

Course Project

Due Wednesday June 3, 2015 by 9:00 AM

The major course project is intended to allow you, individuals, in pairs, or in trios to develop a complete teaching resource package for a unit to support implementation of a selected topic from the Common Core State Standards. These web-based units will provide a comprehensive set of originally developed instructional materials that a middle or secondary teacher could use to teach a mathematical topic keyed to appropriate standards. The package should provide student materials, didactical rationales, and detailed guidelines related to all activities of the unit, including assessment and evaluation. The web-based unit should make use of appropriate technologies.

Some possible broad topics:

- Vectors
- Inequalities
- Complex numbers
- Number theory
- Functions
- Trigonometry
- Mathematical systems
- Matrices
- Sequences and Series
- Probability
- Geometric Probability
- Data and statistics
- Measurement
- Circles
- Similarity
- Transformations
- Modeling

Unit Sequence

Although there is no set number of activities to be included in the unit, you should provide enough activities such that students should be able to develop a conceptual understanding and procedural fluency of the mathematics. The sequence of activities should be based on what we know from research on how students learn the particular topic and correspond with prior grade-level standards.

Activity

For each activity, you should include a list of materials or resources needed by the students, a link to the website or technology file to be downloaded, and student handouts. In addition, you should provide a detailed description of the activity such that a teacher could successfully implement and facilitate the activity from reading the description.

Activity Rationale

For every major activity in the unit, you will provide a rationale for its inclusion. Each rationale will contain, but is not limited to, the following:

- The learning objectives for the activity and their connection to the goals of the unit
- The mathematical practices that will be developed during the activity
- How the technology corresponds with the learning objectives
- The connection between the technology and the learning objectives

Teacher Guidelines

For every major activity in the unit, you will provide guidelines for the teacher on how to best implement and facilitate the activity. The guidelines should address many of the following items:

- Materials needed
- Answer keys for all handouts
- Anticipated student actions, difficulties students may experience when engaged with the activity, and possible misconceptions that students may develop from this activity
- Directions on how to use the technology and technical issues that may arise
- Questions to pose to the students
- Sequencing of student responses

Assessments

In addition to activities, you should include the ways in which teachers should assess students during the unit. This should include both formative and summative assessments. Answer keys, if applicable, should accompany each assessment.

Project Format

The format and location of the web-based units is up to you or your groups. The only condition is that the unit must be available to all web users. For example the group could place their resource on a Weebly, a wiki, or make use of Google Sites. Materials for all activities (including technology files, answer keys, handouts, etc.) should be available to the reader on-line (links to websites would be appropriate).

Assignments Due and Rubrics

Important Due Dates:

Wednesday, May 15 – Course Project Topic is Due

Wednesday, May 20 – Course Project Intermediate Reflection is Due

Wednesday, May 27 – Course Project Intermediate Reflection is Due

Thursday, June 3 – Course Project, Course Project Final Reflection, Presentation are Due

Project Topic

By May 15, one member of your group will submit the topic for your unit including the standards you plan to address and the names of all of the group members. You will email Dr. Smith (smithryc@uga.edu) this information.

Intermediate Reflections

By 11:59 PM on May 20 and May 27, every student will submit a 1-2 page summary on the progress of the unit including his or her contribution for that week, what he or she learned, and what issues the group is facing. Submit your reflections as:

Reflection 1:

EMAT_4700_May15_Project_Reflection_1_YOURLASTNAME.docx (or .doc) OR

EMAT_6700_May15_Project_Reflection_1_YOURLASTNAME.docx (or .doc)

Reflection 2:

EMAT_4700_May15_Project_Reflection_2_YOURLASTNAME.docx (or .doc) OR

EMAT_6700_May15_Project_Reflection_2_YOURLASTNAME.docx (or .doc)

INTERMEDIATE REFLECTION RUBRIC

Section	Points Possible	Points/Comments
Description of the progress made on the unit is thorough.	3	
The summary of what the students learned is insightful and goes beyond learning a new aspect of the technology or a new activity to use with students. The students should examine the broader perspective about what he or she learned about teaching.	3	
The description of the issues the group is facing is clearly stated. In addition, the student should explain why that issue is a problem, and some possible solutions that have been considered by the group.	3	
Paper is well organized and clearly written such that the flow of ideas is logical. The paper is written in a professional manner with few errors (grammar, spelling, sentence-structure, and APA).	1	
Total	10	

