### I. ASCRC General Education Form

<table>
<thead>
<tr>
<th>Group</th>
<th>Natural Science</th>
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<tbody>
<tr>
<td>Dept/Program</td>
<td>Division of Biological Sciences</td>
</tr>
<tr>
<td>Course #</td>
<td>BIOL 121</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Course Title</th>
<th>Introductory Ecology</th>
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<tbody>
<tr>
<td>Prerequisite</td>
<td>none</td>
</tr>
<tr>
<td>Credits</td>
<td>3</td>
</tr>
</tbody>
</table>

### II. Endorsement/Approvals

Complete the form and obtain signatures before submitting to Faculty Senate Office

<table>
<thead>
<tr>
<th>Please type / print name</th>
<th>Signature</th>
<th>Date</th>
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<tbody>
<tr>
<td>Instructor</td>
<td>Ragan Callaway</td>
<td></td>
</tr>
<tr>
<td>Phone / Email</td>
<td>243-5077</td>
<td></td>
</tr>
<tr>
<td>Program Chair</td>
<td>Charlie Janson</td>
<td></td>
</tr>
<tr>
<td>Dean</td>
<td>CAS</td>
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</tbody>
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### III. Description and purpose of the course:

General Education courses must be introductory and foundational. They must emphasize breadth, context, and connectedness; and relate course content to students’ future lives: See Preamble: [http://www.umt.edu/facultysenate/gened/GEPreamble_final.htm](http://www.umt.edu/facultysenate/gened/GEPreamble_final.htm)

The purpose of BIOL 121 is to provide a foundational course in ecology to non-biology majors. This course emphasizes a substantial breadth in ecology ranging from the traits of organisms to global climate issues. I make a great effort to connect foundational issues related to the ecology of individuals, populations, communities, ecosystems and the globe throughout the entire course. I also make an effort to tie ecological content in course to contexts that students would be aware of through current events or locally important issues.

### IV. Criteria:

Briefly explain how this course meets the criteria for the group. See: [http://www.umt.edu/facultysenate/ASCRCx/Adocuments/GE_Criteria5-1-08.htm](http://www.umt.edu/facultysenate/ASCRCx/Adocuments/GE_Criteria5-1-08.htm)

Courses explore a discipline in the natural sciences and demonstrate how the scientific method is used within the discipline to draw scientific conclusions.

Ecology is a discipline in the natural sciences and appropriate use of the scientific methods is emphasized through the presentation of current and historical literature so that students can learn to draw conclusions from science.

Courses address the concept of analytic uncertainty and the rigorous process required to take an idea to a hypothesis and then to a validated scientific theory.

Through the use of the scientific literature I emphasize uncertainty in the scientific process and discuss in detail how hypotheses and ideas become accepted or rejected.

Lab courses engage students in inquiry-based learning activities where they formulate a hypothesis, design an experiment to test the hypothesis, and collect, interpret, and present the data to support their conclusions.

This course does not have a lab.

### V. Student Learning Goals:

Briefly explain how this course will meet the applicable learning goals. See: [http://www.umt.edu/facultysenate/ASCRCx/Adocuments/GE_Criteria5-1-08.htm](http://www.umt.edu/facultysenate/ASCRCx/Adocuments/GE_Criteria5-1-08.htm)

- Students take 3 exams, 8-10 pop quizzes and write 5-6 small reports on readings
- Understand the general principles associated with the discipline(s) studied
| understand the methodology and activities scientists use to gather, validate and interpret data related to natural processes | Substantial effort is made in class to go through the importance of appropriate experimental design, controls, and appropriate interpretation. Assessment of this is part of the examination process. |
| detect patterns, draw conclusions, develop conjectures and hypotheses, and test them by appropriate means and experiments | This is a lecture course, but proceeds in each class period through Socratic question-response-based investigation of patterns, hypotheses, experimental tests, and interpretation. |
| understand how scientific laws and theories are verified by quantitative measurement, scientific observation, and logical/critical reasoning | In ecology there are not many laws, but the entire course is based on how ecologists explore hypotheses and ideas through observations, measurements, experiments, and logical interpretation of data. |

**VII. Syllabus:** Paste syllabus below or attach and send digital copy with form. The syllabus should clearly describe how the above criteria are satisfied. For assistance on syllabus preparation see: [http://teaching.berkeley.edu/bgd/syllabus.html](http://teaching.berkeley.edu/bgd/syllabus.html)

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**Introductory Ecology (BIOL 121)**  
**Fall, 2006**  
**Ray Callaway**  
**Botany Annex 106B**  
**ray.callaway@msou.montana.edu**  
**x5077**

August 29 & 31..........................Introduction & climate

September 5* & 9*..........................climate

September 12 & 14..........................adaptations

September 19 & 21..........................adaptations

September 26 & 28..........................populations

October 3*.............................................populations

October 5.............................................EXAM

October 10 & 12..........................populations

October 17* & 19..........................communities, competition

October 24 & 26..........................communities, allelopathy

October 31.............................................communities, predation
November 2……………………………………………………………………..communities, mutualism

November 7……………………………………………………………………..HOLIDAY

November 9……………………………………………………………………..EXAM

November 14 & 16……………………………………………………...ecosystems

November 21……………………………………………………………………..ecosystems

November 23……………………………………………………………………..THANKSGIVING

November 28* & 30………………………………………………………ecosystems

December 5 & 7…………………………………………………………global change & REVIEW

December 14 (3:20-5:20)…………………………………………………..FINAL

Grade is based on two midterms (100 points each), the final (200 points), quizzes in class (50-70 points), and five reading-writing assignments (50 points plus 10 extra credit). All of these are based on multiple choice and short answer questions. The quizzes provide opportunity for evaluation prior to 30 instructional days into the semester. P/NP the minimum achievement for a P will be a C grade. With proof of remedial or personal need, makeup exams will be allowed. Only students registered with DSS will be considered for disability accommodation. Requests to drop courses or change the grade basis of a course during the last few days of the semester will be evaluated strictly based on University of Montana policy. No finals will be given before the date listed above.

*Please note: As an instructor of a general education course, you will be expected to provide sample assessment items and corresponding responses to the Assessment Advisory Committee.