally, represents at least two hours per week for a semester for one credit hour. (from SR 5.2.1)

<sup>4</sup> You must also submit the Distance Learning Form in order for the proposed course to be considered for DL delivery.

# REQUEST FOR NEW COURSE

1. Supplementary teaching component, if any:  Community-Based Experience  Service Learning  Both

3. Will this course be taught off campus? YES  NO

4. Frequency of Course Offering.

a. Course will be offered (check all that apply):  Fall  Spring  Summer

b. Will the course be offered every year? YES  NO

If NO, explain: \_\_\_\_\_

5. Are facilities and personnel necessary for the proposed new course available? YES  NO

If NO, explain: \_\_\_\_\_

6. What enrollment (per section per semester) may reasonably be expected? expected enrollment Fall: 2 sections of 300; Spring: 1 section of 300; summer: 50+

7. Anticipated Student Demand.

a. Will this course serve students primarily within the degree program? YES  NO

b. Will it be of interest to a significant number of students outside the degree pgm? YES  NO

If YES, explain: This course will be of interest to students in other science programs and to those planning on entering professional schools in the medical/ health field

8. Check the category most applicable to this course:

Traditional – Offered in Corresponding Departments at Universities Elsewhere

Relatively New – Now Being Widely Established

Not Yet Found in Many (or Any) Other Universities

9. Course Relationship to Program(s).

a. Is this course part of a proposed new program? YES  NO

If YES, name the proposed new program: \_\_\_\_\_

b. Will this course be a new requirement<sup>5</sup> for ANY program? YES  NO

If YES<sup>5</sup>, list affected programs: Currently only the BS in Biology, BA in Biology, and Minor in Biology are affected.  
In the future it could possibly be a requirement for other life science programs.

10. Information to be Placed on Syllabus.

a. Is the course 400G or 500? YES  NO

If YES, the *differentiation for undergraduate and graduate students must be included* in the information required in **10.b**. You must include: (i) identification of additional assignments by the graduate students; and/or (ii) establishment of different grading criteria in the course for graduate students. (See *SR 3.1.4.*)

b.  The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable, from **10.a** above) are attached.

<sup>5</sup> In order to change a program, a program change form must also be submitted.

# University Senate Syllabi Guidelines

BIO 148

## General Course Information

- Full and accurate title of the course.
- Departmental and college prefix.
- Course prefix, number and section number.
- Scheduled meeting day(s), time and place.

## Instructor Contact Information (if specific details are unknown, "TBA" is acceptable for one or more fields)

- Instructor name.
- Contact information for teaching/graduate assistant, etc.
- Preferred method for reaching instructor.
- Office phone number.
- Office address.
- UK email address.
- Times of regularly scheduled office hours and if prior appointment is required.

## Course Description

- Reasonably detailed overview of the course.
- Student learning outcomes.
- Course goals/objectives.
- Required materials (textbook, lab materials, etc.).
- Outline of the content, which must conform to the Bulletin description.
- Summary description of the components that contribute to the determination of course grade.
- Tentative course schedule that clarifies topics, specifies assignment due dates, examination date(s).
- Final examination information: date, time, duration and location.
- For 100-, 200-, 300-, 400-, 400G- and 500-level courses, numerical grading scale and relationship to letter grades for *undergraduate* students.
- For 400G-, 500-, 600- and 700-level courses, numerical grading scale and relationship to letter grades for *graduate* students. (Graduate students cannot receive a "D" grade.)
- Relative value given to each activity in the calculation of course grades (Midterm=30%; Term Project=20%, etc.).
- Note that undergraduate students will be provided with a Midterm Evaluation (by the midterm date) of course performance based on criteria in syllabus.
- Policy on academic accommodations due to disability. Standard language is below:  
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](mailto:jkarnes@email.uky.edu)) for coordination of campus disability services available to students with disabilities.

## Course Policies

- Attendance.
- Excused absences.
- Make-up opportunities.
- Verification of absences.
- Submission of assignments.
- Academic integrity, cheating & plagiarism.
- Classroom behavior, decorum and civility.
- Professional preparations.
- Group work & student collaboration.

