

# Indigenous Peoples and Ecological Change

Winter & Spring 2006

## Syllabus

### Faculty:

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Office hours for both Frances & Erik: Tuesdays, 10:30 – 11:30; others by appointment.

**Program Secretary:** Pam Udovich, Lab I 1010, 867-6700

**Science Instructional Technician:** Jenna Nelson, nelsonj@evergreen.edu

**Laboratory Teaching Assistant:** Kiri Kreamer, 867-5162, kirikreamer@gmail.com

Tuesday	Wednesday	Thursday	Friday
8:30-10:00: Lecture (B1105)	8:30-13:00 Workshop (B1107 or CAL)	8:30-12:30 Lectures (B1105)	8:00-12:00 or 13:00-17:00 Lab (Lab 2 3216)
13:00-15:00: Seminar (Longhouse 1007)		13:30-15:30 Projects (Longhouse 1007)	10:00-12:00 or 14:00-16:00 NAS Seminar (A2109/A3107)

### Overview:

We believe that although disciplines are often taught separately in schools, rarely in life are they found in isolation. Rather, they are combined in intriguing, challenging, and problematic ways in real life. This program, Indigenous Peoples and Ecological Change (IPEC), combines Indigenous Peoples Studies, Biology and Ecology in an effort to examine some of the ways in which these disciplines collide, collude, or work in tandem to present some of the issues that affect the global village in which we live.

IPEC is an all-level program designed to provide the scientific skills necessary to understand some of the issues, problems and consequences of geo-political demands on natural ecosystems and Indigenous cultures. We will cover standard topics from first year college biology and ecology. When combined with introductory policy, history, politics, geography and economic components of primarily North American Native peoples, our studies of ecology will provide the valuable knowledge necessary to understand issues surrounding Indigenous Peoples and environmental studies.

We believe that studying life, nature, and political processes to be exciting and interesting. Therefore, one objective of IPEC is to develop the basic skills needed to effectively analyze environmental issues. To understand the some of the forces affecting Indigenous peoples broadly, and Native peoples of North American in particular, as well as to improve our effectiveness in how we care for the natural world, it is not enough to only study the natural sciences (e.g., the organism, ecology, biology, or chemistry). Nor is it sufficient to only examine the human systems that determine how we interact and treat the natural world. Given this, in IPEC we combine the social sciences and natural sciences to provide the broad foundation necessary to both understand environmental issues and to be effective as agents of change.

Learning will take place through lectures, workshops, seminars and biology laboratory exercises. Work in the field and a multi-day field trip in spring are also planned to gain first hand exposure to various peoples and environments.

IPEC is a two quarter program. While students could enroll for winter quarter only, much of what makes the program coherent and meaningful requires a two quarter commitment. During winter

quarter, we will begin our study of general biology, ecology and Indigenous cultures. A central focus of spring quarter will be independent research projects on topics pertaining to Indigenous Peoples and ecological change.

General Biology and Ecology: The objective of the biology component is to gain a basic familiarity with fundamental topics in biology and ecology. Evaluation will be based on attendance, active participation in labs, workshops and field trips, completion of Lab assignments and worksheets, your lab notebook, quizzes and exams.

IPEC Tuesday Seminars: The objective of seminar is to provide students with the ability to analyze issues integrating natural science and Indigenous Peoples, improve their understanding of environmental issues, enhance their understanding of Indigenous encounters and experiences with Western science, and introduce alternative, Indigenous ways of knowing “science.” Evaluation will be based on attendance, completion of readings, active participation in discussions, and in-class writing assignments.

Native American Studies: During winter quarter, workshops, lectures, and Friday seminars will introduce some of the geo-political environmental issues facing Indigenous Peoples within the global community. Heavy emphasis will be on the environmental issues facing Indigenous Peoples on the North American hemisphere. Indigenous Nations & Settler Societies, history, politics & neo/colonialism, and geography are some of the aspects that will be introduced and examined. Issues of social justice, the significance of Native resistance, and on-going struggles will also be included. Although lecture foci are listed in the syllabus, the topics may be modified as the program develops. Evaluation will be based on attendance, active participation in all workshop, lecture and seminar activities & discussions, quizzes and completion of short assignments. Typed reading reflections (2-3 pages) on the Friday readings will be submitted at the beginning of Friday seminar. For the reading reflection: provide a 1-page summary of the reading, and for the balance of the paper provide your reactions to the readings.

