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RECEIVED  
SEP 21 2010  
WSU REGISTRAR

Washington State University **WSU Registrar**  
**MAJOR CURRICULAR CHANGE FORM - - COURSE**  
(Submit original signed form and ten copies to the Registrar's Office, zip 1035.)  
See <https://www.ronet.wsu.edu/ROPubs/Apps/HomePage.ASP> for this form.

Required Effective Date: 01/01/2011

(effective date cannot be retroactive)

☒ New course

☐ Temporary course

☐ Drop service course

☐ There is a course fee associated with this course

<http://www.schedules.wsu.edu/Schedules/Apps/CourseFees.ASP>

☐ Variable credit \_\_\_\_\_

☐ Repeat credit (cumulative maximum \_\_\_\_\_ hours)

☐ Increase credit (former credit \_\_\_\_\_)

☐ Lecture-lab ratio (former ratio \_\_\_\_\_)

☒ Number (former number 569)

☐ Prefix (former prefix \_\_\_\_\_)

☐ Crosslisting (between WSU departments)  
(Must have both departmental signatures)

☐ Cooperative listing (UI prefix and number \_\_\_\_\_)

taught by: WSU ☐ UI ☐ jointly taught ☐

☒ Conjoint listing (400/500)

☐ S, F grading

☐ Request to meet Writing in the Major [M] requirement (Must have All-University Writing Committee Approval)

☐ Request to meet GER in \_\_\_\_\_ (Must have GenEd Committee Approval) ☐ Fulfills GER lab (L) requirement

☐ Professional course (Pharmacy & Vet Med only) ☐ Graduate credit (professional programs only)

☐ Other (please list request) \_\_\_\_\_

Biol/ESRP

469/569

Ecosystem Ecology and Global Change

course prefix

course no.

title

3	3			469: Biol 372, Chem 106, 569: Graduate standing
credit	lecture hrs per week	lab hrs per week	studio hrs per week	prerequisite

Description (**20 words or less**) 469: Historic and current factors controlling the function of ecosystems and their responses to natural and human-caused global change. Credit not granted for both Biol/ESRP 469 and 569, 569: Graduate level counterpart of Biol/ESRP 469; additional requirements. Credit not granted for both Biol/ESRP 469 and 569

Instructor: R.D. Evans

Phone number: 335-7466

Email: rdevans@wsu.edu

Contact: Justine Rupp

Phone number: 335-3553

Email: ruppj@wsu.edu

- Please attach rationale for your request, a detailed course outline/syllabus and explain how this impacts other units in Pullman and other branches (if applicable).
- Secure all required signatures and provide 10 copies to the Registrar's Office.

[Signature] 17 Sept. 2010  
Chair/date

[Signature] 9/17/10  
Dean/date

General Education Com/date

Chair (if crosslisted/interdisciplinary)\*

Dean (if crosslisted/interdisciplinary)\*

Graduate Studies Com/date

All-University Writing Com/date

Academic Affairs Com/date

Senate/date

\*If the proposed change impacts or involves collaboration with other units, use the additional signature lines provided for each impacted unit and college.

### **Justification for Biol/ESRP 469/569**

We propose changing the course number for Biol/ESRP 569 to Biol/ESRP 469/569. This course was formerly cross-listed as Biol/ESRP 469/569 and was taught by R. Dave Evans in SBS and Rick Gill in SEES. We dropped the 469 designation in response to the A2P2 evaluation with the intention of Dr. Gill creating a new course in this area targeting undergraduate students. Dr. Gill subsequently left WSU and vacuum created by the loss of the 469 designation was not filled. This has created problems for both SBS and SEES because Biol/ESRP 469/569 met core requirements for degrees in both schools. Course enrollment was 11 when the course was first taught in 2005, but increased to 22, 20 and 18 in subsequent years with 55 – 65% of students being undergraduates using the course to fulfill degree requirements. Biol/ESRP 569 currently meets requirements for graduate degrees in Biol and SEES. It is one of the Ecology Core courses required by all SBS graduate students, and also meets the Ecology requirement in ESRP, hence we also cannot lose this course for graduate students. This is the only course at WSU taught by an inter-disciplinary team 1) specifically targeting ecosystems as whole and not individual groups of organisms, and 2) specifically addressing global climate change from an inter-disciplinary ecosystem perspective.

