CALIFORNIA STATE UNIVERSITY, STANISLAUS

801 West Monte Vista Avenue. Tur1ock, California 95382-0299

Spring, 2005
Course Outline

EDMC 4130: Elementary Curriculum and Instruction – Science and Health Methods

Class Meets: **MONDAY and THURSDAY:** 4:00 **pm-10:00 p.m. Rm: A 1066** Credits: 3 Units.
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INTRODUCTION

COLLEGE OF EDUCATION

Advocates for children and their communities

MISSION AND VISION

The mission of the College of Education is to undertake the professional preparation of teachers and school service professionals as identified by state legislative and administrative law. The faculty of the College is committed to meeting the rightful expectations of the public regarding the education of effective and dedicated professionals and creating a student-centered learning paradigm. The College of Education is also committed to broadening and deepening the pool of educators to reflect the diversity of its school populations.

The professional preparation programs in the College of Education have a shared vision: To prepare teachers and service personnel who impact positively and optimally on the achievement of all K-12 students in academic and non-academic areas. The attributes that under gird our school-based preparation programs are high standards, academic rigor, and intellectual integrity. CSU Stanislaus, College of Education has an enduring commitment to the preparation of professionals who are:

- **Competent in their chosen areas,**
- **Able to integrate subject-matter content with pedagogy appropriate to their field of study,**
- **Able to use technology to enhance teaching and learning**
- **Culturally responsive and responsible, knowledgeable, and appreciative of the diversity among learners,**
- **Committed to self-assessment and reflection and,**
- **Partners, educational advocates, and leaders at the school level and in the wider community.**

(for the full text of the School of Education Mission, please see http://www.csustan.edu/AcadProg/)

REQUIRED TEXTBOOK:

1.Science in the Elementary and Middle School by Dennis W. Sunal and Cynthia Szymanski Sunal. (

(Purchase at Kiva):

2. How to Survive Teaching Health by Tillman. (Kiva)

3. Collaboration, Leadership and Change. by Iris Haapanen, (2004) (Kiva)

4. 101 Science Poems and Songs for Young Learners by Goldish Meish. Scholastic, 1996.(Kiva)

5. 200 Gooey, Slippery, Slimy, Weird and Fun Experiments by John Clevae. (Kiva)

Science Content Standards for California Public Schools K Through grade 12 (www. educ.cde.ca.gov)

RECOMMENDED TEXTBOOKS:

Science Is… by Susan Bosak. Scholastic, 1991.

Earthy Things by Margaret Edison. Idea Factory, 1990

Description of assignments

Course Description

The purpose of this course is to teach the basic content required for effective instruction of elementary school science and health. The other goal is emphasize on the learning needs of a linguistically and culturally diverse and special needs student populations (FS(1)) and (FS(2))-SB2042-. This course stresses the infusion of Science Content Standards, ELD Standard, Bloom's Taxonomies (revised), integration of subject matter, technology, field work, experiments, and theory and practice of Science. This is a Method (Science) course. Therefore, future teachers will practice in the classroom (C.122) Science and Health lesson plans and Science and Health Unit Instruction. A Science and Health lesson plan will be applied in a K-8th classroom during the semester. This course prepares the future teacher how to apply a variety of teaching approaches for *all children* including *special needs and English Language Learner* students in the Science and Health classroom.

Course Goals and Objectives

By the end of the course the learners will

1. become comfortable and confident with constructivism and inquiry-based science as it is recommended by the *National Science Education Standards* and the *Science Content Standards for California Public Schools* and other resources from the science education reform movement.
2. experience a variety of constructivism and inquiry-based science activities which range from inexpensive and everyday materials to commercial programs.
3. understand how children learn science.
4. be familiar with Bloom's Taxonomies (revised) and its applications as it relate to science

5. be familiar with Science Content Standards and ELD Standard for California Public Schools Kindergarten through grade twelve, create a science unit based on the development of concepts and generalizations under a defined science theme, utilizing diversity emphasis

6. become aware of interdisciplinary connections between science, language arts, health, social studies, art, music, physical education, mathematics, technology, and society.