Group Projects: Students will work in groups of 4-5 to conduct research projects investigating topics that will be provided by the faculty. A more extensive handout will describe these.

**Course Equivalencies:** Credit will be awarded in the fields of ecology, general biology, Native American Studies and others TBD. **No upper division science credits will be awarded.**

**Email:** All students must have an email account and agree to check it regularly. You must send Erik an email from your account by the end of Thursday of week one (1/12/2006) confirming your acceptance of the program covenant and continued participation in the program. Students not sending such an email will be dropped from the program via a note to the Registrar's office on Friday, 1/13/2006. Some announcements and/or assignments will be sent and/or collected via email.

**WWW:** Information on IPEC can be found on Evergreen's web page at <http://academic.evergreen.edu/curricular/ipec/>. You can access the handouts folder and your personal folder in the CAL at <https://calfiles.evergreen.edu/>.

**Texts:**

*Resource Rebels* by Al Gedicks  
0896086402: South End Press

*All Our Relations: Native Struggles for Land and Life* by Winona LaDuke  
0896085996: South End Press

*The Invasion of Indian Country in the 20th Century* by Donald L. Fixico  
0870815172: University Press of Colorado

*Ecocide of Native America: Environmental Destruction of Indian Lands and Peoples* by Donald A. Grinde  
1574160052: Clear Light Publishing

*Empty Nets: Indians, Dams, and the Columbia River* by Roberta Ulrich  
0870714694: Oregon State University Press (**OUT OF PRINT**)

*Life: The Science of Biology* by Purves et al.  
0716798565: Sinauer Associates

*Essentials of Ecology* by Townsend et al.  
1405103280: Blackwell Publishing

*Mismeasure of Man* by Stephen J. Gould  
0393314251: Norton

*Last Standing Woman* by Winona LaDuke  
0896584526: Voyageur Press

*Native Science: Natural Laws of Interdependence*, by Gregory Cajete **New edition**  
1574160419: Clear Light Publishing

*Red Earth White Lies: Native Americans and the Myth of Scientific Fact*  
Vine Deloria, Jr.

**Other Readings:**

*Life, Lineage and Sustenance. Indigenous Peoples and Genetic Engineering: Threats to Food, Agriculture, and the Environment* by Stephanie Howard (in pdf in the CAL folder).

Rains, F. V. (2003). To greet the dawn with open eyes: American Indians, white privilege and the power of residual guilt in the social studies. In G. Ladson-Billings (Ed.), *Critical race theory perspectives on the social studies: The profession, policies, and the curriculum*. Greenwich, CT: Information Age Publishing, Inc.

Rose, W. (1992). The great pretenders: Further reflections on whitemanhood. In M. A. Jaimes (Ed.), *The state of Native America: Genocide, colonization & resistance* (pp. 403-421). Boston: South End Press.

Whitt, L. A. (1998). Cultural imperialism & the marketing of Native America. In D. A. Mihesuah (Ed.), *Natives and Academics: Researching and Writing About American Indians* (pp. 139-171). Lincoln, NE: University of Nebraska Press.

Others TBA

## Indigenous Peoples and Ecological Change

## Week-by-Week Schedule

### Week 1 (Jan. 10-13)

Tuesday Lecture: Intro to program (Erik & Frances)

Tuesday Seminar: Intro to Seminar

Wednesday Workshop (B1107): Movie: Homeland: Four Portraits of Native Action

Thursday Lecture 1: Intro to Life Sciences. Read *Life* Ch. 1, *Ecology* Ch. 1: pp. 1-10.

Thursday Lecture 2: Intro to Native American Studies—Sovereignty & the Importance of Place

Thursday Project: Project Topics and Library Research Methods

Friday Lab: Safety lecture & safety worksheet, keeping a laboratory notebook. Read: Lab Safety Manual.

Friday Seminar: Read: *Invasion of Indian Country in the 20<sup>th</sup> Century*: Preface, Introduction + Chapters 1-4

### Week 2 (Jan. 17-20)

Tuesday Lecture: Evolution 1 Read *Life* Ch. 23, 23

Tuesday Seminar: *The Mismeasure of Man*. S.J. Gould.

Wednesday Workshop (CAL): Intro to CAL; Metric worksheet, Intro to excel.

