

## ISCI 2001: Life & Earth Science for Early Childhood Education Fall 2011 Course Syllabus, Valdosta State University

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**Office Hours:** Mondays 4:30 – 5:30; Tuesdays 3:30 – 4:30. Or by appointment.

**Class Meetings:** MW: Lab sessions A through E, Rm 1043 Bailey Science Center;  
Lecture 3:30 – 4:20 Rm 3009 Bailey Science Center

### Learning Outcomes – Generally, students in ISCI 2001 will be able to:

**Explain** – Subject matter and pedagogical practices

**Interpret and Demonstrate** – Astute reasoning and ability to make meaningful connections between concepts

**Apply** – Links between subject matter and science instruction

**Identify** – Scientific concepts involved in understanding the Life & Earth Sciences

**Reflect – On, the process of learning and teaching science**

**Textbook:** *Life and Earth Science for Early Childhood Education adapted from Integrated Science, Fifth Edition – (2011) Tillery et al. McGraw Hill*

Purchase options: Ebook or Campus bookstore

To purchase the Ebook:

1. Go to <http://create.mcgraw-hill.com/shop/>

2. Search for and select book by Title, ISBN, Author, or State/School.

ISBN: 9781121367234

Title: Life & Earth Science for Early Childhood Education

3. Add the book to your cart and pay using a credit card or access code.

**Required Reading:** This book does not cover all of the material that we will cover in ISCI 2001, but was selected because it is a valuable resource for this class and for later teaching of elementary school science. Selective reading is the best way to stay on top of the material presented in class. It is not necessary to spend time on information that goes into detail over subjects that are not covered in class. For material that is not covered in the book you will have to look for other **reputable** sources. Other science texts or credible internet sites are welcomed. When using resources for homework assignments etc... you must provide the website url or book name to indicate it was used.

**Internet Sources:** The web is a great resource for supplementing information presented in class sessions. When using the Web to obtain images to compose visual displays that demonstrate understanding of the topics you must cite the web page.

**Course Description:** ISCI 2001 is a 3 hour credited course. Students will attend two class sessions within a day that focus on a single theme. The first session will be an Inquiry-Oriented, 50 minute lab that initiates the topic with an **Exploration** activity. The second session will be a 50 minute lecture devoted to the elaboration of the core concepts through a detailed **Explanation** of the topic. Members of all lab sections will attend the same lecture. Lectures will involve student participation. By teaching for constructivist learning, emphasis will be placed on the acquisition of conceptual understanding of scientific information.

**Course Objectives:** This science content course provides an integrated overview of Life & Earth Science content in preparation for teaching science at the elementary school grade levels. Topics covered in the K-5 Georgia Performance Science Standards will be addressed in lessons that allow Early Childhood Education majors to learn science in the non-traditional ways they will eventually be expected to teach in their own classrooms. VSU General Education Outcomes may be found in detail on VSU's website. The General Outcomes covered in this class are: 3, 4, 5, 7.

**Instructional Philosophy:** ISCI 2001 will bridge the gulf between scientific and educational disciplinary training by allowing future teachers to learn new scientific information through a variety of instructional innovations. The course employs methods that enact the rhetoric of science education reform. This nontraditional approach to college science helps prospective elementary school teachers make connections between methods of teaching and learning science.

**Academic Honesty:** Members of the class are expected to maintain high standards of integrity. The VSU Biology Department Statement on Plagiarism clarifies common types of academic misconduct. Dishonesty will not be tolerated; evidence of cheating will result in no credit for the assignment or depending on the case, a grade of "F" for the course and letter of concern documenting the problem to the College of Education. Please see end of syllabus for clarification.

**Special Services:** Students requiring classroom accommodations or modifications because of a documented disability should discuss this need at the beginning of the semester. Students not registered with the Special Services Program should contact the Special Services Office, Nevins Hall 1115, 245-2498.

**Family Educational Rights & Privacy Act:** Grades cannot be posted by Name, Social Security Number, or other Personal Identifiers. Grades and student work will not be given over the telephone, by email or to another student.

### **Class Conduct**

**Class Participation:** The learning environment has a very significant impact on the satisfaction and success of all students. Therefore, certain standards of decorum will be expected and maintained so that everyone can enjoy being in the lab and learning as much as possible. Inappropriate conduct such as rudeness, lack of collegiality, or other behavior that affects the classroom atmosphere negatively will result in that student being asked to **leave the classroom/lecture hall**. As future teachers, students are expected to exhibit a professional standard of decorum; intemperate language, excessive slang, and poor grammar are not acceptable.