7. gain pedagogical knowledge to use in teaching experiences.

8. be familiar with the internet and its applications as technology relates to Science.

9. practice using English-as-a-second-language strategies, English Language Development, Specially Designed Academic Instruction in English (SDAIE), and Sheltered English Instruction (SEI): Language Experience (LE), Natural Approach (NA), Total Physical Response(TPR), Direct Instruction (DI) teaching approaches in the science classroom.

10. be familiar with the strategies for cooperative learning

11. be familiar with a variety of assessment techniques and devices and their instruction.

12. utilize questioning strategies and higher order thinking skills in science

13. know the strategies and approaches for developing values, attitudes and appreciation in science.

Note: *The Sunal chapters will be presented through the assigned teaching strategies (or relevant strategy) that are on parenthesis. These strategies are pointed out by Sunal. Just pick one idea from the chapter and illustrate it by modeling the teaching strategy. As for the teaching strategies, refer to the Collaboration book.* ***BCLAD students: Lessons, Reflections, and Research*** *will be written in Spanish/Hmong. Presentations will be in Spanish/Hmong. Some items on this syllabus are subject to change.*

Schedule of Activities and Research Projects

4-4-05

Conversations

Getting Acquainted

Speaker

Syllabus

Who am I as a scientist? (Power Point presentation, visuals, and so on…) Video

Unit

Science book by Sunal: **Chapter 1 (Jigsaw** teaching Strategy) /Haapanen bk.

101 Science Poems…

200 Gooey**…**

Health book

Science Content Standards

ELD Standard…

Note: Please each group needs to bring a flower next class. A sample unit will be written down integrating Science across the curriculum, Science/ELD Standards, Bloom's Taxonomy, culture, technology, assessment, and other subject areas.

Earthquake, Volcano, & Solar System Presentation

Announcements

4-7-04

Conversations

Who am I as a scientist?- (Power Point presentation, visuals, and so on…)

101 Science Poems- The Earth and Beyond

101 Science Poems-Plants and Seed

Unit - Draft (continuation): Unit Title, Topic, Grade, Lesson Planning interwoven with ELD Standard, Science Standard, Bloom's Taxonomies (revised) and *integration of science with* language arts, health, social studies, art, music, physical education, mathematics, technology, Family/Parents and society.

Earthquake, Volcano, & Solar System Presentation

Mini Unit Sample-Flower: The African Violet, International roses etc…

Sunal-Chapter 2, 3, 4 **(role play) / Health book/Haapanen bk.**

5 Step Lesson Plan, SB2042: Science Content Standard, ELD Ca Standard, Bloom's Taxonomies (revised)

Announcements

4-11-05

Conversations

Sunal-Chapter 5, 6, 7 (Creative expression) / Health book/Haapanen bk.

101 Science Poems – Seasons and Weather

101 Science Poems – Animals

Science Unit -Polishing stage

Earthquake, Volcano, & Solar System -Group Presentation

Who am I as a scientist? (Power Point presentation, visuals, and so on…)

Diverse Scientists (different cultures to be included in the unit) 5 scientist women and 5 scientist men

200…fun experiments: **Biology-**Group Presentation

Please bring contaminated water for analysis on the next class meeting.

Reflection #1

Announcements

4-14-05

Conversations

Sunal-Chapter 8 and 9 (technology) **/ Health book/Haapanen bk.**

Earthquake, Volcano, & Solar System

200…fun experiments: **Earth Science-** Group Presentation

Who am I as a scientist?

Simulation: We'll travel to Burma, Thailand, and Vietnam, and we'll analyze the water. How can we purify non- drinking water? How can we relate this issue in our culture of teaching and learning Science?

