

**FORMAT 6**

Submit originals and one copy and electronic copy to Governance/Faculty Senate Office  
(email electronic copy to [fysenat@uaf.edu](mailto:fysenat@uaf.edu))

<b>REQUEST FOR CORE ORAL INTENSIVE DESIGNATOR</b>
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**SUBMITTED BY:**

<b>Department</b>	Biology & Wildlife	<b>College/School</b>	College of Natural Science and Mathematics
<b>Prepared by</b>	Tamara Harms	<b>Phone</b>	474-6117
<b>Email Contact</b>	<a href="mailto:tkharms@alaska.edu">tkharms@alaska.edu</a>	<b>Faculty Contact</b>	Tamara Harms

See <http://www.uaf.edu/uafgov/faculty/cd> for a complete description of the rules governing curriculum & course changes.

**1. COURSE IDENTIFICATION:**

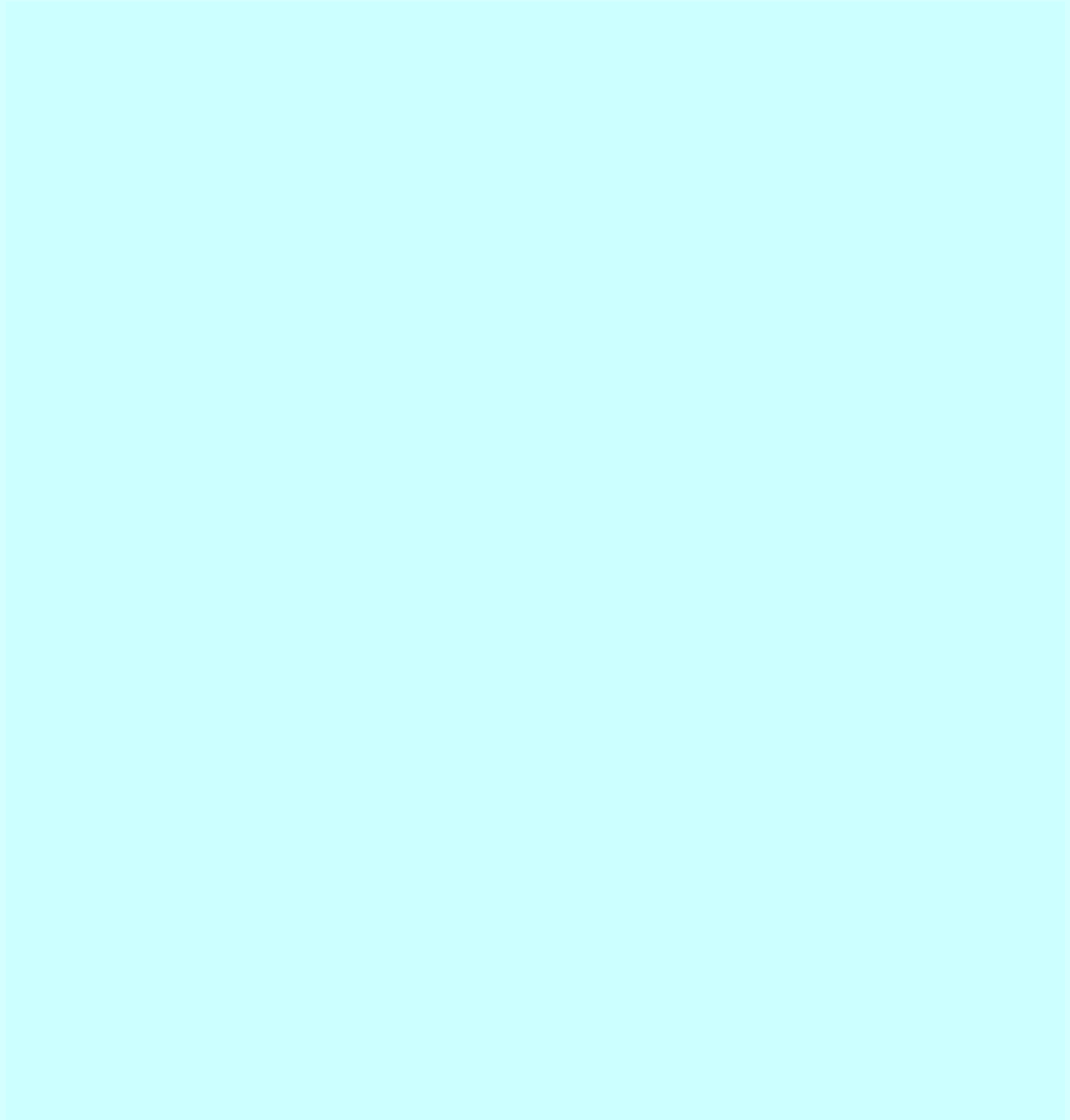
<b>Dept</b>	BIOL	<b>Course #</b>	476	<b>No. of Credits</b>	3
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<b>Existing Course</b>	476	<b>New Course Pending Approval</b>	
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***JUSTIFICATION FOR ACTION REQUESTED***

