College of Education & Human Development Mission Statement
The new College of Education and Human Development is a world leader in discovering, creating, sharing, and applying principles and practices of multiculturalism and multidisciplinary scholarship to advance teaching and learning and to enhance the psychological, physical, and social development of children, youth, and adults across the lifespan in families, organizations, and communities.

Course Objectives: Conceptual Framework for P-12 Professional Education Programs
The central themes of the Conceptual Framework are:
1. Promoting inquiry, research, and reflection;
2. Honoring the diversity of our communities and learners; and
3. Fostering a commitment to lifelong learning and professional development.

The purpose of this course is to examine science teaching in the high school and help you inquire and reflect about your own teaching practice and its impact on you and your students. Throughout this course we will collaboratively inquire about teaching and learning, observe and analyze instruction, and reflect on your own and each others’ science teaching. Ultimately this course is designed to not only support you during the student teaching experience, but also help you learn how to use various instructional techniques and methods, and to inquire and reflect upon your teaching during this semester and beyond.

Prerequisite: Must be enrolled as a student in the initial licensure program in science education.

Course format will include: discussion of current literature in educational research, examination of case studies of practicing teachers, lesson plan design, and teaching high school students.

Course Goals
1. Develop an understanding of Research-based Instructional Methods
2. Provide collaborative high school student teaching experience with cooperating teacher
3. Develop and teach units for 12 weeks of high school instruction where you will consider the following questions:
   • What major science ideas should be taught?
   • Why are these science concepts important for high school students?
   • What should students be able to do with their science knowledge?
   • Which science concepts and objectives will be difficult to teach and/or assess?
   • What activities should be used to teach the concepts?
4. Critically reflect on your Student Teaching Experience with cooperating teacher (mentor), University supervisor, and peers.

Science Education: Curriculum and Instruction Statement
The science education initial licensure program at the University of Minnesota is designed to help you become an accomplished professional science educator. The program seeks to prepare inquiring, analytical, and reflective educators who can teach in the classroom and lead in the schools.

Course Expectations (Standards for External Review):
Minnesota Standards of Effective Practice for Beginning Teachers

The Minnesota Board of Teaching has mandated that all teacher education programs need to assess their pre-service teachers according to their actual performance based on a set of specific standards. In this performance based approach, rather than simply passing courses or writing quality essays, students in our programs need to demonstrate their knowledge, dispositions, and skills as effective pre-service teachers. The following are the standards adapted by the Teacher Education Council that have been used to develop performance assessment tasks in different foundations and methods courses. You will be evaluated for readiness to obtain licensure based on meeting the following ten standards.

**Standard 1 – Subject Matter.** The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and can create learning experiences that make these aspects of subject matter meaningful for students.

**Standard 2 – Student Learning.** The teacher understands how students learn and develop, and can provide learning opportunities that support their intellectual, social and personal development.

**Standard 3 – Diverse Learners.** The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to learners from diverse cultural backgrounds and with exceptionality.

**Standard 4 – Instructional Strategies.** The teacher understands and uses a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.

**Standard 5 – Learning Environments.** The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive interaction, active engagement in learning, and self motivation.

**Standard 6 – Communication.** The teacher uses knowledge of effective verbal, nonverbal and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.

**Standard 7 – Planning Instruction.** The teacher plans and manages instruction based upon knowledge of subject matter, students, the community, and curriculum goals.

**Standard 8 – Assessment.** The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social, and physical development of the learner.

**Standard 9 – Reflection and Professional Development.** The teacher is a reflective practitioner who continually evaluates the effects of his/her choices and action on others (students, parents, and other professionals in the learning community) and who actively seeks out opportunities to grow professionally.

**Standard 10 – Collaboration, Ethics, and Relationships.** The teacher communicates and interacts with school colleagues, parents/guardians, families, and the community to support students’ learning and well-being.

**Textbooks/ Materials/Fees:**
- Other course materials and readings will be available on Moodle.

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**Course Assignments for 5532**

Grading in CI 5532 will be based upon the following six components:

10% = **Venture/Vexation.** There will be five venture/vexation sessions during the semester. Once during the semester you will be asked to write a short reflection paper. The purpose of the reflection is to
share a point of view, debate an idea, and/or describe a problem you are having. See schedule for assignment dates. Late postings will be reduced 10% each day they are late. (BOT standard 1-10)

15% = **TPA Task 1: Planning Instruction and Assessment.** You must have your plan and commentary fully written prior to teaching the lessons. Task 1 is due on or before March 28. (BOT standard 1-8)

15% = **TPA Task 2: Instructing and Engaging Students in Learning (Video Lesson Analysis).** Videotape your own teaching and critically examine the lesson. Critique it in writing using the format for the TPA. Task 2 is due on or before April 25. (BOT standard 1-9)

15% = **TPA Task 3: Assessing Student Learning.** This is due on or before April 25. (BOT standard 1-9) *Date for submission to Pearson of Full edTPA is yet to be determined.