### **Food and Drink:**

Food and/or drink are NEVER permitted in the lab.

### **Cell Phone Policy:**

Cell phone use is not permitted in class (lecture or lab). If you are expecting an important call inform the professor and when you receive the call step outside the classroom. A ringing phone, text alert tone or observation of a student using a cell phone will result in a deduction of **1% off the final grade per offense**. Frequent offenders will be asked to **leave the class session**.

### **How to write an email:**

When writing an email to a professor it is important to show respect to both yourself and the professor. The form of the email should be as follows:

Dear Dr. Croteau,

Body of text....

Sincerely,  
Hyla Opacum

The email should have proper spelling and grammar (NO TEXT SPEAK), address the professor, and have an appropriate sign off (e.g. sincerely, thank you, yours truly...). Failure to write an email correctly may result in the email going unanswered. As prospective teachers it is important to be respectful and polite and be an example of this to your students.

### **ISCI 2001 Course Assessment:**

#### **Written Work & Presentations**

Class Attendance	5%
Earth Science Conceptual Summary with GPS	7.5%
Life Science Conceptual Summary with GPS	7.5%
GA Ecosystem Oral Presentation (Group)	10%
Short Assignments	10%
Educational Resources Project (Group)	15%

#### **Tests**

Midterms – (first exam 10%; second exam 15%)	25%
Final Exam – Comprehensive	20%

## Assessment of Learning

**Attendance:** Since more than half of this course involves active experiences, it's extremely difficult to "make-up" missed material. Therefore, attendance is mandatory and will be taken each class period. Absences need to be university approved and will require documentation substantiating the absence. Students are allowed 3 total unexcused absences before penalties are incurred. Three late arrivals to class will be counted as an unexcused absence. It is the responsibility of the student to obtain missed material from one of their classmates. Anyone who misses **more than 20% of the class sessions** can receive a failing grade for the course.

**Short Assignments:** Short assignments will be given throughout the course to ensure understanding of the material that is being covered and sufficient preparation for exams and large projects. These assignments are worth **10%** of your final grade which is based on whether directions were followed, the amount of effort put into the assignment and a clear demonstration of understanding of the material. These assignments will be described in class and are due at the beginning of lab. **Any assignment turned in after your lab section will be counted as late.** The penalty for late assignments is **5% per day, NO exceptions.** Assignments **MUST** have your Name, Date and Lab Section indicated on it to be awarded full points.

**Examinations:** There will be two midterm exams and one comprehensive final examination. The most important reason for these tests is preparation for the GACE (Georgia Assessments for the Certification of Educators; <http://www.gace.nesinc.com>) exam, but also serve to assess student performance. Do not depend on rote learning or memorization for these exams. Questions will require students to demonstrate individual construction of knowledge and application of the course information. Review of ALL class material is THE BEST preparation and is essential to excelling on exams by building connections between concepts.

**Conceptual Summaries & Georgia Performance Standards (GPS):** You will have to submit one conceptual summary for Earth Science and one for Life Science at the end of each unit. The conceptual summary should demonstrate a **Conceptual Understanding** of the course material and summarize the scientific significance of the material by constructing thought and "connecting the dots" between concepts. Summaries must focus on the **SCIENCE CONTENT**; do not critique the labs. Summaries should be a 2 page, single spaced, word-processed essay. GPS appropriate to each unit also needs to be handed in with the conceptual summary. Obtain a complete set of K-5 science standards from Blazevue and **correlate specific standards with each lesson.** You must **explain** why a certain standard correlates with a particular lesson. **Do not simply put a copy of the GPS in the portfolio!!!** Also, *Don't just name the standard (e.g. S1E3), write it out (e.g. S1E3: Students will be able to...)!*

## Educational Resources Project (Group)

Create educational resources for **one** concept in either Life Sciences or Earth Sciences that you would be responsible for teaching K-5 students. The resources will include:

1. A thorough description of a hands-on activity (including materials needed) that students in K-5 could participate in to learn the concept.
2. A hard copy of a powerpoint showcasing how you would synthesize understanding of the concept (bringing it all together for students involved).
3. Teacher's notes (all notes you need for the powerpoint and activity).
4. The learning objectives and how each of these would be assessed/examined.
5. Any potential issues that you may experience during class and how you will troubleshoot them.
6. Modifications for large versus small class size.
7. **YOU CANNOT USE ANY ACTIVITY THAT HAS BEEN CONDUCTED IN THIS CLASS!**