**The attached syllabus must clearly reflect the following basic elements for the **ORAL COMMUNICATION** emphasis requested. Please note them directly on the syllabus, using**

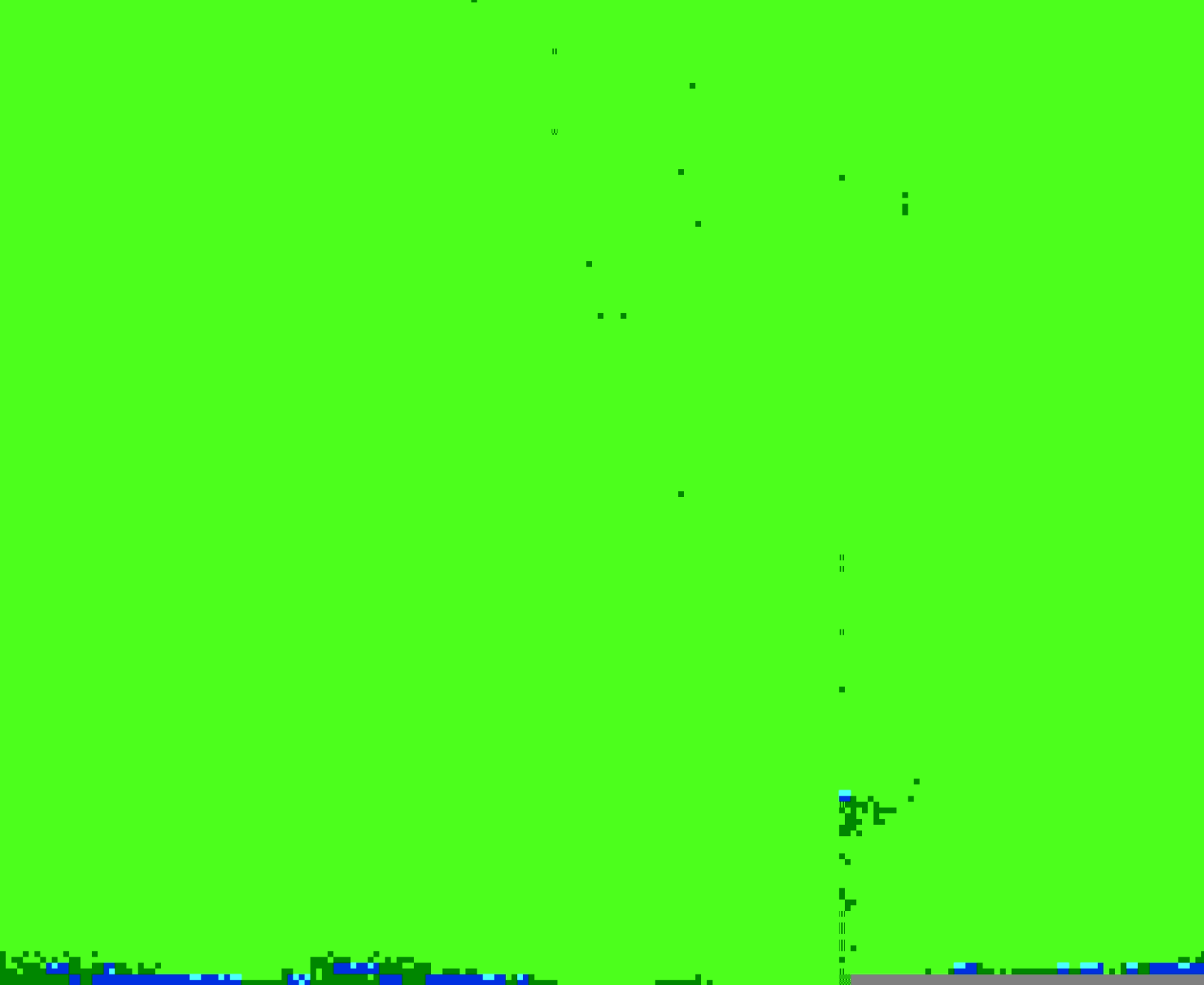
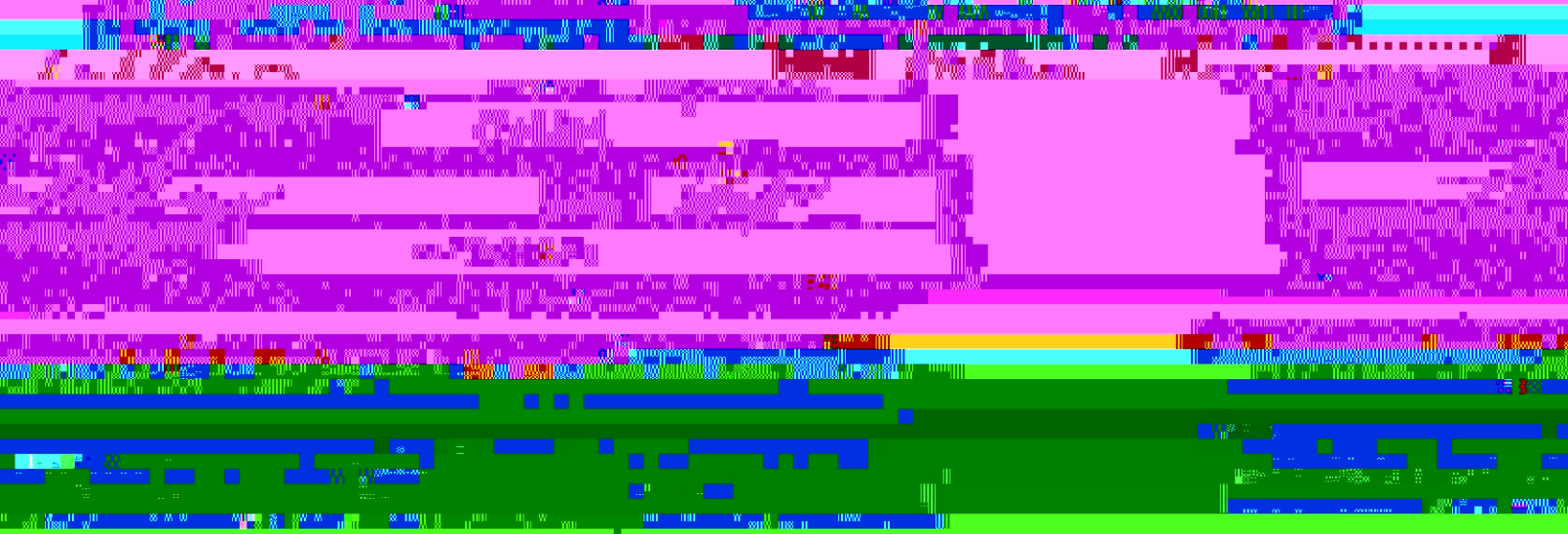


APPROVALS?

