

NSCI 115: ENVIRONMENTAL, EARTH, AND LIFE SCIENCE	
SYLLABUS FOR SECTION 04	
Spring 2018	California State University, Fresno
Course Number: 36501	Instructor: Dr. Emily Walter
Units: 3	Office: 218A Science I
Days & Time: T Th 9:30-10:45 a.m.	E-Mail (preferred): ewalter@csufresno.edu
Location: Kremen Ed Building, Room 360	Telephone: 559-278-2362 (email is best)
Website: To access the course, login to Blackboard (https://blackboard.learn.fresnostate.edu) using your Fresno State username and password	Office Hours: Tuesdays 2-4 p.m. OR email for an appointment at another time

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Course Overview

This section of Natural Science 115 is designed especially for Liberal Studies majors and/or individuals planning to teach elementary school. The course also meets G.E. Integration IB.

Prerequisites

This course requires completion of General Education Foundation and Breadth Area B.

Course Description

This section of Natural Science 115 is designed especially *for Liberal Studies majors*. The course also meets G.E. Integration IB.

This is NOT a traditional science course. This unique course designed for you to build upon your knowledge of Earth, Environmental, and Life Science concepts *from the perspective of an elementary school teacher*.

Learning science in this class is combined with exploring how to translate science concepts into science lessons. We focus on Earth, Environmental, and Life Science concepts as well as common misconceptions, Next Generation Science Standards, and connections between science concepts and elements of English-Language Arts, Mathematics, and Social Studies.

Although we will not go in depth into the how’s and why’s of teaching, NSCI 115 classes are designed so that you can experience science through activities that are easy to adapt for your future classroom. In other words, we learn through “classroom ready” activities.

Through learning science content in tandem with science misconceptions and science standards, experiencing science through a variety of classroom activities, and teaching some science yourself, a big goal for the course is for you to develop foundational knowledge and skills for translating science concepts into meaningful lessons.

Student Learning Outcomes

Students will know:

- (1) Life, Earth, and Environmental science concepts as aligned with the disciplinary core ideas of the Next Generation Science Standards, including:
 - a. Earth's Place in the Universe (ESS1)
 - b. Earth's Systems (ESS2)
 - c. Earth and Human Activity (ESS3)
 - d. From Molecules to Organisms: Structures and Processes (LS1)
 - e. Ecosystems: Interactions, Energy, and Dynamics (LS2)
 - f. Heredity: Inheritance and Variation of Traits (LS3)
 - g. Biological Evolution: Unity and Diversity (LS4)
- (2) How science and scientists work (also known as the 'nature of science')
- (3) Ideas and resources for doing active, collaborative, and hands-on science
- (4) Connections between science and math, social studies, and English-Language Arts

Students will develop an identity as a teacher of science by:

- Exploring common misconceptions about scientific ideas
- Engaging in the greater community of science educators, such the California Science Teachers Association and the National Science Teachers Association
- Experience teaching science to elementary school students

As part of this course, students will:

- A. Begin a library of ideas and resources for teaching elementary science
- B. Experience teaching science to elementary school students
- C. Discuss contributions to the sciences by diverse individuals
- D. Practice concepts assessed on the California Subject Examination for Teachers (CSET®)

Required Course Materials

You will need the following materials for class. **Please bring your materials to class every day.**

- An electronic device (tablet*, laptop computer*, or smart phone)
- One 1-subject spiral notebook
- One set of markers or colored pencils
- Small binder or folder to keep course materials in

* = Preferred

Readings for this class will be provided as handouts or through BlackBoard. **I also recommend the two books below.**

- Morgan, E., & Ansberry, K. (2013). *Even more picture-perfect science lessons: Using children's books to guide inquiry, K-5*. Arlington, VA: NSTA Press. ISBN: 9781935155171
- Keeley, P., Eberle, F., & Tugel, J. (2007). *Uncovering Student Ideas in Science, Volume 2*. Arlington, VA: NSTA Press. ISBN: 9780873552738

Grading Scale

A \geq 90%

B = 80 – 89.99999%

C = 70 – 79.99999%

D = 60 – 69.99999%

F = 0 – 59.99999%

Course Policies

When in class, I expect you to be engaged and participating actively. This means that email, texting, homework for other classes, Facebook, YouTube, and online shopping can wait. If this becomes a problem, I will ask you to leave your computer or phone at home.

