Center for Professional Development
1717 S. Chestnut Ave.
Fresno, CA 93702-4709
(800) 372-5505
http://ce.fresno.edu

Independent Study Course Syllabus

Course Number: SCI 910
Course Title: Classroom Science, Weather-Water (Methods and Activities

☐ Online X Distance Learning

Instructor: Marvin Harms **Phone number:** 559-222-7384 **Email:** marvinwharms@gmail.com **Website:** www.hands-on-experiments.com	**Units: 3** **Grade Level: K-12**

Course Description
This methods course is designed to explore how the study of Weather-Water will enrich the science programs. The participants are required to complete and evaluate a planned series of experiments and/or experiences with their students. This course is in alignment with the California State and National Science Standards. Common Core State Standards for Literacy in History/Social Studies, Science, and Technical Subjects are included in lesson plans and assignments. All of these lessons may be used with children in the classroom, home, and/or neighborhood.

Course Dates
Self-paced; students may enroll at any time and take up to one year to complete assignments.

You have up to one year from the date of registration, and no less than three weeks (one week per credit), to complete the course.

Course Requirements:
1. The teacher is to do 15 experiments and/or experiences with his/her class. Fill out a evaluation sheet for each assignment that you do. These are not required for experiences.
2. The teacher may write experiments of her/his own. .
3. The teacher is to list the State and/or National Science Standards and Common Core

Literacy Standards in Science that were met teaching each experiment.
4. Write a one page report describing how this class enhanced your curriculum.

Content Standards
The outcomes and course materials are aligned to and are supported by the six Science Teaching Standards, which are contained in the National Science Education Standards and can be located at http://www.nap.edu/openbook.php?record_id=4962&page=1

Content standards for experiments and experiences in this course are aligned to the National Science Education Standards that can be applied to each of the grade level content areas for : Unifying concepts and processes in science. Science as inquiry. Physical science. Life science. Earth and space science. Science and technology. Science in personal and social perspectives. History and nature of science.
Students will apply grade level standards applicable to their state or local district standards.

Primary Learning Outcomes.

1. Teachers who take this course will demonstrate how to make science learning relevant to daily life. National Science Teaching Standards (A – F)
2. Teachers will be able to effectively present the study of Weather-Water in a variety of situations. (B)
3. Teachers will be able to articulate how the State and/or National Science Standards were met using this material. (A, D, F)
4. Teachers will be able to identify and assess a processes on how to teach this material effectively. (C, E)
5. Teachers will be able to describe how science principles affect the local environment. (F)
6. Teachers will be able to explain how scientific breakthroughs link large amounts of knowledge, build upon the contributions of many scientists, and cross different lines of study. (F)

Schedule of Topics and Assignments.
Take a look at the curriculum required by your district. Perform the experiments and/or experiences included in this course and outlined in the "Grading Rubric" that are appropriate to meet the needs of your district. By doing the experiments and/or experiences, you will be able to become more proficient in your ability to communicate with your students, parents, fellow teachers and administration. Experiments and/or experiences are designed with the busy life of a teacher in mind. The experiments are designed to give you a basic format from which to develop the concepts.

Grading and Rubrics
Check Grading Rubric for points given.

Academic Policies

Reducing Number of Units
Students are not permitted to reduce the number of units in an independent study or online course for which they are enrolled.

Receiving Credit
Students must submit satisfactorily completed coursework to the instructor in order to receive credit. The postmark on coursework mailed or date of final email/upload to the instructor determines the completion date. Upon completion of the coursework, it is then the student's responsibility to submit the online grade form to the instructor:

Grades are posted within two business days of notification from instructor. A pdf Final Grade Report is available to print by logging in to the CPD website and clicking on Final Grade Report.

Students may not receive credit for duplicate courses. Grades will not be posted until all tuition and fees have been paid to the university.

Grading System
Independent Study Courses are graded as either "A," "B" or "Credit," "No Credit." "Credit" is equivalent to a letter grade of "B." A grade of "No Credit" will be issued if coursework does not meet the course requirements. Students must choose a letter grade or grade of Credit when completing the online grade form. The default grade is "Credit."

A grade of "No Credit" will automatically be issued if coursework is not completed within one year from date of registration, and an extension has not been requested.

Final Course Grade and Transcripts
When all work for the course has been completed, students will need to logon to the Center for Professional Development website (http://ce.fresno.edu/cpd) to "Submit Grade Form". Once the instructor fills out the grade form online, students may log back in to request their Grade Report as well as order transcripts online. Please allow at least two weeks for the final grade to be posted. For more information see the Independent Studies Policies and Procedures that were sent to you when you received your course materials, or in your online course. They are available, also at http://ce.fresno.edu/cpd - under General Information > CPD Policies.

Plagiarism and Academic Honesty
All people participating in the educational process at Fresno Pacific University are expected to pursue honesty and integrity in all aspects of their academic work. Academic dishonesty, including plagiarism, will be handled according to the procedures set forth in the Fresno Pacific University Catalogue. URL http://www.fresno.edu.