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Signature Check



Ecosystem Ecology  
Biology 476 (3 credits)  
Spring 2013

Instructor: Tamara Harms  
Office: 120 Arctic Health Research Building  
Email: tkharms@alaska.edu  
Office hours:

Prerequisites: BIOL 271 (Introductory Ecology), COMM 131 or 141

Course materials

Textbook: Chapin, F.S., III, P.A. Matson, and H.A. Mooney. 2011. Principles of Terrestrial Ecosystem Ecology. 2<sup>nd</sup> edition. Springer-Verlag, New York. The text is available on the internet

Chapters as assigned from: Schlesinger, W.H. 2007. Biogeochemistry: An Analysis of Global Change. 2nd edition. Academic Press. Available on Blackboard

Peer-reviewed papers: As assigned for discussion sessions. Available on Blackboard

Course description

Ecosystem ecology is the scientific study of the interactions, including feedbacks, among organisms and the non-living environment. The first part of the course provides an introduction to the ecosystem concept and the historical development of the field. Next, we survey the environmental factors (e.g., climate and soils) that govern ecosystem processes. We then discuss the major ecosystem processes and mechanisms driving them. Finally, we integrate this information to consider ecosystem services, sustainability, and responses of ecosystems to global change.

Oral-Intensive (O) Course

This course is designated as Oral-Intensive (O). Oral activities in this course will follow these rules:

-A minimum of 15% of the graded work in the O course will be based on effectiveness of oral communications

-Students will receive (P)1(eer)]TJ 0 Tc 0(der)7( 1002 T6cn(eer)]TJ 0 )-3(s)4(s)4(:)7(s)4( Tw 4(i)6(i)6

- Describe the major ecosystem processes and the factors influencing process rates (in written and oral forms)
- Apply the scientific method to ecosystem problems
- Analyze ecosystem processes using quantitative methods
- Read, analyze, and discuss scientific literature

### Instructional methods

be posted on Blackboard

–Read and respond to UAF email in a timely fashion

–Include BIOL 476 in the subject line in all email correspondence with instructor

## Schedule

Jan 17 (Thurs)

- Course mechanics
- Problem-solving
- Introduction to C cycle and decomposition

Jan 22 (Tues)

- How to read scientific papers
  - Structure and goals of scientific discussions
  - Discussion: Decomposition, Hobbie 1996
- Reading: p. 151-175 in Chapin et al., Hobbie 1996 Ecological Monographs

Jan 24 (Thurs)

- Field trip to various West Ridge sites
- Design decomposition experiments

Jan 29 (Tues)

- Ecosystem concept and history
  - Construct litterbags, begin experiments
- Reading: p. 3-13 in Chapin et al.

Jan 24 (Thurs)

- Climate, atmosphere, and ocean circulation
  - Discussion: history and development of the ecosystem concept, Tansley, Gleeson, and Clements
- Reading: Excerpts from Tansley, Gleeson, and Clements

Jan 29 (Tues)

- Climate, atmosphere, and ocean circulation
  - Weigh litterbags
- Reading: p. 18-45 in Chapin et al.

Jan 31 (Thurs)

- Energy balance
- Reading: p. 71-77 in Chapin et al.

Feb 1 (Fri): Drop deadline

Feb 5 (Tues)

- Lithosphere: state factors, soils
  - Weigh litterbags
- Reading: p. 46-67 in Chapin et al.

Feb 7 (Thurs)

- Hydrologic cycle



Reading: p. 97-150 in Chapin et al.

Feb 14 (Thurs)

-Decomposition

-Discussion: trophic effects on whole ecosystem metabolism, Schindler et al.

Reading: p. 151-175 in Chapin et al., Schindler et al. 1997 Science

Feb 19 (Tues)

-Carbon cycle

-Weigh litterbags

Reading: p. 358-382 in Schlesinger,

Feb 21 (Thurs)

-Nitrogen cycle

Reading: p. 197-215 in Chapin et al.,

Feb 26 (Tues)

-N cycle

-Small watershed approach

Reading: p. 383-396 in Schlesinger

Feb 28 (Thurs)

-N cycle

-Discussion: small watershed approach, Likens et al.

Reading: Likens et al. 1970 Ecological Monographs

Mar 5 (Tues)

-P cycle

-Weigh litterbags

Reading: p. 215-219 in Chapin

Mar 7 (Thurs)

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