Checking Email and BlackBoard

Please check your Fresno State email daily and pay attention to the available materials on BlackBoard, including supplementary readings, videos, and the grade book.

Contacting Dr. Walter

Email is the best way to reach me. I usually respond to emails within 24 hours; however, if I am busy or out of town, it may take me longer to respond to your emails. Please use proper letter etiquette and spelling when emailing me (or any professor). Include our course name (NSCI 115) in your email subject line for a faster response.

Late Assignment Policy

Missed quizzes cannot be made up. All other late assignments will be deducted 10% (one letter grade) for every 24 hours late.

Do not let a computer crash or lack of Internet cause your assignments to be late! Please back up your work on the cloud and on a flash drive. Be prepared to act on your feet! You can rent a free computer from the library, borrow a friend's computer, and/or go to a location with 24-hr free Wi-Fi in order to complete your assignments on time.

If you are absent, it is your responsibility to make all assignments due are turned in, and to find out what tasks you need to complete. If you must miss class the day a major assignment is due, I expect you to still find a way to get the assignment turned in.

If a paper-based (non-BlackBoard) assignment is due and you will not be in class -- Please drop off the assignment to Dr. Walter's office in 218 Science I. If the door is locked, please drop off the assignment in 106 Science I to the Biology Department. If the biology office is closed, slide the assignment under the door at Dr. Walter's office in 218 Science I and immediately email Dr. Walter at ewalter@csufresno.edu. The email will serve as the timestamp for when that assignment was received. Assignments too big to fit under the door (such as moon journals) may be clipped to the bulletin board outside my office. Assignments will be considered late if you miss class unless you can document that the absence was beyond your control. Missing class does not give you an extension on the assignment.

Attendance Policy

Students are expected to attend all scheduled class sessions. Due to circumstances beyond your control (ex: illness) or within your control (ex: out of town trip) you may have to be absent during the semester at some point. I recommend that your absences should be used only for circumstances beyond your control. All students are allowed 2 absences (regardless of the reason). **Your final course grade will be lowered if you miss more than 2 classes. This could potentially affect your final letter grade. Details about this are below.** Naturally, if you can document that some or all absences were beyond your control, I would never downgrade you.

3-4 absences: -5%

5-6 absences: -10%

7+ absences: -15%

As a courtesy to your classmates and me, **you need to let me (Dr. Walter) know by email when you will be out of class** so that accommodations in group structure and related plans can be made. Please note that given the hands-on nature of our course, many in-class activities cannot be "made up."

If a paper-based (non-BlackBoard) assignment is due and you will not be in class -- Please drop off the assignment to Dr. Walter's office in 218 Science I. If the door is locked, please drop off the assignment in 106 Science I to the Biology Department. If the biology office is closed, slide the assignment under the door at Dr. Walter's office in 218 Science I and immediately email Dr. Walter at ewalter@csufresno.edu. The email will serve as the timestamp for when that assignment was received. Assignments too big to fit under the door (such as moon journals) may be clipped to the bulletin board outside my office. Assignments will be considered late if you miss class unless you can document that the absence was beyond your control. Missing class does not give you an extension on the assignment.

Extra Credit Policy

There may be opportunities for extra credit during the semester. These opportunities will be available to everyone in class. I do not offer extra credit on an individual basis, as it is unfair to offer credit to some students and not to others.

Please note that I do not post extra credit until the end of the semester. I want people to know their grade that they have earned and then see a nice "boost" at the end. This also helps to ensure students do their best work throughout the entire class, regardless of extra credit.