### **Additional Requirements for Biol/ESRP 569**

Final grades for Biol/ESRP students are based solely on three one-hour exams. Biol/ESRP 569 students will also be evaluated on three one-hour exams, but this will account for only 52% of their final grade. The remaining 48% of the Biol/ESRP 569 grade will be based on evaluation of scientific papers and a review paper. The detailed differences between the two courses are:

1. Biol/ESRP 469 students are required to answer 4 of 5 questions on exam, while Biol/ESRP 569 students are required to answer all five questions.
2. Biol/ESRP 569 students are required to write reviews for three scientific papers. (Please see syllabus for details)
3. Biol/ESRP students are required to write a literature review paper. (Please see syllabus for details)

## **Graduate School Questions Regarding Conjoint Courses**

*1. List the number of faculty in the degree granting area*

The School of Biological Sciences (SBS) has 31 faculty at the main campus and seven faculty at WSU-V.

*2. List the number of graduate courses listed on the books for the degree granting area*

SBS teaches 38 courses at the 500 level, and four at the 600-800 level.

*3. How many courses are currently listed as conjoint in the degree granting area?*

The only conjoint course in SBS is Plant Anatomy (Biol 409/509)

*4. How often are these conjoint courses taught?*

Biol 409/509 is taught alternate years (even)

*5. How many of these courses are designed as graduate courses with few undergraduate enrolled?*

We are not aware of the original intent for Plant Anatomy, but current enrollment is four students in Biol 409, and 18 students in Biol 509.

*6. Over the past three years, what percentage of courses on Graduate degree programs of study in this degree granting area are conjoint courses.*

We do not have this exact information, but it is likely very small because only one course is conjoint, and it is not required by the majority of graduate students in SBS.

*7. Why is this particular course integral to the graduate degree granting area?*

Please see "Justification" for the course

**Ecosystem Ecology and Global Change**  
**Biol and ES/RP 469/569**

<b>Instructors:</b>	Dr. R. Dave Evans	Dr. Cailin Orr
Office:	Abelson 335	Webster 1155
email:	<a href="mailto:rdevans@wsu.edu">rdevans@wsu.edu</a>	<a href="mailto:chorr@wsu.edu">chorr@wsu.edu</a>

**Lectures:** Tuesday, Thursday 9:10 – 10:30

**From of instruction and text:** All materials for the course will be presented during class lectures. The lectures will be presented using PowerPoint. Slides will be placed on the course web site before each lecture. No text is required for the course. Citations and handouts will be provided on the course website.

**Text:** No text is required for the course. Citations and handouts will be provided on the course website. The lectures will be presented using PowerPoint. Slides will be placed on the course web site before each lecture.

**Prerequisites:** The prerequisites for Biol/ESRP 469 are General Ecology and College Chemistry. The prerequisite for Biol/ESRP 569 is graduate standing.

**Web Site:** [lms.wsu.edu](http://lms.wsu.edu). The web site will have the syllabus, class email, models, papers, and instructions, and lecture notes and outlines. Check the web site often, because we will post announcements there.

**Course Objectives:**

- 1) develop conceptual understanding of biophysical, interactive processes governing ecosystem dynamics and function and their responses to global change
- 2) critically explore and evaluate collective, relevant literature and ideas
- 3) foster interdisciplinary thinking and development to solve complex ecological issues

**Grading:** The graduate and undergraduate sections will be graded separately!

**Biol/ESRP 469.** Students will be evaluated on three exams. Exams will have five essay questions that will cover lecture material and assigned exercises. Students will be able to choose four of the five questions to be graded. *The third exam is not comprehensive, but will only cover the material since exam two.*

**Biol/ESRP 569.** Students will be evaluated on three exams, a scientific paper, and three journal paper evaluations. Exams will have five essay questions that will cover lecture material and assigned exercises. Students will be expected to answer all five questions. *The third exam is not comprehensive, but will only cover the material since exam two.*

Assignment	469	569
Exams (100 points each)	300	300
Scientific Paper		125
Journal Paper Evaluation		150
<b>Total Points</b>	<b>300</b>	<b>575</b>

**The grade scale will be:**

90%+ = A	77-79 = B-	64-66 = D+
87-89 = A-	74-76 = C+	60-63 = D
84-86 = B+	70-73 = C	<60 = F
80-83 = B	67-69 = C	

**Academic Dishonesty.** The WSU handbook defines Academic Dishonesty as follows:

"academic dishonesty includes cheating, falsification, fabrication, multiple submission, plagiarism, abuse of academic materials, complicity, or misconduct in research."