BIO148 - 001  
Dept of Biology  
College of Arts and Sciences

Fall 2010

**Introductory Biology I: "What is the nature of biological diversity and how did it arise?"**

**Date and Time:** Monday, Wednesday, and Friday 2pm-2:50pm  
**Classroom:** TH Morgan, Room 107

**Pre-requisites:** Math ACTE of 23 or above or MA 109 , past or concurrent enrollment in CHE 105

**Instructors:**

Dr. David W. Weisrock  
MDR3 building, Room 118  
257-2249  
[dweis2@uky.edu](mailto:dweis2@uky.edu) (preferred method)

**Office Hours:**

By appointment. Email to schedule.

**Teaching Assistants:**

Ms. Melanie O'Day  
[melanietoday@gmail.com](mailto:melanietoday@gmail.com)

Mr. Josh Williams  
[joshua.williams2@uky.edu](mailto:joshua.williams2@uky.edu)

**Textbooks:** Biological Science, Fourth Edition by Scott Freeman

**Exams and grading:** There will be two regular semester "mid-term" exams, each of which will cover material since the previous exam. There will also be a third exam during finals week. 50% of this final exam will cover material between mid-term #2 and the last lecture and 50% will cover cumulative material for the entire course. Each exam is worth 100 points. There are a total of 300 points to be awarded for the entire course.

|                           |            |
|---------------------------|------------|
| "Mid-Term Examination #1" | 100 points |
| "Mid-Term Examination #2" | 100 points |
| "Final Examination"       | 100 points |
| Total                     | 300 points |

The grading scale will be as follows:

|                      |                          |
|----------------------|--------------------------|
| A = 264 - 300 points | D = 174 - 203 points     |
| B = 234 - 263 points | E = less than 174 points |
| C = 204 - 233 points |                          |

**Class attendance:** Even though attendance is not kept, you must attend in order to get a good grade. Getting class notes from other students is not a successful substitute. If you miss lectures, you will miss this information. Also, reading newspapers during lectures, surfing the internet, texting, reading books, talking to others, and sleeping will not be tolerated. Those doing so will be asked to leave the lecture.

**Cheating:** Cheating as defined in the student handbook section 6.3.2, is defined as follows: "cheating is defined by its general usage. It includes, but is not limited to the wrongfully 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. Any question of definition shall be referred to the University Appeals Board." In other words, filling in an exam for someone else, or having someone else do this for you, is cheating. Copying off of a student's exam, bringing in and using notes during an exam, communicating information about the exam during the exam, and bringing in false doctor's excuses for missing exams all constitute cheating. We have a **zero-tolerance** policy towards all academic misconduct, and will pursue all cases of cheating. **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.**

**Examination policy:** All exams must be taken. Any exam missed will be a 0% in the grade book. The first two exams will be taken during the regular class time. If you fail to follow the examination instructions completely during an exam, you will have 5 points deducted from your exam. So read and follow your instructions carefully! *You can only take your exams during the times listed* for the class section in which you are enrolled. You cannot ask to reschedule your final exam for earlier in the week, except when more than one final exam is scheduled for the same time (see below). Final exam times are listed on the last page of this syllabus and in the **Fall 2010** class schedule.

If you do have an acceptable excuse for missing an exam, then you may take the make-up exam. There are only three acceptable excuses for missing an exam recognized by the university: 1) the death of an immediate family member (unambiguous documentation is required); 2) illness (you must have a note from a doctor confirming this); 3) participation in off-campus activities (you must have documentation from the proper department, typically the athletic department, at the beginning of the semester). If you are ill or will miss an exam for a good reason, you *must* email or call Dr. Weisrock before the end of the exam. Convincing documentation must be provided within 1 week after the exam in order to take the make-up. If you have any other emergency situation, you must discuss it with us as soon as possible before the exam. Keep in mind cars that do not start and flat tires do not count as excuses for missing exams.