Announcements

4-**18-04**

Conversations

Sunal-Chapter 10 and 11 (SDAIE) / Health book/Haapanen bk.
200…fun experiments: **Astronomy-** Group Presentation

Science Unit Presentation: Gr. 1, 2, & 3

Earthquake, Volcano, & Solar System - Group Presentation

Who am I as a scientist? (Power Point presentation, visuals, and so on…)

Reflection #2

200…fun experiments: **Chemistry-** Group Presentation

All Units Instruction Portfolios should be finished.lesson taught at a school site.

Announcements

4-21-05 CHALLENGER LEARNING CENTER AND TECHNOLOGY FIELD TRIP: Reflection about the Challenger Learning Center Field trip 1-2pages) Date???

4-21-05 Mid Term: Take Home

4-25-05

Conversations

Sunal-Chapter 12 & 13 (Game) / Health book
200…fun experiments: **Physics-** Group Presentation

Science Unit Presentation: **Group # 3, 4**

Earthquake, Volcano, & Solar System

Who am I as a scientist? (Power Point presentation, visuals, and so on…)

The lesson taught at a school site should be done at this time and please turn in the reflection of the lesson taught.

Due: Mid-Term

Due: All Units Instruction, portfolios, make-up, and sharing lesson taught at a school site.

4-28-05

Sunal-Chapter 15 (Puppet Show) / Health book
Unit Presentation-Group # 5, 6 ?

sharing lesson taught at a school site.

Due: Final Exam, Portfolios (Unit), etc. You need to be present for your final grade.

Description of research projects and assignments

Please turn in 2-3 page work of the following research work and presentations:

Who am I as a scientist? (2+pages.) This is a 10-15 minutes presentation. Who am I? What traditions have been passed from generation to generation regarding Science and Health? How can I make a better future, in the present for all my students including the Special Needs and EL? How can my students learn about themselves and Science in the local community and the world: i.e. internet, news…etc? What is my plan as a future Science and Health teacher? Please bring realia.

Sunal-Chapter Presentation/Outline: Utilize hands-on and teaching strategies. Please emphasize Diversity, technology, and parent involvement in every chapter as well as every research project.

Health book: Choose an activity from the health book and correlate it to the Sunal's chapter. No paper

Science Poems: This work will be included in the unit. (group work) -Copy

Gooey: Group work experiment. (included in the unit) Copy-

Earthquake: (1 paragraph-internet) This inquiry/participatory research project will cost no more than $5.00. Use materials that are around your house. Write a paragraph about what, where, when, why, and how the earthquake happened? Choose one country of the seven continents. Use the earthquake metaphor to integrate other subject matter, i.e.: Spelling, reading, writing, music, art, p.e., poetry, health etc. Use SDAIE, TPR, DI Role Play, and Simulations to teach about Volcano. Refer to Haapanen's book. Use the Internet.

Volcano: (1 paragraph-internet) This inquiry/participatory research project will cost no more than $5.00. Write a paragraph about what, where, when, why, and how the Volcano happened? Choose one country of the seven continents. Use the volcano metaphor to integrate other subject matter, ex: Spelling, reading, writing, music, art, etc. Use SDAIE, TPR, DI Role Play, and Simulations to teach about Volcano. Use the Internet.

Solar System: (1 paragraph-internet) This inquiry/participatory research project will cost no more than $5.00. Write a paragraph about what, where, when, why, and how the Solar System happened? Choose one planet or planet characteristic, of the nine planets. Use the Solar system metaphor to integrate other subject matter, ex: Spelling, reading, writing, music, art, etc. Use SDAIE, TPR, DI Role Play, and Simulations to teach about Solar System. Use the Internet.

Science Unit (Binder)(Research, group work, presentation): Refer to the rubric. Resources: everything in the rubric will go in the Unit binder.

Reflection: What, how, and why did you learn/grow? How can I implement the learned knowledge in your future classroom? What would you change? or keep? or adapt? A reflection is not an opinion. Why?1 or more pages.

