

BSC 307: Methods of Teaching Biology – Spring 2012

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Overview: The purpose of this course is to explore the world of teaching biology, including both the intricacies of the science classroom and different methodologies of teaching biological sciences. The course is set up in such a way as to allow students to practice the techniques and methods discussed in class, with opportunity for both peer and instructor feedback. The course is work intensive, as it is meant to prepare you for a career in biology education.

Participation and Attendance: Participation and attendance in both classroom discussion/activities and professional opportunities is expected. Absences, if unavoidable, may be met with an alternative assignment. Please notify the instructor of any pending absences. Students are allowed one absence. Subsequent absences will only be excused by a doctor's note or university permission. Each additional absence will result in a 5% deduction in the student's final grade.

Objectives:

After the course, the student will be able to...

1. Describe how a student's background impacts classroom behavior and appropriate strategies for dealing with inappropriate behavior.
2. Identify age appropriate cognitive levels and content levels when designing lessons for students.
3. Describe what science literacy is and outline a plan for teaching science literacy in the classroom.
4. Engage students in learning science via a variety of teaching strategies.
5. Develop and teach a lesson based on the 5E model.
6. Design and instruct a contextual laboratory session.
7. Design a problem based learning activity.
8. Develop a web quest.
9. Design a project to engage students in learning science.
10. Develop a rubric to assess subjective assignments.
11. Plan assessments to monitor and support student learning.
12. Create a unit exam.
13. Analyze assessments for effectiveness in evaluating student learning of given objectives.

14. Determine appropriate assessment strategies for different lessons.
15. Develop an overall assessment plan.
16. Construct an overall classroom environment vision.
17. Describe how technology can be used to enhance science education.
18. Outline a classroom management plan.
19. Outline a classroom organization plan.
20. Design his or her ideal science classroom.
21. Create a professional web site for use with students and parents.
22. Plan a 10-12 day unit.

Assignments:

1. Weekly work*: The criteria for these assignments will be provided in class as the assignments are discussed and “officially” assigned. Unless otherwise stated, assignments are expected to be posted on the appropriate page of the class WIKI, using the format discussed in class.

- A. Classroom environment project (Includes ITPS D)
- B. Abstract concept lesson and presentation
- C. Science Literacy Assignment
- D. Contextual teaching activity and presentation
- E. Laboratory teaching session
- F. Problem based learning project
- G. Standard assessment
- H. Authentic assessment with rubric
- I. Unit Planning Activity

*Note: Some assignments may be adjusted or eliminated during the semester, depending on time and other logistical constraints.

2. Clinical Experience: Working with students is critical to the development of any pre service educator. In this course, you will be required to complete a minimum of 40 hours of clinical work. Further details as to what that work will consist of is outlined in your BSC 307 Clinical Guide. **Your clinical paper is due on May 2, 2012.**

3. Grading

All assignments are expected to be completed at a level of 90% or better. In this professional development course, we are concerned with the MASTERY of the material. Assignments that are unacceptable may be revised for additional credit. **Revisions must be turned in within two weeks upon return of graded materials.** The only exception to this are assignments not turned in by the original due date. In that situation, the highest grade that a student can earn on such an assignment is 80%. There will be an automatic deduction of 20% on any assignment turned in past the original due date unless prior arrangements have been made with the instructor. Students struggling with mastery of material in this course will undergo a remediation sequence that will involve an instructor – student conference (after a second failed attempt at the assignment) at which additional steps (including removal from the education sequence) will be discussed.

Feedback from peers will be given after in-class presentations but all grading will be done by the instructor.

Other Course Standards: Academic integrity and professional behavior are expected in all endeavors. This includes promptness and preparedness for class, courtesy in all matters, and honest in academic work. Offenses to academic integrity and definitions of such can be found in the ISU Student Handbook.

Citing Resources: Any time you use someone else's information, you must give them credit. All resource citing must be done in APA style. Use the web site below as a guide.

<http://citationcenter.net/ctool.php5?style=APA>

Philosophy:

Materials for this course are developed based on the Biology Teacher Certification program's mission statement and goals, the Illinois Professional Teaching Standards, the National Board's Architecture of Effective Teaching, and the College of Education's Realizing the Democratic Ideal framework.

ISU Biology Teacher Certification Program:

The ISU Biology Teacher Certification Program prides itself in developing science teachers who are prepared to teach biology to all students. The program is designed to develop biology teachers who exhibit a comprehensive understanding of the content and nature of science through student-centered teaching strategies while employing both equitable and reflective practices.

Illinois Professional Teaching Standards:

The Illinois Professional Teaching Standards outline the expected proficiencies of all professional educators in the state of Illinois. These standards can be found at http://www.isbe.state.il.us/PEAC/pdf/IL_prof_teaching_stds.pdf.

National Board for Professional Teaching Standards - Architecture of Effective Teaching:

Nationally Board Certified Teachers are known as the "best of best" in the country. The National Board of Professional Teaching Standards has outlined what they consider essential characteristics of effective teachers. They can be found at http://nbrc.stanford.edu/sites/default/files/FR%201.1.AAT_.ppt.pdf.

Realizing the Democratic Ideal:

Illinois State University has a historic and enduring commitment to prepare teachers and other school personnel who will be responsive to the ethical and intellectual demands of a democratic society. To teach in a democracy is to consciously take up the challenge of improving the ethical and intellectual quality of our societal dialogue by including in it as many educated voices as possible.

For more information about ISU's Conceptual Framework, please visit:

<http://www.teachereducation.ilstu.edu/councilforteacherred/democratic-ideal.shtml>

