

I. Course Information

EDSE 446: **Special Methods I: Science.** Teaching strategies and methodologies of first-year teacher of science. To be taken concurrently with EDSE 400. (3 credit hours)

Instructor: Dr. Brooke A. Whitworth
Email: bawhit@olemiss.edu
Office: 301 Guyton
Phone: 662.915.5878

Class Location: 115 Guyton
Class Time: Monday & Wednesday, 9:30AM - 10:45AM
Office Hours: Monday & Wednesday, 11:00AM - 4:00PM

II. School of Education Conceptual Framework

A. Mission Statement

The mission of the School of Education is to prepare and engage reflective professionals who create, use and share knowledge in partnership with individuals and communities to serve Mississippi and beyond.

B. Vision Statement

We imagine the transformation of individuals and communities to advance educational equity and excellence through innovative practice by professionals who lead and inspire others.

C. Unit Major (M) and Minor (m) Themes/Outcomes

1. Lifelong learners who take responsibility for their own learning and continuously foster their professional renewal. (M)
2. Problem solvers who develop solutions to improve the educational environment for all students. (M)
3. Effective communicators who effectively use verbal, non-verbal, electronic, and print modes of communication to establish a positive school environment and promote student thinking and learning. (M)
4. Users of technology who integrate multimedia in learning environments as instructional and management tools to enhance student learning. (M)
5. Advocates for diverse learners who appreciate, promote, and model the values of diversity. (M)

III. Knowledge Base Major (M) and Minor (m)

Themes:

- T -- Thinking and problem solving (M)
- E -- Equality and respect for diversity (M)
- A -- Appropriate teaching strategies (M)
- C -- Communication and cooperation (M)
- H -- Human development and curriculum (M)
- E -- Esteem, autonomy, and lifelong learning (M)
- R -- Relevance: social and global (m)
- S -- Supervision, management, and guidance (m)



IV. Professional Dispositions for Candidates

Teacher Ed	InTASC	Imagine, Innovate, Inspire	Conceptual Framework
Demonstrates an expectation that all students can learn and are a vital part of the learning community.	1, 2, 8	Caring, Equality	Advocates for Diverse Learners Effective Communicators
Displays sensitivity to students' needs.	2, 3, 6, 7	Professionalism, Collaboration, Excellence	Advocates for Diverse Learners Problem Solvers Effective Communicators
Works with peers, clinical instructors, university supervisors, and relevant stakeholders to advance student learning.	10	Professionalism, Leadership	Effective Communicators Problem Solvers Users of Technology
Models poise, maturity, and sound judgment.	9	Excellence, Transformation	Life-Long Learners
Engages in continuous self-evaluation and improvement.	9	Excellence, Transformation	Life-Long Learners Problem Solvers Effective Communicators
Acts as a steward of the profession.	9, 10	Collaboration, Leadership	Effective Communicators Problem Solvers

V. References

A. Primary Text

Assigned articles and chapters will be provided through Google Classroom.

B. Supplemental Texts

Mississippi Department of Education. (2017). Mississippi College- and Career- Readiness Standards for Science.

Available online: http://www.mde.k12.ms.us/docs/secondary-education/2018-ms_ccrs---science_k-12_final_20170616.pdf?sfvrsn=2

National Research Council. (2012). *Next Generation Science Framework*. Washington DC: National Academy Press. Available online: http://www.nap.edu/catalog.php?record_id=13165

NGSS Lead States. (2013). *Next Generation Science Standards: For states, by states*. Washington, DC: The National Academies Press. Available online: <http://www.nextgenscience.org/>

VI. Purpose of the Course

The purpose of this course is to assist candidates in becoming effective teachers of secondary science. Activities will be assigned to enable candidates to design ways to effectively teach science. **Both teacher and student driven technologies to learn science is emphasized within the curriculum frameworks reviewed in the course. The belief that all students can be successful in science and engineering is addressed through the idea of doing inquiry, science career options and understanding the nature of science.**

VII. Course Objectives

Candidates will be able to:

