

# ISCI 2001: Life & Earth Science for Early Childhood Education

## Spring 2017 Course Syllabus, Valdosta State University

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**Office Hours:** Mon & Wed 3:30-4:30 or By Appointment. Please feel free to call the office or use email to schedule a convenient appointment or stop in anytime the office door is open.

**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 upcoming Georgia Standards of Excellence, the outgoing K-5 Georgia Performance Science Standards, and the national Next Generation 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.

**Course Description:** This course will follow an Inquiry-Oriented format for science instruction. Every Monday and Wednesday, students will attend two related sessions that focus on a single daily lesson. The first will be an Activity-Based, 50 minute lab at either 9:00 or 10:00 in room 1043 of the Bailey Science Center to open the lesson. The second session will be a 50 minute lecture at 12:00 in room 1024 of the Bailey Science Center devoted to the elaboration of the core concepts through a detailed explanation of the topic.

**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. By teaching for constructivist learning, emphasis will be placed on the acquisition of conceptual understanding of scientific information rather than mere memorization. A variety of alternative assessment strategies will be used in conjunction with traditional testing. This nontraditional approach to college science helps prospective elementary school teachers make connections between methods of teaching and learning science.

**Text:** Integrated Science 6<sup>th</sup> Edition by Tillery et al. McGraw Hill in the *Connect* Platform (eBook & eLearning)

**Purchase Directly from Publisher to save money:** <http://connect.mheducation.com/class/l-jones-ab>

You may sign up for a free 2-week trial until your financial aid money is available or you can purchase a code at the bookstore.

If you would like a hard copy of the text, you can purchase a loose-leaf version with a credit card for \$25.00 when you register on *Connect*.

**McGraw Hill Customer Support:** Call (800) 331-5094 if you have any problems with the program.

### Required Technology Platforms:

**LMS-Blazeview:** Learning Management System - Your VSU Account: This will be used for all class communication, writing assignments, and access to various resources. (<http://www.valdosta.edu/academics/elearning/blazeview-d2l.php>)

**CMS-McGraw Hill Connect:** Course Management System - This is a complete electronic version of the book and a versatile software product for the graded, adaptive pre-reading *LearnSmart*, practice assignments and pre-tests.

**Instructional Design:** There will be online assignments in a *Connect* program associated with the eBook to introduce you to some of the lecture information before almost every class. These will be listed on the syllabus and the assignment page in *Connect*. You must keep track of the deadlines because these will not be reopened for any reason. This is so that we can use class for elaboration of important concepts, explanation of anything that was unclear, and learning activities that are more effective than sitting and taking notes. You will also be assigned online interactive homework called a Practice assignment for the first unit to prepare you for the exam. These will give you 3 graded opportunities to apply the information and identify any areas that you need to study more extensively. Before the first exam, you will also have access to a Practice Test which contains a large pool of multiple choice question from which you will have 3 graded chances to try 50 questions as preparation. On the Practice and Pretests, only your highest grade will count.

**Academic Honesty:** Members of the class are expected to maintain high standards of integrity. This course will use the VSU Handbook Code of Ethics as a basic standard of behavior, and everyone in the class is required to read the Biology Department Plagiarism Policy posted at: <http://www.valdosta.edu/colleges/arts-sciences/biology/documents/resources/PlagiarismPolicy.pdf> Evidence of dishonest conduct or cheating will result in no credit for the assignment and depending on the case, a grade of "F" for the course. Do not expect lenience for claims that on the grounds of not knowing better. You will be reported to the Dean of Students and letter of concern documenting the problem to the College of Education. Be aware that employers such as school systems do call that office at VSU to check on whether you have a record of infractions.

**Access Statement:** Students with disabilities who are experiencing barriers in this course may contact the Access Office for assistance in determining and implementing reasonable accommodations. The Access Office is located in Farbar Hall. The phone numbers are 229-245-2498 (V), 229-375-5871 (VP) and 229-219-1348 (TTY). For more information, please visit VSU's Access Office or email: [access@valdosta.edu](mailto:access@valdosta.edu).