Policy on Plagiarism Detection

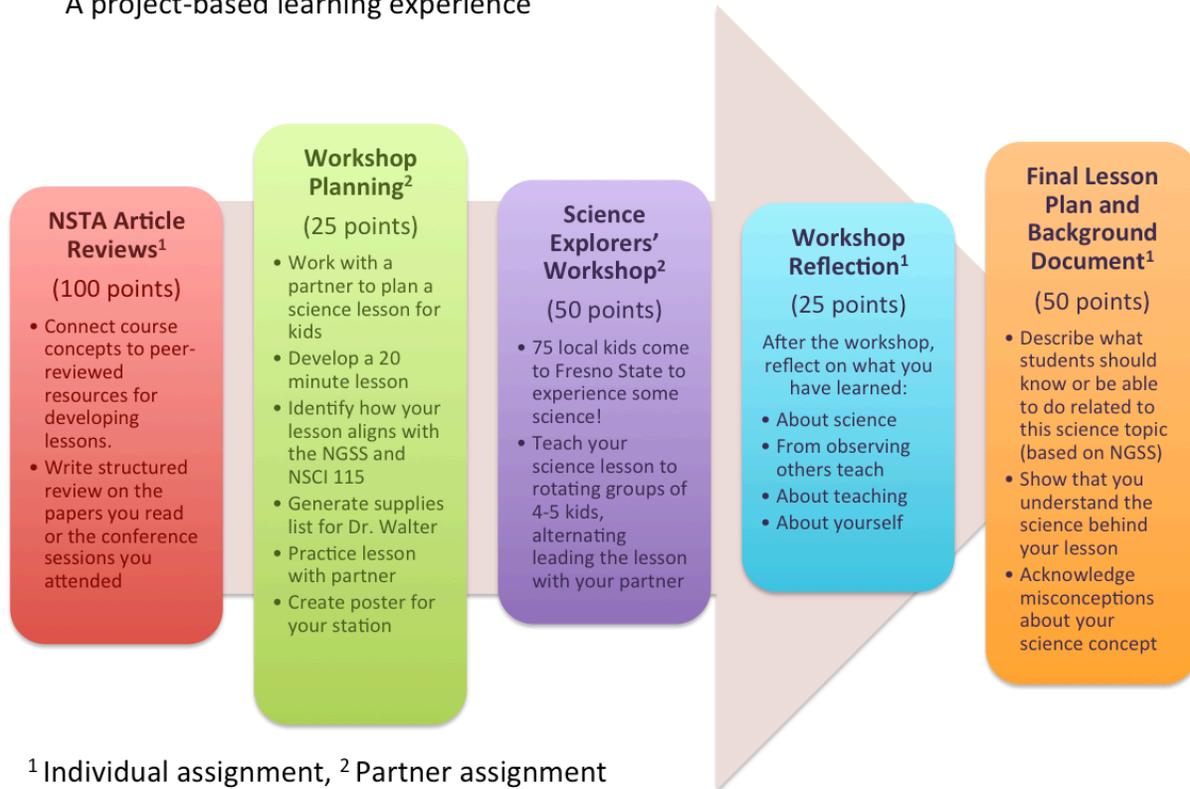
The campus subscribes to Turn-it-in and the SafeAssign plagiarism prevention service through Blackboard, and you will need to submit written assignments to Turn-it-in/SafeAssign. Your work will be used for plagiarism detection and for no other purpose. You may indicate in writing that you refuse to participate in the plagiarism detection process, in which case I can use other electronic means to verify the originality of your work. Turn-it-in and/or SafeAssign Originality Reports **will be available** for your viewing upon request.

Assignment Schedule

Assignment	Details	Points Per Assignment	Total Points	% of grade	Due Date
BlackBoard Quizzes	Best 10 of 11 quizzes	25	250	38.5%	Mondays on BB by 11:59 pm
Moon Journal	1 journal	100	100	15.4%	Tuesday, Mar 6
NSTA Article Reviews	3 reviews	100	100	15.4%	Thursday, Mar 22
"Science Explorers Workshop" Final Project	Draft 5E Lesson Plan	25	150	23%	Thurs, Apr 13
	Workshop Day	50			Thurs, May 12
	Final 5E Lesson Plan	30			Thurs, May 17
	Background Document	20			
	Reflection	30			
Class Participation	Daily	~1.67 points per day	50	7.7%	Thurs, May 17
Total			650	100%	

NSCI 115 Workshop Assignment Roadmap

A project-based learning experience



Assignment Details

BlackBoard Quizzes (250 points). Mondays we will have a BlackBoard quiz due by 11:59 p.m. We will have 11 quizzes this semester, but I will only count the best 10 of those 11 quizzes. Each quiz is worth 25 points and usually covers the past week's material.

When BlackBoard drops your lowest quiz at the end of the semester, the grade will still be visible in the grade book. However, your final grade will likely be slightly higher as it reflects the dropped quiz score.