1. Apply and demonstrate technology as an effective science teaching and learning tool. (INTASC 1, 2, 3, 4, 5, 7) (CF: Effective Communicators, Users of Technology)
2. Apply and demonstrate manipulatives as an effective science teaching and learning tool. (INTASC 1, 2, 3, 4, 7) (CF: Effective Communicators)
3. Effectively communicate science concepts. (INTASC 6,7) (CF: Effective Communicators)
4. Demonstrate and employ effective problem-solving strategies. (INTASC 2, 3, 4, 8) (CF: Problem Solvers, Effective Communicators)
5. Employ effective methods (e.g., inquiry based instruction) to encourage and entice the learning of science. (INTASC 1, 2, 3, 4, 8) (CF: Effective Communicators)
6. Employ state and national science standards within lessons developed and taught (INTASC 1, 2, 3, 4, 9)
7. Demonstrate and employ appropriate safety and animal care procedures within classrooms assigned (INTASC 1, 2, 3, 4, 9)
8. Address the specific needs of a diverse science classroom (INTASC 1, 2, 3, 4, 7, 9) (CF: Advocate for Diverse Learners)
9. Effectively assess student science progress. (INTASC 6)
10. Conduct an inquiry based scientific research study.

IX. Course Requirements, Policies, and Evaluation Procedures

A. Course Requirements

Unless otherwise noted all assignments should be turned in through Google Classroom.

Assignment	Points
Attendance & Participation	Critical to success in EDSE 446
Reading Quizzes	60
Discourse Circle	10
Engineering Design Brief	10
Five Day Lesson Plan	30
Assessment #3: Unit Plan Rubric Addendum	20
Assessment #4: TIAI Addendum	20
Assessment #5: TWS Rubric Addendum	20
Assessment #7: Scientific Investigation Design	30
Assessment #8: Nature of Science Reflection	20
Dispositions Reflection	10
Final Exam	70
TOTAL POINTS POSSIBLE	250

Rubrics and checklists will be used to determine candidate achievement of the course objectives.

B. Assessment procedure

Products will be used to determine candidate achievement of the course objectives. All required assignments will be given a specific grade. Grades will be computed using the following scale:

A	B	C	D	F
100-92	91-83	82-74	73-65	Below 65

C. Field Experience and Clinical Practice

Each candidate will complete a field experience of at least 40 hours in a secondary science classroom in conjunction with EDSE 400. Candidates will be assigned to a designated secondary classroom and teacher. Each candidate will be evaluated by a supervising teacher using the EDSE 400 field experience evaluation form. Failure to complete the minimum number of hours or the minimum acceptable score on the field experience evaluation will result in a failing grade in the course.

D. Instructional Strategies

The course will include lecture, class discussion, cooperative/collaborative group activities, demonstrations, role play/simulations, guest speakers, a field-based component, and work with technology.

E. Attendance Policy

Attendance and participation in class are expected. Excessive absences (more than two) will adversely affect the final grade for the course. Each additional absence results in a 10-point deduction from the total points for this course. Candidates are responsible for all material covered when absent. Late assignments will not be accepted (see Flexibility Clause). It is the responsibility of the student to make arrangements for turning in assignments on the due date if absent.

F. Disability Access and Inclusion

The University of Mississippi is committed to the creation of inclusive learning environments for all students. If there are aspects of the instruction or design of this course that result in barriers to your full inclusion and participation or to accurate assessment of your achievement, please contact the course instructor as soon as possible. Barriers may include, but are not necessarily limited to, timed exams and in-class assignments, difficulty with the acquisition of lecture content, inaccessible web content or the use of non-captioned or non-transcribed video and audio files. Students must also contact Student Disability Services at 662-915-7128 so that office can 1) provide you with an Instructor Notification form, 2) facilitate the removal of curricular barriers, and 3) ensure you have equal access to the same opportunities for success that are available to all students.

Special Considerations**A. Academic Integrity and Honesty**

Candidates are expected to follow the honor code as outlined in the current University of Mississippi M Book, which can be found online at <http://www.olemiss.edu/depts/deanofstudents/mbook/>. Plagiarism, as defined in the honor code, will not be tolerated.

B. Flexibility Clause

The aforementioned requirements, assignments, policies, evaluation procedures, etc. are subject to change. Candidates' experiences and needs as emerging knowledge, will be considered in modifying this course syllabus.

Please see Google Classroom for the Course Schedule.