20% = **Video Club.** You will video record lessons to share with your video club members. See schedule for due dates and expectations for completion. (BOT standard 1-10)

25% = **Class Participation.** It is expected that you will attend class and participate in class discussions and activities, as well as the weekly blog posts. Missing more than two classes will result in a decrease in your grade by a full letter grade. Some in-class assignments will be collected and included as part of your participation grade. (BOT standards 1-10)

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**Course Outline and Schedule for CI 5532**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic/ Activities</th>
<th>Assignment – due before class time unless specified</th>
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| January 24, 2013 | Introductions, Course Syllabus, Review of TPA Rubrics  
The Science Learning Environment | Journaling #1 on Ning Due Tues, 1/29                  |
| January 31 | The Science Learning Environment (cont.)  
Teaching to the Test…  
Learning Objectives lead to Assessments  
Beginning, During and End of Instruction  
Assessments  
State, National, International Science Assessments | Chapter 4 & 6  
Journaling #2 on Ning Due Tues 2/5                   |
| February 7 | Assessment and Inquiry  
The Vee  
Revisit NOS and Scientific Practices | Journaling #3 on Ning Due Tues 2/12  
Come to class with an assessment you designed, be prepared to discuss with your peers.  
Vexation/Venture #1 Present                          |
| February 14** | LGBT Equity and Science Teaching |                                                      |
| February 21 | Guest:  
Inquiry and Science Teaching  
Equity and Science Teaching  
Differentiation | Chapter 8 & 9  
Journaling #4 on Ning Due Tues 2/26  
Vexation/Venture #2 Present                           |
| February 28 | Teaching Science and Safety | Chapter 5, 11, 13, 14  
Journaling #5 on Ning Due Tues 3/5  
Vexation/Venture #3 Present                           |
| March 7** | Diverse Adolescent Learners and Differentiated Instruction/ Inclusive Instruction | Chapter 9 Journaling #6 Due Tues 3/12 |
| March 14 | Job Search- Bring Resume, Teaching Philosophy | Vexation/Venture #4 Present |
| March 21 | UofM Spring Break – NO CLASS | |
| March 28 | Curriculum: A year-long guide | Task 1 of TPA Due Journaling #7 Due Tues 4/2 |
| April 4 | Modeling and Analogies | Chapter 10: 172-179 Journaling #8 Due Tues 4/9 Vexation/Venture #5 Present |
| April 11 | Questioning/ HOTS/ Argumentation Guest: | Journaling #9 Due Tues 4/16 |
| April 18 | Prepping for last day of Student Teaching TPA Work with feedback from your peers Guest | Last Day of Student Teaching April 19 |
| April 25 | Integrating Engineering | Task 2 & 3 of TPA due |
| May 2 | Integrating Engineering | Journaling #10 Last one Due Tues 5/7 |
| May 9 | Last Day of Class Potluck | |

### Course Requirements for 5597

Three main requirements are in place for your student teaching experience in 5597:

1. You must complete your 12 weeks of student teaching, you are required to share your daily lesson plan on the four dates that your supervisor observes your teaching. You will need to arrange times with your supervisor for these visits.
2. You should show continuous growth through thoughtful reflection, four observations by your supervisor, debriefing sessions after each observation, and weekly meetings with your supervisor small group. You will meet for 30-60 minutes weekly with your supervisor.
3. You should receive a satisfactory review/evaluation from your cooperating teacher.

### Technology

Students in this course will need to have access to university e-mail, as some assignments will be turned in electronically. Course assignments, updated syllabi, & readings will be available through Moodle. Students will also explore instructional technology and web-based technology that supports science instruction.

**Accessing Moodle and Ning:**

To find the course website visit [www.myu.umn.edu](http://www.myu.umn.edu) and go to “My Courses”. You will be asked to sign in using your University ID and password. You will need to make sure your browser is properly configured to use Moodle. We will use Ning to post journals weekly. We will continue to use the Ning site we started this summer.

### Diversity

Preparing educators to work with diverse student populations is an important part of this course. Consideration of diversity is found throughout the readings in this course and will be explicitly addressed in Moodle course website postings. I'll keep an open mind if you will too.