## Ecosystem Report (Group)

**Research Project:** Each person will select a different **Georgia Ecosystem** to serve as the focus of an investigation. The research on these topics will be conducted throughout the first half of the semester and presented as part of a group PowerPoint presentation during the week prior to Spring Break. The assignment is to learn about and share information on the specifics of these areas including the abiotic conditions (weather, climate, area of Georgia etc...), special characteristics and adaptations of the living organisms, a food web, other biotic factors, etc... This project focuses on the ECOSYSTEM, so, make sure your presentation covers all aspects of the ECOSYSTEM. There must be 3 introductory and 3 concluding slides that compare and contrast the ecosystems covered by the group. However, there is not a limit to the number of slides of the presentation in total. A full color printout of the group report in the 6 slides per page format is due to the professor at the time of presentation.

This is a group effort, however, individual grades will be given because each person will be evaluated by the others in your group in reference to preparation and amount of effort each individual gives. Presentations should be interesting and **20 minutes in duration**; any presentation less than 20 minutes will be graded accordingly (i.e. there will be a penalty).

**Ecosystem Topic Choices****Mesic**

Coastal Plains Coniferous  
 Longleaf Pine Savannahs  
 Piedmont Province  
 Ridge and Valley  
 Maritime Forests  
 Appalachian Highlands

**Aquatic**

Lakes  
 Blackwater Streams and Rivers  
 Mountain Springs and Streams  
 Large Alluvial Rivers  
 Sag and Gum Ponds  
 Estuaries

**Hydric**

Swamps  
 Marshes (Fresh water)  
 Bogs and Fens  
 Salt Marshes  
 Carolina Bays  
 Floodplains

**Coastal**

Barrier Islands  
 Tidal Creeks and Rivers  
 Intertidal Beach Zones  
 Dune Areas  
 Sponge and Coral Reefs  
 Open Ocean and Deep Sea (Atlantic)

**Extra Credit:** There will be no extra credit assignments given in this class.

**Tentative Plan for Instruction & Course Schedule**  
**Schedule is subject to change; Changes to schedule will be announced in class**

<u>Date</u>	<u>Class Topic</u>		
Week 1	Jan	9 11	ISCI 2001 Intro What is Science?
Week 2		<b>16</b> <b>18</b>	<b>Martin Luther King Jr. Day – University Closed</b> Life
Week 3		23 25	Cells Biodiversity
Week 4	Feb	30 1	Prokaryotes Protists
Week 5		6 8	Fungi Plants
Week 6		13 15	Animals Populations & Communities
Week 7		20 22	Ecosystems Heredity
Week 8		27 29	Conservation <b>Exam 1 - Life Science Conceptual Summary &amp; GPS Due (NO LAB)</b>
Week 9	Mar	5 7	<b>Georgia Ecosystem Presentation – Mesic &amp; Hydric (NO LECTURE)</b> <b>Georgia Ecosystem Presentation – Coastal &amp; Aquatic (NO LECTURE)</b>
		<b>12</b> <b>14</b>	<b>Spring Break – No Class</b> <b>Spring Break – No Class</b>
Week 10		19 21	The Ecosphere Earth
Week 11		26 28	Surface Features Fossils
Week 12	April	2 4	Minerals Rocks
Week 13		9 11	Soils Weather & Climate
Week 14		16 18	Clouds Solar System – <b>Educational Resources Project Due</b>
Week 15		23 25	Planets <b>Exam 2 – Earth Science Conceptual Summary &amp; GPS Due (NO LAB)</b>
		30	TBA
	<b>May</b>	<b>4</b>	<b>5:00-7:00 pm Comprehensive Final Exam</b>

## VSU Biology Department Policy on Plagiarism

Plagiarism is a broad term used to describe many forms of cheating that involve taking credit for someone else's work. The most blatant type of plagiarism is copying from another source without giving credit to the author. Anytime the original ideas of someone else are used, appropriate citations must reference the source. The failure to acknowledge the use of someone else's ideas, even when they are paraphrased, (whether intentional or not), constitutes plagiarism. Using a paper written by someone else is obviously plagiarism. In addition, the improper citation of references can fall under this spectrum of offences. Plagiarism is equivalent to looking at someone's test and copying down their answers. It is the theft of intellectual property. The simplest way to avoid plagiarism is to give credit where credit is due! This document has been developed by the biology department faculty to explain plagiarism by clarifying appropriate academic behavior, identifying common mistakes or violations, and warning students of the serious consequences for academic misconduct relating to the misrepresentation of original work.