Thursday Lecture 1: Evolution 2/Ecosystems Read *Life* Ch. 24 *Ecology* Ch. 2

Thursday Lecture 2: Indian Country in the 20<sup>th</sup> Century [part 1]

Thursday Project: Discuss Project Topics

Friday Lab: Using Basic Lab Tools: Crabs & Pipettes.

Friday Seminar: Read *Invasion of Indian Country in the 20<sup>th</sup> Century*: Ch. 5-10

### Week 3 (Jan. 24-27)

Tuesday Lecture: DNA. Read *Life* Chapters 3 & 11

Tuesday Seminar: *Last Standing Woman*.

Wednesday Workshop: Guest Speaker

Thursday Lecture 1: None

Thursday Lecture 2: Indian Country in the 20<sup>th</sup> Century [part 2]

Thursday Project: Decide Project Groups

Friday Lab: DNA Puzzles Lab

Friday Seminar: Read *Invasion of Indian Country in the 20<sup>th</sup> Century*: Ch. 11 + *Resource Rebels*: Intro + Ch. 1-2

### Week 4 (Jan. 31-Feb. 3)

Tuesday Lecture: RNA, Read *Life* Chapters 3 & 12.

Tuesday Seminar: *Mismeasure of Man* & *Last Standing Woman*.

Wednesday Workshop: TESC Biomes: ends at Farm for Lunch. Read *Ecology* Ch. 4.

Thursday Lecture 1: Meiosis & Mitosis, Read *Life* Chapter 9.

Thursday Lecture 2: Indigenous People & the Global Village

Thursday Project: Work in Project Groups

Friday Lab: Microscopy Lab (Cell cycles & microscopy worksheet)

Friday Seminar: Read: *Resource Rebels*: Ch. 3-6

### Week 5 (Feb. 7-10)

Tuesday Lecture: Proteins, Read *Life* Chapters 3 & 12.

Tuesday Seminar: *Red Earth* Chapters Preface, Intro, Ch. 1, 2, 4

Wednesday Workshop (CAL): Statistics, t-test Crab data (Excel). Read *Ecology*, pp 11-17.

Thursday Lecture 1: Genetic Engineering, Read *Life* Chapter 16.

Thursday Lecture 2: Contact & Colonialism

Thursday Project: Work in library, Longhouse closed.

Friday Lab: Protein Electrophoresis.

Friday Seminar: Read: *Ecocide of Native America*: Intro + Ch. 1-3

**Week 6 (Feb. 14-17)**

Tuesday Lecture: Enzymes & Energy. Read *Life* Chapter 6

Tuesday Seminar: *Native Science* Introduction and Ch. 1-3.

Wednesday Workshop (1/2 class at a time): Reading Gels (CAL) & Plagiarism (B1107)

Thursday Lecture 1: Guest Lecture

Thursday Lecture 2: Worlds apart

Thursday Project: Work in Project Groups

Friday Lab: No Lab, Electrophoresis Assignment Due.

Friday Seminar: Read: *Ecocide of Native America*: Ch. 4, 5 & 8, 9, 10

**Week 7 (Feb. 21-24)**

Tuesday Lecture: Midterm Biology exam (Lab books due!)

Tuesday Seminar: *Native Science* Ch 4-6.

Wednesday Workshop: Mapping & Colonialism, Read: *To Greet the Dawn with Open Eyes*

Thursday Lecture 1: No Lecture

Thursday Lecture 2: A little matter of consequences

Thursday Project: Work in Project Groups

Friday Lab: No Lab

Friday Seminar: *Empty Nets*—entire book

**Week 8 (Feb 28 - Mar 3)**

Tuesday Lecture: Respiration. Read *Life* Chapters 6 & 7.

Tuesday Seminar: Read: *Indigenous peoples and genetic engineering*, and *Cultural imperialism and the marketing of Native America*

Wednesday Workshop (CAL ): 1/2 class at a time: spectrophotometry in CAL

Thursday Lecture 1: Photosynthesis. Read *Life* Ch. 8.

Thursday Lecture 2: Guilt, Wannabes & Other issues Read: The great pretenders.

Thursday Project: Work in Project Groups

Friday Lab: Chlorophyll extraction and spectra. Assignment due March 7<sup>th</sup>.

Friday Seminar: *All Our Relations*: Intro + Ch. 1-5

**Week 9 (Mar. 7-10)**

Tuesday Lecture: Food Chains. Read *Ecology* pp. 317-329 & Ch. 11.

