



CAMPBELLSVILLE UNIVERSITY

COURSE SYLLABUS

PLEASE TYPE.

DATE Fall 2014

ACADEMIC UNIT Natural Science FACULTY Dr. Milton Rogers

Please check to indicate this course has a service learning component.

Discipline	Course# Section	Title of Course	Credit Hours	Cross Reference (if applicable)
BIO	450-01	Methods of Science Teaching	3	

TEXTBOOK Required Not Required

Author _____ Title _____

Publisher _____ Date of Publication _____

WORKBOOK

Author _____ Title _____

Publisher _____ Date of Publication _____

PLEASE ANSWER THE FOLLOWING QUESTIONS ON A SEPARATE SHEET OF PAPER AND ATTACH TO THIS FORM.

- DESCRIPTION OF COURSE: Develop a brief description of the course as it will appear in the Catalog.
- STUDENT LEARNING OBJECTIVES: List the student learning objectives for the course. Please relate these objectives to the mission and goals of the University and the Academic Unit. For general education courses, please indicate which student learning objectives address general education goals and the intended method of assessment. A minimum of four of the seven general education goals must be included.

Example: Students will demonstrate their ability to compare and contrast two types of basket weaving. (Goal: Oral and Written Communication; Evidence: research paper and class presentation)

- COURSE OUTLINE: Outline the topics/units that are to be taught.
- EVALUATION: How do you plan to determine the grade in the course? Please include grading scale.
- REQUIREMENTS:
 - Examinations: State when tests are to be administered, including unit, mid-term, and final examinations.
 - Reports: How many, length required, and what type (Oral, term and/or research, book critiques).
 - Supplemental reading assignments or outside work required.
 - Supplemental instruction aids: Audio visual aids, field trips, guest speakers, etc.

6. BOOKLIST

DEAN Mike Page Date Copy Received 9/17/2014

VICE PRESIDENT FOR ACADEMIC AFFAIRS Date Copy Received _____

BIO 450/550 METHODS OF SCIENCE TEACHING

I. Purpose

BIO 450/550 is a methods course for prospective teachers of biology, chemistry and middle school science. This course provides practical information about the types of methods and materials available to the science teacher. See Item X for additional requirements if taken for graduate credit.

II. Text-none required, several will be available for reference

III. Reference texts

Science Instruction in the Middle and Secondary Schools, 2nd Edition, Alfred Collette and Eugene Chiappetta, Merrill, 1989

Benchmarks for Science Literacy; Project 2061, American Association for the Advancement of Science, Oxford University Press, 1993

Science for All Americans; Project 2061, American Association for the Advancement of Science, Oxford University Press, 1990

A Sourcebook for the Biological Sciences, Third Edition, Morholt and Brandwein, Harcourt Brace and Company, 1986

Also, variety of high school textbooks will be available for your use.

IV. Requirements

A. Folder of Contemporary Issues

Keep a folder of the articles that I give you plus any you bring in to share with the class. Provide some indication (highlighting, underlining, etc.) the articles were read.

B. Teaching/laboratory suppliers

We will spend some class time looking at science/education catalogs. Each student will make a list of addresses, telephone numbers, emails, etc. of some of the more reliable supply companies.

C. Creationism Court Cases

Write a short synopsis of ten major court cases about teaching creationism: *Epperson v. Arkansas*, *Segraves v. State of California*, *McLean v. Arkansas Board of Education*, *Edwards v. Aguillard*, *Webster v. New Lenox School District*, *John E. Peloza v. Capistrano Unified School District*, *Freiler v. Tangipahoa Board of Education*, *Rodney LeVake v. Independent school District 656, et al*, *Selman Et al. v. Cobb County School District et al.*, *Tammy Kitzmiller, et al. v. Dover Area School District, et al.*

D. Common Core Content

Write a short paper about the history of and rationale for the Next Generation Science Standards. Also, comment on so-called "controversial" topics included in the standards.

E. "How To" Folder

Your "How To" folder will include a minimum of 30 classroom activities, experiments, laboratory exercises and demonstrations. You may include a wide variety of items including items from teachers in the field. We will do a number of items in class such as clean a microscope, extract DNA, paper chromatography of plant

pigments, etc. I would really like for you to have about 100 "how to" items. See what is available on the internet.0000000

- F. Lesson Plans for a "Mini-unit" of instruction - 5 instructional days
This requirement has several goals or purposes. One is to introduce the process of planning. A second purpose is to provide experience in preparing and presenting lessons. This week of instruction will consist of five lessons (5 instructional days) on a particular topic in your field of study.

You are to use the modified Kentucky Teacher Internship Program format (Task G-J: The Instructional Unit) from the School of Education.

Write daily lesson plans to tell how you would present your topic. Use a variety of teaching techniques such as lecture, group activities, demonstrations, laboratories, recitation, and problem solving. Also, use a variety of audio-visual equipment such as overhead projector, TV/VCR/DVD, computer, power point, SMART Board and chalkboard/whiteboard. Identify the materials you would need and sources for the materials. If possible, incorporate Kahn Academy in your plans.

Each lesson plan should comply with the new core content.

If time permits, we might even practice teaching one or more lessons in the unit.

G. Observations

You are to complete 20 field hours of observations for this course. I will provide Field Experience Summary Forms from the School of Education for documentation. 120 hours are required before student teaching, and you can use observational hours from other courses to fulfill this requirement.

H. Examinations

There will be one take-home exam. If appropriate, a second may be scheduled.

I. Eugenia Scott's Book

Read Chapter One about science and complete a handout.

V. Evaluation

A. Issues Folder -----	00
B. Scientific/teaching supply companies -----	00
C. Court cases -----	100
D. New Core Content -----	100
E. How-to folder -----	00
F. Mini unit (5 days)with lesson plans) ----	200
G. Observations (School of Education) -----	00
H. Exams 1 @ 150 points each -----	150 (300 if two)
I. Eugenia Scott's Chapter 1 -----	20
TOTAL	570

All requirements must be completed to receive a grade.

VI. Attendance

There are no "excused" absences; students are responsible for all material covered in class. It is the student's responsibility to borrow notes when they are absent. **The University Undergraduate Attendance Policy will be followed in this class.** Recording devices are not allowed in class.

VII. Praxis Review

The instructor will conduct:

A. a review of content knowledge for the middle school science component of the Praxis Test.

B. a review of content knowledge for the Praxis II biology test.

In both cases, study guide books will be provided.

VIII. Disability Statement

Campbellsville University is committed to reasonable accommodations for students who have documented learning and physical disabilities as well as medical or emotional conditions. If you have a documented disability or condition of this nature, you may be eligible for disability services. Documentation must be from a licensed professional and current in terms of assessment. Please contact the Coordinator of Disability Services at 270-789-5192 to inquire about their services.

IX. Emergency Numbers - Campus Security

270-403-3611 (cell)

270-789-5555

X. Graduate Credit

To receive graduate credit for this course the student must complete the following:

A. Keep a portfolio of ways to teach controversial topics such as evolution, global warming & climate change, extinction, loss of biodiversity, and the role of nutrition in obesity & diabetes

B. Research the GEMS curriculum and produce lessons plans

C. Research the Kahn Academy and identify some lessons that could be used in the classroom

We have a fairly substantial collection of video tapes/DVDs and laser discs on a variety of scientific and biological topics. You may want to use some of them in your lesson plans.