**Extra Credit:** There is not any extra credit.

**Rescheduling final exams:** If you have more than two final exams on the same day, you are entitled to have the class with the **highest call number** rescheduled. This request must be in writing at least **two weeks before the final exam**. Consult your **Fall 2010** class schedule for details regarding final exam rescheduling.

**Cell phones:** Cell phone use and texting has been a particular problem in the past. To remediate this problem, cell phone and texting will not be permitted inside the classroom at anytime before, during, or after class. If you have something important to say to someone using a phone, do it outside of the classroom and turn it off, or put it on silent mode, before entering the classroom. If you use your phone for any reason inside the classroom you may be asked to leave class, or your phone may be removed from you.

**Laptop computers in class:** The use of laptops in class for taking notes is becoming more common and an excellent way for some students to keep notes. Unfortunately some choose to use laptops during class time to surf the web, email, and engage in other activities not associated with class. This has become a growing distraction for students sitting near by. Thus, those using laptops to take notes may do so in the section of seats on the right side of the room (as if you are facing the front). Any use of laptops outside of this section is not permitted.

**Responsibility:** College life is intended to accomplish many goals. These include learning the material in class, learning to think, becoming enlightened as to the ways of the world, and developing a sense of responsibility. Most students are responsible and do not need to develop this aspect of one's self. Unfortunately some students lack this quality. Thus it is our job to help instill an appreciation for this attribute. It is your responsibility to attend class, study hard, take exams when scheduled, and get all information from lectures when the information is given. *Handouts, additional page assignments, tips and hints to help prepare for the exam will be given only in class.* If you miss class, you must get the information from other students with no guarantee that they will be willing to supply this information. I do not supply handouts other than on the day they are given and I do not make class notes available. It also is your responsibility to pick up your returned exams and keep them until you have received your final grade for the class. Cheating is one of the most irresponsible behaviors regularly seen in college. This is an act that will warrant the most severe response!

**Disabilities:** 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.

**Final important point:** Read this syllabus carefully. It is your class contract. By accepting the guidelines detailed above, you are accepting the terms of your class contract. If you do not find any aspect of this acceptable, you should withdraw from the class.

### Course Description / Overview

BIO 148 introduces the student to the biological mechanisms operating at the molecular, cellular, and population level that contribute to the origin, maintenance, and evolution of biodiversity including the origins and history of the evolutionary process. Course material is presented within a phylogenetic context, emphasizing the shared history of all living organisms on earth through common ancestry.

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

## **Learning Outcomes**

### **By the end of the semester you should be able to:**

- 1) List the fundamental characteristics of living organisms and discuss the principles that unify living organisms.
- 2) Discuss the five kingdom and three domain system of classification of organisms, and give criteria used to assign members to each kingdom/domain.
- 3) Arrange in order the following categories of classification: domain/ kingdom, phylum, class, order, family, genus, species.
- 4) Demonstrate an understanding of the role of scientific method in scientific investigation.

### **Biodiversity**

- 5) Compare the relative diversity and biomasses of the viruses and living systems of the different domains
- 6) Compare and contrast prokaryotic archaea, eubacteria and eukaryotic cells.
- 7) Describe the general characteristics of protists. Describe the criteria used to classify protists.
- 8) 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.
- 9) Describe the distinguishing characteristics of the four groups of plants. Compare and contrast gymnosperms and angiosperms.
- 10) Distinguish between radial and bilateral symmetry in animals
- 11) Distinguish acoelomates, pseudocoelomates and coelomates
- 12) Describe the distinguishing characteristics of major taxa

### **Evolution**

- 13) Learn PreDarwinian history of evolutionary thought
- 14) Describe Charles Darwin and his insights
- 15) Discuss Mendelian Genetics
- 16) Describe the Modern Synthesis of Genetics and Evolutionary Thought.
- 17) Describe modern advances in evolutionary thought

### **Impact of Evolutionary Thought on Modern Life**

- 18) Discuss evolution's impact on Medicine
- 19) Discuss biological principles in Conservation

### **Central Dogma**

- 19) Describe the structure of DNA
- 20) Describe transcription to RNA
- 21) Describe translation to protein
- 22) Describe the role of protein structure to function