Recognition of and respect for the ownership of property is one of the distinguishing features of civilization. Ideas come from individuals and are effectively owned by their originators; thus they are intellectual property. In the academic sphere, the ideas of others are often encountered, most often in published form. As with tangible property, intellectual property is subject to ownership and protection. Moreover, publication establishes ownership of intellectual property. It is essential to respect the ideas and writing of others by **scrupulously** citing the sources of any and all ideas that are taken from other people's work.

Writing assignments are a very important way for students to demonstrate the ability to assimilate information and express personal knowledge in a coherent manner. The writing process is an active learning experience involving the demonstration of academic skills such as analysis, inference, and appropriate presentation. Assessment of student writing allows faculty members to evaluate not only an individual's understanding of course material, but also the mastery of processes that are considered an important part of biological education. Therefore, it is extremely important that any written work submitted represents a student's personal synthesis displayed in sentences completely constructed by the student.

The Writing Tutorial Services website at Indiana University (<http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml>) gives the following guidelines for avoiding plagiarism. You must give credit whenever you use:

- another person's idea, opinion, or theory;
- any facts, statistics, graphs, drawings—any pieces of information—that are not common knowledge;\*
- quotations of another person's actual spoken or written words; or
- paraphrase of another person's spoken or written words.

\*In the sciences there is one important clarification to these rules. Any information, even if it is a theory or original idea, that has become widely circulated enough to be found in textbooks is defined as common knowledge. For example, Charles Darwin and Alfred Wallace do not need to be cited every time "natural selection" is mentioned.

There are a variety of ways to obtain assistance on writing assignments. Your professor can clarify expectations in class, help individually in an office conversation, or elaborate instructions by email. The new VSU Student Success Center will provide personal tutoring. There are a plethora of websites devoted to providing writing tutorials. By default, the biology department expects students to use the style recommended by the Council of Science Editors (CSE, formerly and still known as CBE), and succinct directions on how to use this format for citations and references is available on various websites such as: <http://library.osu.edu/sites/guides/cbegd.php>. Specific examples of citation styles may be given to you by your professor that will supersede the CSE/CBE Style.

## Quotations

Sometimes students get a little carried away with the use of quotations. Copying large volumes of material, placing it in quotes and citing the author is not plagiarism, but neither is it evidence of your ability to write a paper. So, you may receive a failing grade for excessive quotations because you failed to actually **write** the paper (see paragraph 3 above). There is a huge difference between transcribing a paper (quoting) and writing a paper (using your own words). You should use quotations judiciously when writing science papers. This style may differ from what instructors in other disciplines are telling you to do, so remember that science papers rarely use quotes of any kind. Generally, no more than five-ten words should be used in a single quote, and not more than one or two quotes per ten-page paper. If you do more than this then you must discuss it with your professor before you turn in your paper for grading.

## Punishment for Plagiarism

Plagiarism will not be tolerated in the biology department. Any student caught plagiarizing will receive a failing grade on the assignment and depending on the situation may automatically fail the course. Ask before making mistakes and do not assume that we are too lazy to check or too stupid to catch cheaters. Ignorance is no excuse and do not expect sympathy for academic misconduct.

## Lab Reports

Students will frequently work in groups during the laboratories. However, lab reports are **never** group projects unless specific instructions to the contrary have been given by the instructor **in writing**. When lab groups work together on projects, each person is expected to do their own analysis of the results. Never use another person's graphs, tables, or words in a report that is supposed to have been written independently. In other words, each student must prepare their own tables and graphs in addition to written descriptions within the report. If lab reports are plagiarized in whole or in part then **all reports in question will be penalized**, not just the reports that were plagiarized. Therefore, **never** give your reports to a classmate to copy.

## Long-Term Consequences for Cheating

If a professor takes punitive action on a student's plagiarism incident then, depending on the situation, the incident may be reported to the Dean of Students where it will be entered into the student's disciplinary record. If you send an application to a professional program such as Medical School or Law School, those schools will contact Academic Affairs at VSU and ask them for your Disciplinary Record. **The cheating incident will then be reported to the schools to which you have applied.** So, you can see that there can be terrible long-term consequences for plagiarism.

*I have read and understood this policy.*

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date