Moon Journal (100 points). Our moon investigation is an extended activity that takes place over a number of weeks. You will observe the changing patterns in the phases and location of the moon over a period of one lunar cycle. You will observe the moon every day, keep observations, comments, and drawings in a one-subject notebook. Your moon notebook is a place for recording not only observations, but also finding patterns in the data, reasoning through your explanations, and reflecting on how the activity could work in an elementary classroom.

Workshop-Related Assignments (see also the “roadmap” above)

NSTA Journal Article Reviews (100 points). You are assigned to write a structured reflection and reviews about 3 articles from the National Science Teachers' Association journals *Science and Children* or *Science Scope*. Henry Madden Library has access to the electronic version of these journals.

Science Explorers' Workshop Final Project (150 points)

Our class is hosting a Science Explorers' Workshop for local kids. You will apply your knowledge of course concepts to teach and reflect on a structured science lesson for students in grades K-3 or 4-6. Dr. Walter will help you decide the lesson.

Draft 5E Lesson Plan (25 points). We will spend time in class preparing a 5E style lesson for you and a partner to do with the kids. You will likely decide your lesson based on articles you read from *Science and Children* or *Science Scope*.

Workshop Day (50 points). Dress professionally and arrive early. Expect to stay for the entire time. Teach your lesson to rotating groups of 4-5 students at this culminating event of the semester. Arriving on time, professional dress, and being prepared are required for the Workshop. You will be graded on preparedness and how well you supported your partner.

Reflection (25 points): Due finals day over BlackBoard.

Final 5E Lesson Plan (30 points). Include full description of your lesson, required supplies, and what students of a given age range should know and be able to do related to your topic (based on the NGSS).

Lesson Background Document (20 points). This should show that you understand the science behind your lesson and some common misconceptions that kids (or adults) can have about your topic, as well as any references you used to develop your lesson.

Participation Points (50 points). Actively participating in class is vital for your success in this class. This includes arriving on time and completing the homework for the day. Since there are 50 overall points, you earn about 1.67 points per class.

On finals day, you decide your points. To do this, you will write a small justification about how many points you should receive.

If there is a discrepancy between your score and my notes from the semester, **I reserve the right to assign you a score and provide justification for my decision.** Otherwise, I will give you the number of points you and your peers believe you should receive. If you are not in attendance on the day we decide participation points, I may score your participation based on my notes throughout the semester.

The following actions may be cause to lower your participation grade:

- Arriving late to class
- Not being prepared for class
- Not participating in class discussions
- Texting or doing homework for another class during class
- Not making an effort to respond to the instructor's questions
- Frequently asking Q that indicate you aren't paying attention, such as Q answered by the syllabus, addressed by announcements, or prior to starting class activities
- Dominating discussion in small group activities
- Dominating or not equally contributing work among your partner(s)

University Policies

Policy on Students with Disabilities

Dr. Walter is committed to creating a learning environment that meets the needs of Fresno State's diverse student body, and to creating a course that is inclusive in its design. If you anticipate or experience any barriers to learning, please discuss your concerns privately with me (Dr. Walter). In addition to speaking with me, there are many resources available to you to ensure an opportunity to learn in an inclusive environment that values mutual respect.

If there are aspects of the instruction or design of this course that results in barriers to your inclusion or to accurate assessment of achievement—such as time-limited exams, inaccessible web content, or the use of non-captioned videos—please notify Dr. Walter as soon as possible.

Upon identifying themselves to the instructor and the university, students with disabilities will receive reasonable accommodation for learning and evaluation. For more information, contact Services to Students with Disabilities in the Henry Madden Library, Room 1202 (278-2811).

Please see me privately after class or at my office to discuss class accommodations.

Office Location: 218A Science I

Office Hours: Tu 2:00 - 4:00 p.m.

OR Email for an appointment

The University Honor Code

Members of the Fresno State academic community adhere to principles of academic integrity and mutual respect while engaged in university work and related activities. You should:

- a) Understand or seek clarification about expectations for academic integrity in this course (including no cheating, plagiarism and inappropriate collaboration)
- b) Neither give nor receive unauthorized aid on examinations or other course work that is used by the instructor as the basis of grading.
- c) Take responsibility to monitor academic dishonesty in any form and to report it to the instructor or other appropriate official for action.