CONTINUING EDUCATION PROGRAM STUDENT LEARNING OUTCOMES:

CE 1. Demonstrate proficient written communication by articulating a clear focus, synthesizing arguments, and utilizing standard formats in order to inform and persuade others, and present information applicable to targeted use.
CE 2. Demonstrate comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.
CE 3. Reflect on their personal and professional growth and provide evidence of how such reflection is utilized to manage personal and professional improvement.
CE 4. Apply critical thinking competencies by generating probing questions, recognizing underlying assumptions, interpreting and evaluating relevant information, and applying their understandings to the professional setting.
CE 5. Reflect on values that inspire high standards of professional and ethical behavior as they pursue excellence in applying new learning to their chosen field.
CE 6. Identify information needed in order to fully understand a topic or task, organize that information, identify the best sources of information for a given enquiry, locate and critically evaluate sources, and accurately and effectively share that information.

FRESNO PACIFIC UNIVERSITY STUDENT LEARNING OUTCOMES

Student Learning Outcomes Oral Communication: Students will *exhibit* clear, engaging, and confident oral communication – in both individual and group settings – and will critically *evaluate* content and delivery components.
Written Communication: Students will *demonstrate* proficient written communication by *articulating* a clear focus, *synthesizing* arguments, and utilizing standard formats in order to *inform* and *persuade* others.
Content Knowledge: Students will *demonstrate* comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.
Reflection: Students will *reflect* on their personal and professional growth and *provide evidence* of how such reflection is utilized to manage personal and vocational improvement.
Critical Thinking: Students will *apply* critical thinking competencies by *generating* probing questions, *recognizing* underlying assumptions, *interpreting* and *evaluating* relevant information, and *applying* their understandings to new situations.
Moral Reasoning: Students will *identify* and *apply* moral reasoning and ethical decision-making skills, and *articulate* the norms and principles underlying a Christian world-view.
Service: Students will *demonstrate* service and reconciliation as a way of leadership.
Cultural and Global Perspective: Students will *identify* personal, cultural, and global perspectives and will employ these perspectives to *evaluate* complex systems.
Quantitative Reasoning: Students will accurately *compute* calculations and symbolic operations and *explain* their use in a field of study.
Information Literacy: Students will *identify* information needed in order to fully understand a topic or task, *explain* how that information is organized, *identify* the best sources of information

for a given enquiry, *locate* and critically *evaluate* sources, and accurately and effectively *share* that information.

Re-Enrollment
Students may re-enroll in Independent Study Courses if they have previously received a grade of "No Credit." Current tuition/fees will apply.

Grade Appeals
Grade appeals must be made within one year from the date the grade report was issued. Appeals must first be presented to the instructor. If necessary, a second appeal may be made to the CPD Director of Independent Studies, and finally to the Continuing Education Executive Director.

Important Note: Health/Physical Education (HPE) and Computer Technology (TEC) courses do not fulfill the computer or health component requirements for the California Clear Credential.

National Science Education Standards
http://www.nap.edu/

Teaching Standard A
Teachers of science plan an inquiry-based science program for their students. In doing this teachers Develop a framework of yearlong and short-term goals for students. Select science content and adapt and design curricula to meet the interests, knowledge, understanding, abilities, and experiences of students. Select teaching and assessment strategies that support the development of student understanding and nurture a community of science learners. Work together as colleagues within and across disciplines and grade levels.

Teaching Standard B
Teachers of science guide and facilitate learning. In doing this, teachers Focus and support inquiries while interacting with students. Orchestrate discourse among students about scientific ideas. Challenge students to accept and share responsibility for their own learning. Recognize and respond to student diversity and encourage all students to participate fully in science learning. Encourage and model the skills of scientific inquiry, as well as the curiosity, openness to new ideas and data, and skepticism that characterize science.

Teaching Standard C
Teachers of science engage in ongoing assessment of their teaching and of student learning. In doing this, teachers Use multiple methods and systematically gather data about student understanding and ability. Analyze assessment data to guide teaching. Guide students in self-assessment. Use student data, observations of teaching, and interactions with colleagues to reflect on and improve teaching practice. Use student data, observations of teaching, and interactions with colleagues to report student achievement and opportunities to learn to students, teachers, parents, policy makers, and the general public.

Teaching Standard D
Teachers of science design and manage learning environments that provide students with the time, space, and resources needed for learning science. In doing this, teachers Structure the time available so that students are able to engage in extended investigations. Create a setting for student work that is flexible and supportive of science inquiry. Ensure a safe working environment.
Make the available science tools, materials, media, and technological resources accessible to students. Identify and use resources outside the school. Engage students in designing the learning environment.

Teaching Standard E
Teachers of science develop communities of science learners that reflect the intellectual rigor of scientific inquiry and the attitudes and social values conducive to science learning. In doing this, teachers Display and demand respect for the diverse ideas, skills, and experiences of all students. Enable students to have a significant voice in decisions about the content and context of their work and require students to take responsibility for the learning of all members of the community. Nurture collaboration among students. Structure and facilitate ongoing formal and informal discussion based on a shared understanding of rules of scientific discourse. Model and emphasize the skills, attitudes, and values of scientific inquiry.

Teaching Standard F
Teachers of science actively participate in the ongoing planning and development of the school science program. In doing this, teachers Plan and develop the school science program. Participate in decisions concerning the allocation of time and other resources to the science program. Participate fully in planning and implementing professional growth and development strategies for themselves and their colleagues.