

## GENERAL INSTRUCTIONS AND INFORMATION FOR TEACHING METHODS

**BIOL 4900-01** Fall 2005, Class meets T 1:00-2:20, R 1:00-4:00in SC 128?, Prerequisites: Biology 3110 Evolution. The **\$25 course fee** will be used for instructional material and travel costs.

**Instructor: Dr. Kate Grandison:** Office: SC184A, **scheduled office hours:** M F Open Door, T 10-11, 3-5pm, R 9-10am, **open door** or by appointment. Contact through message on office door whiteboard, telephone: 865-8345, mailbox SC105, **or e-mail:** [grandison@suu.edu](mailto:grandison@suu.edu)

**GOALS OF THIS COURSE:** We will focus on strategies for DOING SCIENCE in the classroom based on National and the Utah state science core objectives which will help you prepare to meet INTASC standards for teacher licensing and development. These are listed on the back page of the syllabus and will also be addressed in your secondary education courses.

**In this course, You are expected to acquire and demonstrate:**

1. A basic understanding of science as a way of knowing emphasizing the scope and benchmarks of biological literacy.
2. Effective strategies for learning and teaching science
3. The ability to apply this understanding and knowledge for use in teaching.

**TEXT: Required:** *Benchmarks for Scientific Literacy* (Project 2061. 1993) and *Science For All Americans* (Rutherford, F.J. and A. Ahlgren, 1990, Oxford University Press) both are online: <http://www.project2061.org>, *Teaching about Evolution and the Nature of Science* (National Academy of Sciences) and the *UTAH State Science Core* (ALL available for free at the following Internet address: <http://www.usoe.k12.ut.us/curr/science/>)

**REFERENCES: Recommended:** *Sharing Nature with Children* (Cornell, J. 1979), *Ten-Minute Field Trips* (Russell, H. 1990), *Classroom Creature Culture* (Hampton, C. et al. 1986), *Animals in Action* (Barrett, K. 1986), *Mapping Animal Movements* (Barrett, K. 1987). *First Days of School* (Wong, Harry 1993). Supplementary support information available on Utah education home page <http://www.usoe.k12.ut.us/curr/science/>). Other great curriculum sources: <http://www.teachersdomain.org>

**GRADING: Grades will be based on demonstration of your acquisition of the class goals through:**

**1) Class Participation= 50%(100 points)** will include your thoughtful, prepared participation in discussions individually and in groups. You will have weekly reading assignments which require short summary response papers highlighting new ideas, questions, or concept maps based on the readings. **Class Attendance is required.** This is an interactive class. Much of your class time will be spent working with a group. You and your group will be developing and practicing teaching strategies and sharing with the rest of the class. You will **videotape 2** of your presentations and write an analysis with reflections for each videotape. I will model this for you. You will schedule **TWO 3 hour practicum experiences** at your convenience during the scheduled weeks. Times, activities, course and teacher names as well as your reflection on the practicum should be included in your documentation.

Also as part of your class participation you will choose, use and maintain a **Classroom Organism & a Closed Ecosystem** to help develop your skills in design and use of living materials in the classroom.

**Your overall attitude and performance** in class will be the basis of my letter of recommendation for your student teacher placement file. Please invest the time to make this your best performance.

**2) Your Portfolio=30% (80 points)** should be structured around the Utah state core curriculum, and include material from class presentations and other resources but should ALSO reflect your special interests. The purpose of your portfolio is to 1) help you organize your curriculum for teaching purposes AND 2) allow you to synthesize and apply the knowledge that you have gained in this and other classes, AND 3) **Show Off at Job Interviews!**

**3) FINAL EXAMINATION=20% (20 points)** will be in the format of a job/exit interview. This will be a written take home exam that **You** will turn in at the scheduled final exam time. At this time there will also be a final oral exit interview. **DECEMBER 16 @ 3 pm**

**FINAL GRADES:** Your class participation, your portfolio and final exit interview will be evaluated using the following overall criteria:

1. Comprehensiveness: Do you have philosophy, strategies, assessments, all assignments, handouts, measurable objectives ?
2. Relevance: Is it organized in a meaningful and useful format?
3. Thoughtfulness: evidence of connection of ideas and courageousness, does it reflect your individual approach?
4. In addition, we will develop specific scoring guides (rubrics) for each of your assignments in class.

An A grade (90%) will be earned though successfully meeting all criteria throughout your portfolio and class participation. A B grade(80%) will be earned by meeting all criteria in all but one section of your portfolio and class participation. A C (70%) grade will be earned by meeting all criteria in all but two sections of your portfolio and class participation. **ALL ASSIGNMENTS MUST RECEIVE A SCORE OF 70% OR BETTER** for successful completion of this course.. Anything less will earn an F for the class. **Late work** will not be accepted except in cases of documented emergency.

**Scholastic dishonesty** will not be tolerated and will be prosecuted to the fullest extent. You are expected to have read and understood the current issue of the student handbook (published by Student Services) regarding student responsibilities and rights, and the intellectual property policy, for information about procedures and about what constitutes acceptable on-campus behavior.