I may require you to sign a statement at the end of all exams and assignments that “I have done my own work and have neither given nor received unauthorized assistance on this work.”

University Policy on Cheating and Plagiarism

Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one's grade or obtaining course credit; such acts also include assisting another student to do so. Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term 'cheating' not be limited to examination situations only, but that it include any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means. Plagiarism is a specific form of cheating which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one's own work.

Penalties for cheating and plagiarism range from a zero or F on a particular assignment, an F for the course, to expulsion from the university. For more information on the University's policy regarding cheating and plagiarism, refer to the Class Schedule (Legal Notices on Cheating and Plagiarism) or the University Catalog (Policies and Regulations).

Computers

At California State University, Fresno, computers and communications links to remote resources are recognized as being integral to the education and research experience. Every student is required to have his/her own computer or have other personal access to a workstation (including a modem and a printer) with all the recommended software. The minimum and recommended standards for the workstations and software, which may vary by academic major, are updated periodically and are available from Information Technology Services or the [University Bookstore](#). In the curriculum and class assignments, students are presumed to have 24-hour access to a computer and the necessary communication links to the University's information resources.

Disruptive Classroom Behavior

The classroom is a special environment in which students and faculty come together to promote learning and growth. It is essential to this learning environment that respect for the rights of others seeking to learn, respect for the professionalism of the instructor, and the general goals of academic freedom are maintained. Differences of viewpoint or concerns should be expressed in terms that are supportive of the learning process, creating an environment in which students and faculty may learn to reason with clarity and compassion, to share of themselves without losing their identities, and to develop an understanding of the community in which they live. Student conduct that disrupts the learning process shall not be tolerated and may lead to disciplinary action and/or removal from class.

Copyright Policy

Copyright laws and fair use policies protect the rights of those who have produced the material. The copy in this course has been provided for private study, scholarship, or research. Other uses may require permission from the copyright holder. The user of this work is responsible for adhering to copyright law of the U.S. (Title 17, U.S. Code). To help you familiarize yourself

with copyright and fair use policies, the University encourages you to visit its [Copyright Web Page \(http://libguides.csufresno.edu/copyright\)](http://libguides.csufresno.edu/copyright).

Blackboard course web sites contain material protected by copyrights held by the instructor, other individuals or institutions. Such material is used for educational purposes in accord with copyright law and/or with permission given by the owners of the original material.

You may download one copy of the materials on any single computer for non-commercial, personal, or educational purposes only, provided that you (1) do not modify it, (2) use it only for the duration of this course, and (3) include both this notice and any copyright notice originally included with the material.

Beyond this use, no material from the course web site may be copied, reproduced, re-published, uploaded, posted, transmitted, or distributed in any way without the permission of the original copyright holder. The instructor assumes no responsibility for individuals who improperly use copyrighted material placed on the web site.

Family Educational Rights and Privacy Act (FERPA)

Federal law (FERPA) strictly prevents me from discussing your grades or class performance with your parents without your permission. If you DO want me to discuss your performance with them or anyone else, you must complete and sign a document waiving privacy rights. Federal law does not make an exception because your parents are paying for your education. If there is a question about your grades, please come see me yourself; you are the only one with whom I can discuss your class performance.

SupportNet

Our campus has developed SupportNet to connect students with specific campus resources promoting academic success. Students may be referred to it if you believe they need the services provided by SupportNet to succeed in your course. Dr. Walter generally refers you to SupportNet if you have a D or lower in the course or if she has another concern for your well being.

Support for Student Parents

Should you have difficulty with obtaining childcare on a given day, *you are welcome to bring your child with you to class*. I trust you to know whether you could successfully bring your child to class. From my perspective, your child is welcome to attend class and (a) participate or (b) do other activities, such as read, watch videos (with headphones), play video games, color, etc.

If you are breastfeeding and need to step out, please feel free to do so. However, since our class is only 75 minutes long, we do not have any scheduled breaks. Should you miss class time based on this need, we will work on finding a way to summarize what went on during your absence.

If there is anything else I can do to support you as a parent, please let me know.