*Plagiarism* is the inclusion of any material that is not your own, without adequate reference to its author. In its simplest form, plagiarism is the direct copying or duplication of another person's words without quotation marks or citation (or both). Including ideas in your work that are not your own, without adequate citation, is plagiarism. Paraphrasing can also be a form of plagiarism if the paraphrased text is too similar to the original. If you have any doubt at all about what constitutes plagiarism, you need to discuss immediately this matter with your instructor. The University generally prohibits acts of academic dishonesty in order to foster the principles of truth and academic honesty. The academic integrity procedures used by the University are considered a part of creating an educational environment that does not award undeserved credit. Definitions of academic dishonesty and the University Academic Integrity Policy can be read at the following Web Site:

[http://www.studentaffairs.wsu.edu/hb\\_standards.asp#ac160](http://www.studentaffairs.wsu.edu/hb_standards.asp#ac160)

**Cheating on an exam or a writing assignment (including plagiarism) will result in a final grade of F for the entire course, will be reported to the Office of Student Affairs, and will result in additional disciplinary action by the University.**

**Students with Disabilities.** Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please visit the Disability Resource Center (DRC). All accommodations MUST be approved through the DRC (Washington Building, Room 217). Please stop by or call 509-335-3417 to make an appointment with a disability specialist.

## Lecture Schedule

Lecture	Topic
1	Introduction
2	History of ecosystem and earth science
3	Research tools in ecosystem and earth science
4	Climate – Paleoclimate and climate drivers
5	Climate – Current climate
6	Biogeography
7	Evidence for global change – Introduction
8	Evidence for global change – Drivers of change
9	Carbon balance of plants
10	Carbon balance of terrestrial ecosystems
<b>11</b>	<b>Exam 1</b>
12	Primary production
13	Soil carbon and nitrogen
14	Soil carbon and nitrogen
15	Soil carbon and nitrogen
16	Atmospheric chemistry
17	Soil-plant-atmosphere water continuum
18	Ecosystem water balance
19	Succession and how to write a scientific paper
20	Succession and ecosystem stoichiometry
21	Ecosystem responses to elevated CO <sub>2</sub>
<b>22</b>	<b>Exam 2</b>
23	Invasive species
24	Biodiversity
25	Land-use change
26	Hydrologic cycle
27	Global change in the Pacific Northwest
28	Future global change predictions and policy
29	Future global change predictions and policy
30	Future global change predictions and policy

## Additional assignments for Biol/ESRP 569

### Review Paper

A literature review paper is required for all students enrolled in Biol/ESRP 569. The topic must address some aspect of ecosystem ecology. Feel free to discuss potential topics with us. All papers must include summary and literature cited sections, be typed double-spaced, and be free of grammatical and typographical errors. *Format the paper following the Instructions for Authors for the journal "BioScience."* I can provide you with a copy.

Writing a paper can be divided into several discreet units:

- A. Beginning Stages
  - 1. Decide on the general topic (title) of the paper.
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  - 1. Write the first draft in one session.
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We will ask to see each stage of the paper along with our edits on all previous stages. Important dates are:

- |     |  |
|-----|--|
| TBA | Initial Outline. Do not wait until the day before class to work on this. It should include the title of your paper and a coherent set of topics to be addressed. This will be worth 25 points.         |
| TBA | Complete outline. This should include a title page, a paragraph outline for each of the topics mentioned in the initial outline, figures and tables, and a bibliography. This will be worth 50 points. |
| TBA | Final paper due.   |

## **Additional assignments for Biol/ESRP 569 (cont.)**

### **Reviewing scientific papers**

- Goals:** Expose students to the broad area of ecosystem dynamics. Learn how to apply research results and approaches to their own area of interest.
- Expectations:** It is expected that you read and provide comments on the paper. Students should also be active participants in the discussion.
- Requirements:** Each student will turn in an evaluation of three scientific papers. Provide copies for your fellow students for their files. Topics you should address in your evaluation are (one paragraph each):
1. What do you see as the strengths of the paper?
  2. What do believe are the weaknesses?
  3. What new information did you learn from the paper?
  4. Describe how to apply the results and the conclusions of the paper to your own research interests. This does not necessarily mean your thesis research, but to your broad interests in science in general.



*\*REVISED\**

*AGENDA #62*

**Ecosystem Ecology and Global Change  
Biol and ES/RP 469/569**

**Instructors:** Dr. R. Dave Evans Dr. Cailin Orr  
Office: Abelson 335 Webster 1155  
email: [rdevans@wsu.edu](mailto:rdevans@wsu.edu) [chorr@wsu.edu](mailto:chorr@wsu.edu)

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**Campus Safety and Emergencies.** Washington State University is committed to enhancing the safety of the students, faculty, staff, and visitors to the Pullman campus. As part of this commitment, the university has prepared a Campus Safety Plan that can be found at <http://safetyplan.wsu.edu/>, and contains a listing of university policies, procedures, statistics and information relating to campus safety, emergency management and the health and welfare of the campus community. Campus emergency and travel alerts can be found at <http://alert.wsu.edu/>. Please register your contact and emergency information at your <http://my.wsu.edu/> website. Further information on emergencies can be found at <http://oem.wsu.edu/emergencies>.

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<b>Exam 3 during finals week. Not comprehensive!</b>	

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