### **Cell Biology**

- 23) Compare and contrast prokaryotic archaea, eubacteria and eukaryotic cells.
- 24) Describe the cell cycle and intermediary metabolism in these diverse organisms.
- 25) Compare and contrast photosynthesis in prokaryotes and plants



| DATE   | SUBJECT                               | READING   |                   |
|--|---------------------------------------|---|-------------------|
| August   | 25                                    | Introduction                                      | Freeman Ch. 1     |
|  | 27                                    | Unity of Life-DNA                                 | Freeman Ch. 2-6   |
| September  | 30                                    | DNA structure                                     |                   |
|  | 1                                     | <i>continued</i>                                  |                   |
|  | 3                                     | Central Dogma: DNA-RNA-Protein                    | Freeman Ch 14-16  |
|  | 6                                     | <b>Labor Day, no class</b>                        |                   |
|  | 8                                     | <i>continued</i>                                  |                   |
|  | 10                                    | Protein Structure                                 | Freeman Ch. 3     |
|  | 13                                    | Enzymes   |                   |
|  | 15                                    | <i>continued</i>                                  |                   |
|  | 17                                    | Intermediary Metabolism                           | Freeman Ch. 7-9   |
|  | 20                                    | <i>continued</i>                                  |                   |
|  | 22                                    | Origin and Diversity of Life, Tree Thinking       |                   |
|  | 24                                    | Viruses   | Freeman Ch. 35    |
|  | 27                                    | <i>continued</i>                                  |                   |
|  | 29                                    | Three Domains: Archaea                            | Freeman Ch. 28    |
| October  | 1                                     | Three Domains: Eubacteria                         |                   |
|  | 4                                     | <i>continued</i>                                  |                   |
|  | 6                                     | Three Domains: Eukaryota                          | Freeman Ch. 29-34 |
|  | 8                                     | Mid-Term Examination #1                           |                   |
|  | 11                                    | <i>continued</i>                                  |                   |
|  | 13                                    | Unity and Diversity: Evidence for Common Descent  | Freeman Ch. 24    |
|  | 15                                    | Homology, Homoplasy, and Physiology               |                   |
| <b>Midterm grades posted based on criteria in syllabus</b> |                                       |   |                   |
| November   | 18                                    | Homology, Homoplasy, and Physiology               |                   |
|  | 20                                    | Reconstructing Phylogeny                          | Freeman Ch. 27    |
|  | 22                                    | Evolution of Diversity over Time, Molecular Clock |                   |
|  | 25                                    | <i>continued</i>                                  |                   |
|  | 27                                    | Pre-Cambrian Life                                 |                   |
|  | 29                                    | Paleozoic Era                                     |                   |
|  | 1                                     | <i>continued</i>                                  |                   |
|  | 3                                     | Mesozoic Era                                      |                   |
|  | 5                                     | Cenozoic Era                                      |                   |
|  | 8                                     | <i>continued</i>                                  |                   |
|  | 10                                    | Mid-Term Examination #2                           |                   |
|  | 12                                    | History of Evolutionary Thought                   |                   |
|  | 15                                    | <i>continued</i>                                  |                   |
|  | 17                                    | Genetics and Genetic Variation                    | Freeman Ch. 13    |
|  | 19                                    | Molecular Evolution                               |                   |
|  | 22                                    | <i>continued</i>                                  |                   |
| 24   | <b>Thanksgiving Holiday, no class</b> |   |                   |
| 26   | <b>Thanksgiving Holiday, no class</b> |   |                   |

|          |    |  |                   |
|----------|----|--|-------------------|
|          | 29 | Evolution and Medicine   |                   |
| December | 1  | Evolution of Populations: Drift and selection                          | Freeman Ch. 25-26 |
|          | 3  | Speciation   |                   |
|          | 6  | Conservation   | Freeman Ch. 55    |
|          | 8  | <i>continued</i>   |                   |
|          | 10 | Human Evolution  | Freeman Ch. 34    |
|          | 15 | Final Examination at 1:00 PM ( <i>NOT</i> 2:00 PM) – 2 hours in length |                   |