**Title IX Statement:** Valdosta State University (VSU) is committed to creating a diverse and inclusive work and learning environment free from discrimination and harassment. VSU is dedicated to creating an environment where all campus community members feel valued, respected, and included. Valdosta State University prohibits discrimination on the basis of race, color, ethnicity, national origin, sex (including pregnancy status, sexual harassment and sexual violence), sexual orientation, gender identity, religion, age, national origin, disability, genetic information, or veteran status, in the University's programs and activities as required by applicable laws and regulations such as Title IX. The individual designated with responsibility for coordination of compliance efforts and receipt of inquiries concerning nondiscrimination policies is the University's Title IX Coordinator: Maggie Viverette, Director of the Office of Social Equity, [titleix@valdosta.edu](mailto:titleix@valdosta.edu), 1208 N. Patterson St., Valdosta State University, Valdosta, Georgia 31608, 333-5463.

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

# ISCI 2001 – Guidelines for Content & Evaluation

## Learning Outcomes - Students in ISCI 2001 will be expected to:

- I. Practice applying information showing recognition of the basic aspects of Life & Earth Science
- II. Characterize the biotic and abiotic features of the earth, as well as the place of our planet within the solar system
- III. Document recognition of select sections of the GSE Science, K-5 Georgia Performance Science Standards & NGSS
- IV. Compare and contrast how the abiotic factors influence the biotic features of representative global ecosystems
- V. Indicate the possession of conceptual understanding of GPS K-5 content knowledge for Life & Earth Science

## Proof of mastery for each will be demonstrated by the knowledge & skill shown in:

- I. LearnSmart – Dedicated practice of eBook material employing an adaptive learning program
- II. Midterm Examinations – Formative evaluations covering course content
- III. Periodic Assignments– Synthesis of the content covered in class with connection to the standards
- IV. Global Biome Oral Presentations – PowerPoint show applying course content to a chosen global biome/ecosystem
- V. Final Examination – A summative, comprehensive evaluation of course content

## The following facets of understanding will be built into the course assessments:

**Explanation** – Description of subject matter and pedagogical practices

**Interpretation** – Demonstration of astute reasoning and ability to make meaningful connections between concepts

**Application** – Explanation of the links between subject matter and science instruction

**Perspective** – Identification of the scientific concepts involved in understanding the Life & Earth Sciences

**Empathy** – Participation in a community service activity for underserved children

**Self-Knowledge** – Illustration of personal reflection on the process of learning and teaching science

### Course Assessment:

#### Written Work & Presentations

LearnSmart Work in Connect	25%
Blazeview Assignments	10%
Attendance* & Class Participation	15%

#### Exams

Midterms – Average of 3 – 10% Each	30%
Final Exam – Comprehensive	20%

**Learning Management System:** You will be using your account in VSU Blazeview to submit any of the assignments for the course. Late work will not be accepted for any reason, so be in the habit of getting the papers in early in case something happens. All class communication will take place here and you should check for clarification of assignments and important messages often.

(<http://www.valdosta.edu/academics/elearning/blazeview-d2l.php>)

**Email:** We are going to use the **Blazeview email** for class. There is a certain standard of etiquette in higher education that is very different from the way you interact with your friends while texting. My VSU email is for emergencies.

My title is **Dr. Jones** and start any email with that included in a greeting

The first thing you should do is tell me **which of my classes you are in**

The next sentence should contain the **reason for your message**

After you explain yourself using **good grammar & spelling** – This is not a “text message”

**Proofread** – I do not expect garble from people who are looking for a college diploma

Close the message properly showing you know the **proper decorum to use with your professor**

Finally, if you are not polite, **do not expect a response from me** – I will be busy filing it in my “Rude Email” file, and I may enter it in the faculty contest for the “Rudest Email of the Year”

# Class Protocols

## Class Sessions:

Most students come to class to learn and I will not tolerate behavior that disrupts the learning environment. Come to class prepared to concentrate & pay attention. Since some people may not know what is expected in a college classroom, the following rules should make this clear. If I have to stop class and speak to you about a disruption more than once, I will ask to see you after class, and if it happens again you will be dismissed from the classroom and sent to the Dean of Students Office.

## Class Rules:

1. Attend to your personal needs before class and do not get up and walk out of class unless it is urgent.
2. Class will start promptly at the designated time, please have your notebooks open and be ready to pay attention.
3. Once class begins, refrain from side conversations. If you are asking about a word in lecture, make it short & quiet.
4. If a classmate is being rude or distracting you, let them know or say "Shhhhhhhh" loud enough for me to hear.
5. The VSU rules are no eating or drinking in classrooms. Nothing is allowed in the Lab, but Water Bottles are fine in lecture.
6. You are welcome to have your laptops, pads, & phones in class to record lectures, look up terms, and photograph slides. However, this is not an invitation to skype, take calls, or read & send texts. If anyone is bothering you with such behavior, report them to me after class or by email. There will be grade penalties for this type of disruption.
7. Class will end at the designated time, unless you see "THE END" on a slide before, so do not rustle your packs before this.