Course Project

On June 3, you will submit the link to the home page for your course project on eLC. Your Course Project should be a collection of organized webpages that contains, activities, rationales, teacher guidelines, and assessments focused on teaching mathematical standards from the Common Core state standards. Your project should include at least one activity for each member of the group. If you are working on your own, you should include two activities. The grade for your project will be based on the following:

- How well the included activities address the selected Common Core standards (content and mathematical practices). In addition, each activity should ask students to use technology in meaningful ways so that they develop a conceptual understanding of the mathematics.
- The clarity and thoroughness of the connections between the learning objectives of the activities, the use of technology, and the standards being addressed.
- The accuracy and thoroughness of the teacher guidelines.
- The quality of the assessment such that the assessments assess students' knowledge and understanding of the standard.
- The clarity of the writing, organization of the website, and ease of navigating between pages.

COURSE PROJECT RUBRIC

Section	Points Possible	Points/Comments
Activity – The activities that were included in the unit sequence will fully address the selected Common Core standards. Each activity asks to use technology in a meaningful way.	30	
Rationale – For each activity, a rationale for the selection of the activity is included. The rationale should clearly describe the connections between the learning objectives of the activities, the use of technology, and the selected standards (content and process).	30	
Teacher Guidelines – For each activity, guidelines for teachers are included. These guidelines include accurate answer keys and technical directions, appropriate anticipated student actions, misconceptions, and difficulties, challenging questions to pose to students, and appropriate sequencing of student responses.	15	
Assessments – The proposed assessments clearly connect to the learning goals of the activities and address the selected standards. Both formative and summative assessments are included and accurate answer keys are provided.	15	
Appearance – The webpages are well organized and easy to maneuver. All sources are properly cited using APA formatting and there are few writing errors (grammar, spelling, and sentence-structure).	10	
Total	100	

Course Project Reflection

On June 3, each member of the group will submit an individual reflection on the process of creating this unit. The focus of this reflection is on what you learned while working on this project. Consider what you learned about task design and selection, technology design, questioning, assessment, and student thinking (to name a few). You should also consider how this project benefits your future teaching and current professional development. Your reflection should be 2-3 pages in length, double-spaced using 12-point Times New Roman Font. Submit your reflection as:

EMAT_4700_May15_Course_Project_Reflection_YOURLASTNAME.docx (or .doc) OR
EMAT_6700_May15_Course_Project_Reflection_YOURLASTNAME.docx
 on eLearning Commons by **9:00 AM on Wednesday, June 3, 2015.**

COURSE PROJECT REFLECTION RUBRIC

Section	Points Possible	Points/Comments
Reflection The description of your thinking and understanding is thoughtful and thorough. There is evidence of thoughtful reflection that goes beyond just summarizing. All prompts are well addressed.	9	
Presentation – The reflection is well organized and clearly written such that the flow of ideas is logical. The paper is written in a professional manner with no errors (grammar, spelling, sentence-structure, and APA).	1	
Total	10	

Course Project Presentation

On June 3, you and your group members will present your course project to your classmates. In your presentation, you should discuss the following:

- The Common Core standards (both content and process) that are being addressed
- The activities that you choose to include and your rationale for these choices
- A glimpse at the teacher guidelines
- An introduction to the technology that you employed in the unit
- The ways in which you plan to assess students understanding of the content

You will engage the class in ONE of the activities from the unit. You will be given 20 minutes for the entire presentation.

COURSE PROJECT PRESENTATION RUBRIC

Section	Points Possible	Points/Comments
Overview of Topic This includes, but is not limited to, a description of the unit, the rationale for the selection of activities, the relationships between the standards, technology, and activities, and the ways in which the students will be assessed. (10 minutes).	5	
Activity – The group should have the students engage in one of the activities. (20 minutes). Also, the group should discuss how this activity addresses the standards.	10	
Presentation – Every group member should participate in the presentation. The presentation is well articulated and provides the audience an overview of the content of the unit.	5	
Total	20	