Tentative Course Schedule

Spring 2018

The schedule and procedures for this course are *subject to change* to remain responsive to the general pace of the course, your learning needs, and for extenuating circumstances. *Note.* BB = Blackboard.

Date	Lesson	Topic	Due By Class Time (unless noted)
Tue. Jan 16	1	Course Introduction + Intro to the NGSS	<ul style="list-style-type: none"> Create a Selfie Slide for Google Slides Read and sign course syllabus
Thurs. Jan. 18	2	The Next Generation Science Standards (NGSS)	<ul style="list-style-type: none"> Bring markers and device to class
Tue. Jan 23	3	Myths about Science	<ul style="list-style-type: none"> Quiz #1 due Monday 8/28 by 11:59 pm Read: <i>Keys to Teaching Nature of Science</i> (Intro + Your "Core Idea" only)
Thurs. Jan 25	4	How Science Really Works	
Tues. Jan 30	5	Science Myths Wrap Up + Intro to Diversity in STEM	<ul style="list-style-type: none"> Quiz #2 due Monday 9/4 by 11:59 p.m. Implicit Bias Test - Gender and Science Video: "<i>The Future of STEM Depends on Diversity</i>" (Link on BB)
Wed. Jan 31	--	Moon Journal	<ul style="list-style-type: none"> Start Observations!
Thurs. Feb 1	6	Diversity in STEM	<ul style="list-style-type: none"> Bring in a kids book that tells a story about a diverse scientist (such as a woman, person of color, or person with disability)
Tues. Feb 6	7	Modeling the Water Cycle	<ul style="list-style-type: none"> Quiz #3 due Monday 9/11 by 11:59 p.m. Read: <i>Using Models Scientifically</i> (on BB)
Thurs. Feb 8	8	Modeling the Water Cycle + Water Cycle Misconceptions	<ul style="list-style-type: none"> Watch series of BB videos Answer questions based on the videos Come to class with your answers and be ready to share
Tues. Feb 13	9	Intro to Photosynthesis	<ul style="list-style-type: none"> Quiz #4 due Monday 9/18 by 11:59 p.m. Bring Moon Journals for feedback. Continue to make observations on separate sheets of paper.
Thurs. Feb 15	10	Lego Photosynthesis	<ul style="list-style-type: none"> Read in <i>Uncovering Student Ideas: Is It Food for Plants?</i> (Ch. 15)
Tues. Feb 20	11	Matter and Energy In Ecosystems	<ul style="list-style-type: none"> Quiz #5 due Monday by 11:59 p.m.
Thurs. Feb 22	12	Ecosystems and Food Webs	

Date	Lesson	Topic	Due By Class Time (unless noted)
Tues. Feb 27	13	Exploring Moon Patterns	<ul style="list-style-type: none"> Quiz #6 due Monday by 11:59 p.m.
Thurs. Mar 1	14	Class Moon Data and Eclipses	<ul style="list-style-type: none"> Last night of moon observations!
Tues. Mar 6	15	Intro to the Solar System	<ul style="list-style-type: none"> No Quiz Moon Journals Due
Thurs. Mar 8	16	Solar System Exploration, Pluto, and other Dwarf Planets	<ul style="list-style-type: none"> Watch: <i>Magic School Bus "Lost in Space!"</i>
Tues. Mar 13	17	Virtual Class: Earth the Operators Manual (Dr. Walter Out of Town)	<ul style="list-style-type: none"> Quiz #7 due Monday by 11:59 p.m. Watch Earth the Operator's Manual before class on Thursday
Thurs. Mar 15	18	Natural Resources and Greenhouse Effect	<ul style="list-style-type: none"> BB questions from virtual class due before class
Tues. Mar 20	19	Global Climate Change Evidence and Consensus	<ul style="list-style-type: none"> Quiz #8 due Monday by 11:59 p.m.
Thurs. Mar 22	20	Climate Change Wrap Up	<ul style="list-style-type: none"> NSTA article reviews due Submit workshop teaching ideas to Dr. Walter
Tues. Mar 27	--	SPRING BREAK	<ul style="list-style-type: none"> NO CLASS
Thurs. Mar 29	--	SPRING BREAK	<ul style="list-style-type: none"> NO CLASS
Tues. Apr 3	21	Theory and Law Review / Intro to Evolution	<ul style="list-style-type: none"> Read "Is it a Theory?" on BB
Thurs. Apr 5	22	Variation in Populations and Differential Survival: Part 1	<ul style="list-style-type: none"> <i>Rock Pocket Mouse</i> video (on BB) Complete pages 1-4 of handout
Tues. Apr 10	23	Variation in Populations and Differential Survival: Part 2	<ul style="list-style-type: none"> Quiz #9 due by 11:59 p.m. Complete <i>Rock Pocket Mouse</i> graph
Thurs. Apr 13	--	Science Explorers' Workshop Planning Period (Dr. Walter Out of Town)	<ul style="list-style-type: none"> Come to class! Plan what will happen in your lesson Build materials list Submit your lesson plan draft on BB
Tues. Apr 17	24	Virtual Class: Speciation Basics (Dr. Walter Out of Town)	<ul style="list-style-type: none"> No Quiz
Thurs. Apr 19	25	Speciation: Examples and Evidence	<ul style="list-style-type: none"> BB questions from virtual class due before class
Tues. Apr 24	26	Evidence for Common Ancestry	<ul style="list-style-type: none"> Quiz #10 due by 11:59 p.m.
Thurs. Apr 26	27	Evolution Misconceptions	<ul style="list-style-type: none"> Read <i>FAQ about Evolution</i> (on BB)
Tues. Apr 30	28	Fossil Explorations	<ul style="list-style-type: none"> Quiz #11 due by 11:59 p.m.