### Disability
The University of Minnesota is committed to providing all students equal access to learning opportunities. Disability Services is the campus office that works with students who have disabilities to provide and/or arrange reasonable accommodations. Student registered with Disability Services, who have a letter requesting accommodations, are encouraged to contact the instructor early in the semester. Students who have, or think they may have a disability (e.g. psychiatric, attentional, learning, vision, hearing, physical, or systemic), are invited to contact Disability Services for a confidential discussion at 612-626-1333 (V/TYY) or ds@umn.edu. Additional information is available at the DS website http://ds.umn.edu.

**Participation**

Attendance is essential in order to experience the practical and social nature of science teaching in schools. Reflection of your teaching experience at the high school with your University Supervisors and peers is critical to the success of this course. Illness or other emergencies may prevent you from attending classes. If you miss more than two of the class sessions or four teaching experiences, the highest grade you can receive is a B. If you miss three or four of the class sessions or more than five teaching experiences that are not “made up”, the highest grade you can receive is a C. Please email me, your supervisor, and cooperating teacher when you are unable to attend the course or your classes at your student teaching site.

**Late Work**

All late assignments will be reduced one letter grade for every day late. For example if the assignment was due on Monday and turned in on Wednesday, the assignment will be reduced two letter grades. Grades will not be reduced more than 50%; however, no work will be accepted if it is over two weeks late. Extensions by the course instructor are only granted in writing for extenuating medical or family problems. Extensions will be granted when a medical doctor provides written documentation. If you do NOT have an extension granted in writing by the instructor, the late assignment will be marked down accordingly.

**Incompletes**

Incompletes are highly discouraged but may be granted under extenuating circumstances such as family medical problems or illness. Incompletes are only granted in writing and will involve a written agreement with a specified completion date. Incompletes in CI 5532 and CI 5597 must be made up by June 30th; until then the student will not be able to apply for their teaching license.

**University of Minnesota Policy on Sexual Misconduct**

University policy prohibits sexual harassment as defined in the 1998 policy statement. Copies of the policy statement on sexual harassment are available at 419 Morrill Hall. Complaints about sexual harassment should be reported to the University Office of Equal Opportunity at 419 Morrill Hall.

**University of Minnesota Policy on Scholastic Misconduct**

Scholastic misconduct is broadly defined as any act that violates the rights of another student in academic work or that involves misrepresentation of your own work." Scholastic dishonesty includes, (but is not necessarily limited to): cheating on assignments or examinations; plagiarizing, which means misrepresenting as your own work any part of work done by another; submitting the same paper, or substantially similar papers, to meet the requirements of more than one course without the approval and consent of all instructors concerned; depriving another student of necessary course materials; or interfering with another student's work.

**Support Services**

During the semester we will be engaged in writing several times. Students who are interested in receiving assistance with their writing may receive help through the following University services:

**The Center for Writing** 227 Lind Hall 612 626-7579. Offers all University of Minnesota students free, individualized writing instruction. The Department of Rhetoric's **Online Writing Center**
http://www.owc.umn.edu/ Provides personalized online tutoring, a grammar hotline, and support for distance learners, especially in science and tech writing.

**How to Access Your Grades**

Grades will be distributed in class and available from your supervisor. End of the term grades are available on OneStop for Students (http://onestop.umn.edu/Student/), click on Grades & Transcripts, then click on View or Print your Unofficial Transcript.

The University of Minnesota is an equal opportunity employer and educator.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage Range</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>100-94</td>
<td>Achievement that is outstanding relative to the level necessary to meet course requirements</td>
</tr>
<tr>
<td>A-</td>
<td>93-90</td>
<td></td>
</tr>
<tr>
<td>B+</td>
<td>89-87</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>86-84</td>
<td>Achievement that is significantly above the level necessary to meet course requirements</td>
</tr>
<tr>
<td>B-</td>
<td>83-80</td>
<td></td>
</tr>
<tr>
<td>C+</td>
<td>79-77</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>76-74</td>
<td>Achievement that meets the course requirements in every respect</td>
</tr>
<tr>
<td>C-</td>
<td>73-70</td>
<td></td>
</tr>
<tr>
<td>D+</td>
<td>69-67</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>66-64</td>
<td>Achievement that is worthy of credit even though it fails to meet fully the course requirements</td>
</tr>
<tr>
<td>D-</td>
<td>63-60</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>&lt;60</td>
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</tbody>
</table>

**Science Education Resources Used to Prepare for this Course:**