**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 (Lab & Lecture are separate class). Three late arrivals to class will be counted as an unexcused absence. If you walk into Lab or Lecture class late, it is your obligation to see me and be sure I change the A to T in my gradebook or on the roster. There will be no recourse days later or at the end of the semester because I caught cheaters saying here are my notes for that day and other students later reported that they were lying and had written notes from someone's recording of the lecture. If you are absent, you are still responsible for getting lecture notes from at least 2 other students to be sure you get it all. Any class absences still require assignment submissions by the deadlines. Lab & Lecture are counted as separate class sessions. Anyone who misses more than 20% of the class sessions will receive a failing grade for the course.

\* Here is how attendance will be calculated:

No Absences	125%
1 Absence & All Made-Up	100%
2 Absences	75%
3 Absences	50%
4 Absences	25%
More than 4	0%

**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 all enjoy being in the lab and learning as much as possible from lecture. All students start out with 100% as their participation grade. This can be elevated to as high as 125% for consistent positive contributions that enhance the experiences of other students. This grade will be reduced at the discretion of the instructor on the basis of inappropriate conduct such as rudeness, lack of collegiality, or other negative behavior. You will be moved to another seat in either lab or lecture if I consider your behavior a problem. As future teachers, students are expected to exhibit a professional standard of decorum to be maintained in this classroom. Intemperate language, excessive slang, and poor grammar are not acceptable. We all must use grammatically correct English in the context of this class because schools will ask me if you speak well and I want to be able to verify that. If you know you need to work on this, make the effort. I expect you to correct yourself if mistakes are noticed by me or your classmates.

**Short Assignments:** It is too easy to attend class on a regular basis, but put little thought into the course material until there is pressure to study for an exam. Therefore, you are required to complete LearnSmart assignments related to the eBook on McGraw Hill's Connect system that will introduce you to the material that is being covered. Any other assignments will be described in class and submitted on Blazevue. If you miss those deadline, there will be NO exceptions. These will be graded on a 10 point scale as follows: (10=Excellent, 8-9=Good, 7=Adequate, 6=Minimal, <6 Poor).

**Examinations:** There will be three midterms and a comprehensive final examination. These multiple choice tests will consist of conceptual questions that probe understanding of the course material. This course will be taught in a way that requires students to demonstrate individual construction of knowledge and the questions on these assessments are written to judge the ability to apply the course information. Hard work on the LearnSmart is the best preparation for these exams. Many students say that they do not need to cram for the tests because they are confident that they have learned the material by constructing their portfolios.

## Selected Georgia Performance Standards for K-5

### I. Life Science

- SKL1. Students will sort living organisms and non-living materials into groups by observable physical attributes.
- S1L1. Students will investigate the characteristics and basic needs of plants and animals.
- S2L1. Students will investigate the life cycles of different living organisms.
- S3L1. Students will investigate the habitats of different organisms and the dependence of organisms on their habitat.
- S3L2. Students will recognize the effects of pollution and humans on the environment.
- S4L1. Students will describe the roles of organisms and the flow of energy within an ecosystem.
- S4L2. Students will identify factors that affect the survival or extinction of organisms.
- S5L1. Students will classify organisms into groups
- S5L4. Students will relate how microorganisms benefit or harm larger organisms.

### II. Earth Science

- SKE1. Students will describe time patterns and objects in the day and night sky.
- S1E1. Students will observe, measure, and communicate weather data to see patterns in weather and climate.
- S2E2. Students will investigate the position of sun and moon to show patterns throughout the year.
- S2E3. Students will observe and record changes in their surroundings and infer the causes of the changes.
- S3E1. Students will investigate the physical attributes of rocks and soils.
- S3E2. Students will investigate fossils as evidence of organisms that lived long ago.
- S4E1. Students will compare and contrast the physical attributes of stars, star patterns, and planets.
- S4E3. Students will differentiate between the states of water and how they relate to the water cycle and weather.
- S5E1. Students will identify surface features of the Earth caused by constructive and destructive processes.