Date	Lesson	Topic	Due By Class Time (unless noted)
Thurs. May 5	28	Science Explorers' Workshop Practice Day	<ul style="list-style-type: none"> Bring all relevant supplies
Tues. May 10	29	Science Explorers' Workshop Practice Day	<ul style="list-style-type: none"> Bring all relevant supplies Bring poster for your station
Thurs. May 12	--	Science Explorers' Workshop – 3:30 – 6:00 pm* Room 140 Kremen Education Building	<ul style="list-style-type: none"> Dress Professionally Arrive Early

* = I expect you to plan ahead to avoid non-University conflicts, such as work.

Finals	Day	Date
Finals Period Wrap Up, Self Evaluations, Final Assignment Help Session Attendance Required	Thursday	May 19 11 am - 1 pm

NGSS Alignment

The Next Generation Science Standards (NGSS) are the United States' national education standards for K-12 science. The State of California has adopted these standards. The standards are a combination of (a) science concepts (Disciplinary Core Ideas, DCIs), (b) science skills (Science and Engineering Practices; SEPs), and (c) common themes in science (Cross Cutting Concepts; CCs). Taken together, the DCIs, SEPs, and CCs represent a different way of teaching science, guidelines for teachers to help students build knowledge of DCIs through engagement with SEPs and CCs.

Disciplinary Core Ideas (DCIs) are the central science concepts highlighted in the NGSS. The DCIs are grouped in four categories: Physical Science (PS); Life Science (LS); the Earth and Space Sciences (ESS); and Engineering, Technology and applications of Science (ETS). We talk about both Earth and Space Science and Life Science topics in NSCI 115, with a focus on ideas that are commonly taught in elementary school.

Disciplinary Core Idea	Component Ideas Covered in NSCI 115
ESS1. Earth's Place in the Universe	ESS1.A - The universe and its stars ESS1.B - The Earth and the solar system ESS1.C - The history of planet Earth
ESS2. Earth's Systems	ESS2.A - Earth Materials and Systems ESS2.C - The roles of water in Earth's surface processes ESS2.D - Weather and climate ESS2.E - Biogeology

NGSS Alignment (continued)

Disciplinary Core Idea	Component Ideas Covered in NSCI 115
ESS3. Earth and Human Activity	ESS3.A – Natural resources ESS3.C – Human impacts on Earth systems ESS3.D – Global climate change
LS1. From Molecules to Organisms: Structures and Processes	LS1.A – Structure and function LS1.B – Growth and development of organisms LS1.C – Organization for matter and energy flow in organisms
LS2. Ecosystems: Interactions, Energy, and Dynamics	LS2.A – Interdependent Relationships in Ecosystems LS2.B – Cycles of Matter and Energy Transfer in Ecosystems LS2.C – Ecosystem dynamics, functioning, and resilience
LS3. Heredity: Inheritance and Variation of Traits	LS3.A – Inheritance of Traits LS3.B – Variation of Traits
LS4. Biological Evolution: Unity and Diversity	LS4.A – Evidence of Common Ancestry LS4.B – Natural Selection LS4.C – Adaptation LS4.D – Biodiversity and Humans