Diverse Scientists: Research in the internet: 5 female scientists and 5 male scientists. 10 in all per group All scientist will be of diverse ethnic background.

Challenger Learning Center and Technology paper 1-2ps.: Write a paper about What did you learn and how the learned material will be implemented in your classroom?

Assessment (Field Work, Conversation (sharing), and Research) One to two pages. Included in the Unit

Experiments: Show and tell. Unit.

Attendance & Participation: Refer to grading criteria

Bloom's Taxonomy (revised): Collaborative Work, included in lessons.

Midterm (Diversity article, take home): 2-3 page essay: Integrate other knowledge and resources: Ex: global, internet, multicultural, multilingual etc…

Final Exam: Refer to the "final" description written above.

Note: A repeated research project is not allowed unless you utilize a different teaching approach or ideas. During 'conversations' please share with others the topics that you'll be presenting in order to keep the work from replicating. Please sign-up for presentations.

Rubric/Criteria for the Evaluation of Science and Health Unit Project

This is the rubric that will be used to evaluate your unit. It reflects the content and components discussed above.

_____All units shall be typed, presentable and well organized (including lesson planning).

_____of publishable quality/ focus on a grade level.

_____Contain a cover page and include preface page(s) that describe the intent and focus of the unit (background or age level of students) and discuss methodology, philosophy or approach utilized.

_____contain an appendix of consulted sources and any other materials.

_____include a health project (health book).

_____reflect emphasis on diversity

_____include Science Poem (2+)

_____contain a minimum of five lessons with Bloom's Taxonomies, Science Content Standards and ELD Standard for California Public Schools Kindergarten through grade twelve.

_____be organized around a theme or concept

_____contain 5 men scientists and 5 women scientists of different culture

_____represent a wealth of information (comprehensive)

_____include a component related to computer networking and Science and Health.

_____include experiments (2+)

_____include a research inquiry component or emphasis: How inquiry will be implemented in the Unit?

_____reflect a variety of assessment techniques: What and how assessment will be used in this Unit?

_____Constructivist Approach: How are you going to use the constructivist approach in the Unit?

_____Include the Bloom's Taxonomies, Science Content Standards and ELD Standard for California Public Schools Kindergarten through grade twelve.

_____Who am I as a scientist?

Presentation of unit to class

This collaborative project will be prepared at home and classroom. We will schedule time during the sessions of our class for everybody to present their unit to their class members. These presentations will provide your classmates with the opportunity to get to know about your unit.

A thematic unit entails a succession of lessons that:

1. have an everyday interrelated rational
2. connect to Science and ELD Standards
3. have a theme that shows Bloom's Taxonomies.
4. integrates diversity, math, health, art, language arts, social studies, music, PE, etc…
5. projects, activities, assessment, technology, resources, family involvement, etc., (please refer to the rubric).
6. integrate a variety of teaching strategies and SB 2042 in all Science and Health lessons.

Teaching unit

The science unit is designed for one week. One lesson (of the 5 lessons) is to be taught in a K-6 classroom. It is advised that possible topics be discussed with the classroom teacher before the lesson is taught to the students. All 5 lessons will have Science and the ELD Content Standards for California Public Schools kindergarten through grade twelve as well as the Bloom's Taxonomies (revised) Your unit should not focus around a purchased unit. The unit is a creative project that incorporates the knowledge of effective teaching strategies, demonstrates your understanding of Science content, uses of a variety of resources and materials, in order to meet the linguistic, cultural, academic, social, and emotional needs of all the students in the classroom. You may work in a group and turn in two copies of one unit. One graded unit will be turn in to the group. The characteristics of the teaching unit are described in the rubric. This unit will be turned in when we do our sharing. I will request a disk copy of the unit for inclusion in our Web page. Please turn in two units (copies) to the instructor.

Science Content Standards for California Public Schools. Kindergarten through grade twelve will be added to the unit (choose one grade). The Science Content Standards for California Public Schools. Kindergarten through grade twelve will be developed through units and shared in class. Because of SB2042, the ELD Standards will be integrated in the lesson Plan for the Unit.