## ISCI 2001: Research Reports

**Global Biome/Ecosystem Report** – Each person will select a different topic for individual study from the list on the following page. The objective of the assignment will be to apply the accumulated information on the lithosphere, atmosphere, and hydrosphere to explain how specific abiotic features set the environmental parameters that determine which living organisms occupy this section of the biosphere. The project will involve the compilation of information as PowerPoint slides that will be presented as an individual oral presentation in lab and put together with other students in a collaborative group presentation in class.

**PowerPoint Grading Rubric for Ecosystem Project**

	75%	90%	100%	125%
Slides	Slide Errors Too Much Text Blurry Images	>Six Slides Decent Images Intro & Concl	Striking Visual Displays	Enhancement of Topic
Indiv	Obviously Minimal Effort Mistakes on Info	Coverage of Connection Abiotic & Biotic Factors	Accurate & Detailed Description No Mistakes	Exceptionally Creative & Enthusiastic
Group	Lack of Coordination Late Submission Uncooperative	Cohesive & Coherent Activity/Demo	Strong Intro & Concl Evidence of Cooperation	Lively, Entertaining & Educational

### Other Assignments:

**GPS Concept Maps**- This culminating assignment will review the relationship between the course content and the K-5 GPS using the file (Total GPS) posted in the course content section of Blazeview. The map must show understanding of the conceptual relationships between the Characteristics of Science and the Life & Earth Science Content areas for each of the six grade levels along with recognition of how various lessons throughout the semester addressed specific standards.

# Plan for Instruction & Tentative Course Schedule

Dates	Topics	Lab	Assignments
<b>Nature of Science Unit</b>			
<b>1. The Natural World</b>			
Jan	9 - Levels of Organization 11 - Course Information	Levels of Organization Patterns in Nature	Alphabetical Hierarchy Homework Student Info Due 1/17 on Blazeview [BV]
<b>2. Systematic Study</b>			
	16 - MLK HOLIDAY 18 - Classification	Classification	PowerPoint of Classification Due 1/22 on BV
<b>3. Methods</b>			
	23 - Reasoning 25 - Processes	Fish Lab Processes	LS Ch 1 Lab Report on Fish Lab Due 1/29
<b>4. Domains</b>			
Feb	30 - Measurement 1 - History of Science	Measuring Darwin Cards	Practice (3 Attempts) Due 2/3 Pretest (3 Attempts) Due 2/7
<b>5. Assessment</b>			
	6 - Nature of Science Unit Test 8 - Elementary Science Standards	Essays Test Review	Personal Reflection in BV Due 2/9

## Earth Science Unit

<b>6. Extraterrestrial</b>			
	13 - Universe 15 - Solar System	Parallax Moon Phases	LS Ch 12 & LS Ch 13 LS Ch 14
<b>7. Lithosphere</b>			
	20 - Composition 22 - Constructive & Destructive	Rocks & Minerals Landforms	LS Ch 15 LS Ch 16
<b>8. Hydrosphere</b>			
Mar	27 - Distribution 1 - Ecosystems	Molecules, Phases, pH Water & Other Cycles	LS Ch 18
<b>9. Atmosphere</b>			
	6 - Composition 8 - Climate & Weather	Convection Dew Point & Clouds	LS Ch 17

Mar 2<sup>nd</sup> = Midterm

March 13-17 SPRING BREAK

<b>10. Assessment</b>			
	20 - Ecosphere 22 - Earth Science Midterm	Essays	Personal Reflection in BV Due 3/25

## Life Science Unit

<b>11. Life</b>			
	27 - Characteristics of Life 29 - Cells	Pattern Blocks Analogy Construction	LS Ch 20 Part I Sections 1 & 2 LS Ch 20 Part II Sections 3-8
<b>12. Evolution</b>			
Apr	3 - Origins 5 - Species & Biodiversity	Indigenous Report Cards & Pipe Cleaners	LS Ch 21 LS Ch 22
<b>13. Ecology</b>			
	10 - Biomes 12 - Energy Flow	Critter Art Collage of Ecosystem	LS Ch 23 Part I Sections 1-9
<b>14. Human Body Systems</b>			
	17 - Integrated Functions 19 - Reproduction	Concept Map Lifecycle Posters	LS Ch 24 LS Ch 25
<b>15. Assessment</b>			
	24 - Genetics 26 - Biosphere Test	Egg Lab Essay	LS Ch 26
<b>16. Human Impact</b>			
May	1 - Over-Population		LS Ch 23 Part II Sections 10-14

COMPREHENSIVE FINAL EXAM - Friday, May 5<sup>th</sup> from (10:15-12:15)