NGSS Alignment by Topic and Assignment

Topic / Assignment	Disciplinary Core Idea(s)	Science and Engineering Practices	Crosscutting Concepts
Moon Observation Journals	ESS1.B - The Earth and the solar system	<ul style="list-style-type: none"> • Asking questions • Developing and using models • Planning and carrying out investigations • Analyzing and interpreting data • Constructing explanations • Engaging in argument from evidence Obtaining, evaluating, and communicating information	<ul style="list-style-type: none"> • Patterns • Cause and effect • Systems and system models • Structure and function • Stability and change
Photosynthesis	LS1.A – Structure and function LS1.B – Growth and development of organisms LS1.C – Organization for matter and energy flow in organisms	<ul style="list-style-type: none"> • Constructing explanations • Analyzing and interpreting data 	<ul style="list-style-type: none"> • Energy and matter • Cause and effect

NGSS Alignment by Topic and Assignment (continued)

Ecosystems	<p>LS2.A - Interdependent Relationships in Ecosystems</p> <p>LS2.B – Cycles of Matter and Energy Transfer in Ecosystems</p> <p>LS2.C – Ecosystem dynamics, functioning, and resilience</p>	<ul style="list-style-type: none"> • Developing and using models • Using mathematics and computational thinking 	<ul style="list-style-type: none"> • Stability and change • Energy and matter • Systems and system models • Scale, Proportion, and Quantity
Global Climate Change	<p>ESS2.D - Weather and climate</p> <p>ESS3.A – Natural resources</p> <p>ESS3.C – Human impacts on Earth systems</p> <p>ESS3.D – Global climate change</p>	<ul style="list-style-type: none"> • Using mathematics and computational thinking • Engaging in argument from evidence • Constructing explanations and designing solutions 	<ul style="list-style-type: none"> • Patterns • Cause and effect • Stability and change
Water Cycle	<p>ESS2.A - Earth Materials and Systems</p> <p>ESS2.C - The roles of water in Earth’s surface processes</p> <p>ESS2.E - Biogeology</p>	<ul style="list-style-type: none"> • Developing and using models 	<ul style="list-style-type: none"> • Energy and matter • Systems and system models • Cause and effect
The Solar System and Universe	<p>ESS1.A - The universe and its stars</p> <p>ESS1.B - The Earth and the solar system</p>	<ul style="list-style-type: none"> • Developing and using models • Using mathematics and computational thinking 	<ul style="list-style-type: none"> • Scale, proportion, and quantity • Cause and effect • Systems and system models
Evolution	<p>LS3.A – Inheritance of Traits</p> <p>LS3.B – Variation of Traits</p> <p>LS4.A – Evidence of Common Ancestry</p> <p>LS4.B – Natural Selection</p> <p>LS4.C – Adaptation</p>	<ul style="list-style-type: none"> • Asking questions • Developing and using models • Using mathematics and computational thinking • Engaging in argument from evidence • Constructing explanations • Analyzing and interpreting data 	<ul style="list-style-type: none"> • Stability and change • Cause and effect
Fossils and History of Planet Earth	<p>ESS1.C - The history of Planet Earth</p>	<ul style="list-style-type: none"> • Developing and using models • Analyzing and interpreting data • Planning and carrying out investigations 	<ul style="list-style-type: none"> • Scale, proportion, and quantity • Stability and change

Syllabus Signature Page

California State University - Fresno

Instructor: Dr. Emily Walter
Course: NSCI 115 Section 04
Semester: Spring 2018

I _____, agree that I received a copy of the course syllabus for the class mentioned above. I have read the entire syllabus. I understand the course requirements and that I am expected to attend all class meetings and events.

I understand that if I miss more than two class sessions that my grade will be reduced by 5%.
I understand that if I miss more than four class sessions that my grade will be reduced by 10%.
I understand that if I miss more than six class sessions that my grade will be reduced by 15%.

Print Full Name

Signature

Date