Tuesday Seminar: Red Earth White Lies: Ch. 5, 6, 7

Wednesday Workshop (CAL): Food Chain math (worksheet due Tuesday, March 12<sup>th</sup>).

Thursday Lecture 1: Earth's Carbon Cycle. Read *Life* Ch. 58, *Ecology* pp. 449-457.

Thursday Lecture 2: Worlds apart

Thursday Project: Work in Project Groups

Friday Lab: Metabolism: Bomb Calorimetry (assignment due Wednesday, March 13<sup>th</sup>).

Friday Seminar: *All Our Relations*: Ch. 6-10

**Week 10 (Mar. 12-15)**

Tuesday Lecture: Review

Tuesday Seminar: *Environmental Racism*

Wednesday Workshop (CAL 1/2): Evaluation process and complete group evaluations.

Thursday Lecture 1: Final Biology Exam

Thursday Lecture 2: The “So What” Factor

Thursday Project: Short Presentations on Project Progress. Annotated Bibliographies Due.

Friday: Friday Lab: Laboratory Practical Examination. Hand in lab notebooks.

Friday Seminar: Final essay + “Last Words”

**Week 11 (March 16-22): Evaluation Conferences**

## **PROGRAM COVENANT      IPEC Winter/Spring 2006**

1. If you are having difficulty with some aspect of the reading assignments, lectures, seminars, laboratory work, presentations or projects please see one of the faculty ASAP in order to minimize potential problems and negotiate loss of credit.
2. You must read the syllabus and all other handouts.
3. You will send Erik an email message by Thursday afternoon of week one with "email address" as the EXACT subject line confirming your acceptance of this covenant and continued participation in the program. Students not doing this will be dropped from the class.
4. You will maintain an email account and check it daily.
5. Faculty will respond to emails in a timely manner.
6. Faculty are not likely to return phone calls.
7. All assignments must be completed on time. Reading assignments need to be completed before the start of class/seminar.
8. There is a copious amount of reading in this program. Students will dedicate the required time, concentration and effort to maintain the reading schedule.
9. Missing/late assignments, seminars, labs, *et cetera* will result in loss of credit. No make-up exams will be given. No make-up workshops, lectures, seminars or laboratory sessions will be available.
10. Assignments turned in after the due date will not be evaluated.
11. Faculty will evaluate assignments as quickly as possible.
12. Students must be willing to work with living and dead organisms.
13. We will keep laboratory spaces clean and tidy. Students must participate in the end of the year lab clean up session. Lack of participation in this lab clean up session will result in loss of credit.
14. We will strive to use the metric system in this program at all times.
15. If there is a problem that arises in the program, you are responsible for informing us ASAP.
16. Remember the adage "a milligram of prevention is worth a kilogram of cure".
17. We will observe the Evergreen Social Contract at all times (<http://www.evergreen.edu/social.htm>).
18. In order to maintain a vibrant learning environment during seminar, discussions will be characterized by openness, honesty, civility, fairness, respect and tolerance toward others.
19. Cell phone chimes must be turned off during all program activities.
20. The use of personal laptops and PDAs is prohibited during class activities unless specifically approved by the faculty member.
21. Faculty will conduct a workshop on avoiding plagiarism. Plagiarism will result in dismissal from the program and loss of all credits for the entire program. For information about avoiding plagiarism, please visit these 2 websites: <http://www.fas.harvard.edu/~expos/sources/chap3.html> & <http://www.evergreen.edu/studenthandbook/rules.htm>.
22. Faculty will send out 5<sup>th</sup> week warning letters to inform students that may be in danger of losing credit at that time.
23. Faculty will be available in their offices after class on Tuesday mornings to discuss any questions you may have about the program.
24. Work performed at a poor level will not be awarded credit.
25. Lack of participation and/or lack of preparation for seminar will result in loss of credit.
26. Students will complete a self evaluation and an evaluation of both faculty members before their final evaluation conference.
27. Faculty will complete student evaluations as quickly as possible. Our evaluations will be clear, concise and truthful.
28. If there is something in the program syllabus, schedule or covenant that is not acceptable, you should not enroll in "Indigenous Peoples and Ecological Change".
29. By continuing in the program beyond the first day, students agree to complete the course as outlined in the syllabus and agree to follow this covenant.