**ADA Statement:** Students with medical, psychological, learning, or other disabilities desiring academic adjustments, accommodations, or auxiliary aids will need to contact the Disability Support Center in the Sharwan Smith Center Building , office 206 F , Phone (435) 865-8022. The Disability Support Center determines eligibility for and authorizes the provision of these services and aids.

*Information contained in this syllabus, other than grade and absence policies may be subject to change with advance notice, as deemed appropriate by the instructor.*

### ***Biology Teaching Methods 2004 TENTATIVE SCHEDULE***

WEEK	DATE		TENTATIVE TOPIC	READINGS	DUE ASSIGNMENTS
1	Aug 30	T	Effective Learning and Teaching		Intro info, Hollywood teach
	Sep 1	R	Effective Learning and Teaching	<i>SFAA chap 13</i> <i>New Goals for Biology</i>	Summary Summary
2	Sep 6	T	The Nature of Science?Inquiry	<i>BM&amp;SFAA preface,</i> <i>chp 1</i> <i>Nat Sci Stds Inquiry</i>	Summary Summary plan org and ecosystems
	Sep 8	R	Diversity of Life	<i>BM&amp;SFAA chp 5_ topic only</i>	Summary
3	Sep 13	T	Unit Outline/State Core/Refs Professional Organizations, Textbooks & resources	<i>Sci Teach/ABT</i> <i>NSTA , NABT &amp; USTA</i>	evaluation of websites, journals, Textbooks & resources
	Sep 15	R	Diversity of Life Lesson Plans Questions for higher level thinking	<i>Lesson plan, Rubric</i> <i>handout</i>	Group Teach Unit/Teaching rubrics <b>Start class orgs &amp; ecosys</b>
4	Sep 20	T	Ecology	<i>BM&amp;SFAA chap 5_ topic only</i>	Summary
	Sep 22	R	Field Trips and Resource people	<i>Analyzing data,</i> <i>tables &amp; graphs</i>	
<b>Sept 23</b> <b>USEE conference in Zion</b>					
5	Sep 27	T	Project Wild		Group Teach + lesson plans
	Sep 29	R	Project Wild		Group Teach + lesson plans

6	Oct 4	T	Cells Learning Cycles & Mind Maps	<i>BM&amp;SFAA chap 5: topic only</i>	Summary
	Oct 6	R	Cells		Group Teach + lesson plans
7	Oct 11	T	Assessment	<i>BM&amp;SFAA chap 10 Assessment Handouts</i>	Summary, con map Ecology, Div Life
	Oct 13	R	Assessment	<b>Get Cool Stuff and Lesson Plans and Meet teacher mentors</b>	Your Assessments Cells/Div of Life/Ecology
8	Oct 18	T	Cells Lab Groups & Lab Safety	<i>BM&amp;SFAA chap 12</i>	Summary and Summary BM concept map Cells
	Oct 20	R	Cells		Group Teach + lesson plans
9	Oct 25	T	Practicum 1		Documentation
	Oct 27	R	Practicum 1		Documentation
10	Nov 1	T	Heredity, Analyzing data, tables & graphs	<i>BM&amp;SFAA chap 5_topic only</i>	Summary <b>Documentation Practicum 1 DUE</b>
<b>TRIP?</b>	Nov 3 Nov 5-8	R	Heredity NABT Conference in Milwaukee		You Teach + lesson plans
11	Nov 8	T	Heredity, Technology & Collaborative learning		PORTFOLIO REVIEW by appointment
	Nov 10	R	Science Fair Rules & Format		Share experiences
12	Nov 15	T	Practicum 2		<b>Documentation: Teach</b>
<b>TRIP?</b>	Nov 17 Nov 18-20	R	Practicum 2 NSTA Conference Seattle, WA	<b>Get Cool Stuff and Lesson Plans and Meet teacher mentors</b>	Documentation
13	Nov 22	T	<b>Getting a job/</b> State Office Ed, Cedar High School Vice Principal	<i>Utah State Science Coordinator</i>	Questions, Mock Interview
	Nov 24	R	THANKSGIVING HOLIDAY		
14	Nov 29	T	Evolution	<i>BM&amp;SFAA chap 5_topic only, Why teach about evol?</i>	Summary UT Sci Homepage/ Summary
	Dec 1	R	Evolution		You Teach + lesson plans
15	Dec 6	T	SCIENCE FAIR CONTEST	Big prizes will be awarded!	Your Poster Display <b>Documentation Practicum 2 DUE</b>
	Dec 8	R	Show and Tell: Your Organism & Ecosystem So What? and other Questions		Presentation with handouts
16	DEC 15		<b>FINAL EXAM &amp; EVALUATION @ 3 pm</b>	<b>ORAL EXIT INTERVIEW</b>	<b>Written Exam and PORTFOLIO</b>

"A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise." Aldo Leopold

"Wisdom is a butterfly – not a gloomy bird of prey" WBYeates

USTA Mid Winter Conference Feb 2006

NABT October 5-8, 2005, Milwaukee, WI

NSTA National Convention Anaheim, CA. April 6-9, 2006