Present/teach/demonstrate *2* science experiments from the required or recommended books.

Final Exam

The final exam will be based on a lesson plan taught to English Language Learners at a school site of your choice. Write a reflection paper (3-5pgs.) about the lesson taught and student learning, understanding, progress, evaluation, and growth. When writing the paper, consider the following questions: Was the language of the text of the lesson appropriate to the level of understanding and knowledge of the student? Was the Bloom's Taxonomy addressed? Were the

Science and ELD Standards addressed? Was the lesson taught based on student's prior knowledge? Was the lesson motivating and hands-on? Did the lesson reflect a variety of assessment? What was successful? What would be kept and what would be changed? Is reviewing necessary? How? What was learned about my student and myself? (3-5pgs).

The Final Exam is 20 points.

SCIENCE 4130
SELF EVALUATION

Who am I as a scientist?	_____ 10
Sunal-Chapter Presentation(Refer to teaching approaches in Haapanen's bk.)	_____10
Health book:-role play or game (after Sunal chapter presentation)	_____ 10
Collaboration, Leadership, and Change bk. by Haapanen.	_____10
Science Poems (included in the Unit)	_____ 5
Earthquake (Research, integrating global education, diversity/technology)	_____ 10
Volcano (Research; integrating global education, diversity/technology)	_____ 10
Solar System (Research; integrating global education, diversity/technology)	_____ 10
Science Unit (Research, work, presentation)	_____ 20
Reflection: Adaptation, changes, implementation for your future Sc. & H. classrm	_____ 5
Diverse Scientists (Research;10 in a group of 5;/ 2 per person)	_____ 10
Challenger Learning Center and Technology Participatory Research; & paper	_____ 10
Experiments (Gooey bk) (included in the Unit)	_____ 10
Bloom's Taxonomies (new) (Haapanen's bk.)Collaborative Wk.	_____10
Simulation (Global Science education and diversity)	_____ 10
Attendance & Participation	_____ 10
Midterm (Diversity article-Haapanen's bk. and Sunal bk)	_____ 10
Assessment (Research; Field Wrk. and Research) Refer to Haapanen's bk.	_____10
Final: Reflection & Lesson taught to a Special need or ELD student at a school site	_____ 20

Total Points **200pts**

Grading criteria

You have choices when earning your grade. 1-One absence does not affect your grade. 2-If an emergency occurs, a second absence may be made up with a typed lesson plan and a presentation of a teaching idea benefiting teachers and students. 3-Four tardies may be made up with a five to ten minutes presentation, otherwise it will be counted as an absence. 4-Unless you have made previous arrangements with the instructor, if you leave before class is dismissed, you will be marked absent.

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FINAL EVALUATION

EDMC 4130: Elementary Curriculum and Instruction - Science and Health Methods.

Reiteration of grade Criteria

You have choices when earning your grade. You will earn your final grade if you have the following:

Grade A

1. 200 points, and a perfect attendance.

2. You need to be present for your final exam. Please turn in your final exam typed (it may be hand written) by _____Otherwise your grade will be affected.

3. 200 points, and make up of your one day (3 hours) (Modular: 2 days per attendance) absence by presenting a teaching idea, or talking about a creative and innovative project so that all future teachers can benefit from the idea. (5 to 15 minutes presentation only). Remember you are present for 2 days per session.

Due _____. Old lessons are not considered, unless they are taught as an extension to a new lesson.

Grade B

2. Less than 90%
3. 2 absences (6 hours)

Grade C

If you have less than 80%

Grade D and F
Do not think about it!

An *Incomplete Grade will be given for nine hour absences.*

Refreshing Note:

Working the extra mile, patience, creativity, and having a positive attitude are the key to an ongoing success!
Thank you for being responsible, cooperative, hard worker, understanding and professional!
Best Wishes!
Dr. Iris Haapanen