Course Instructors

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Course Information

Class Days: Thursdays  
Class Times: 4:15 - 7 PM  
Class Location: CRMSE, Room 218  
Office Hours: Before/After Class and by Appointment  
Office Hours Location: CRMSE, Suite 206

Course Overview

This course is the final seminar in your masters program focused on K-8 mathematics or education and K-12 science education. This course is designed to help you consider (a) ways you can continue learning after the program ends, and (b) ways you can communicate what you have learned to others. You will have opportunities to consider how you can use the resources you have acquired in this program and to identify new resources. We will also explore what it means to be a teacher leader, and the challenges and benefits that can arise from that role. The course will culminate with a poster session showcasing your research projects.

Course Materials

All course materials may be accessed on Blackboard.

Course Assessment and Grading

I hope that we all recognize that grades are designed to reflect what one knows and what one has learned, but they do so inadequately. All grading systems are subjective, even those that are based solely on objective tests. But we do not want grades to interfere with your learning in this course, and we know how important grades are to some people, so we have decided that if your work is less than acceptable on any assignment, we will let you know so that you may redo the assignment. Because this is a graduate course, students are expected to maintain at least a B average. Therefore, if you turn your work in on time, you may assume that, unless we speak to you, we consider your work to be thoughtful and you are maintaining a passing grade. To earn an A, you should consistently grapple with the ideas at a deeper level, and we will expect this depth to be reflected both in your submitted work and in your comments during class discussions. Two examples of ways that you might indicate that you are grappling with ideas at a deeper level are that you draw connections among the readings and between the readings and your own teaching.
We learn not only from the readings and from the instructor, but also from our fellow students. For this reason, attendance and participation are essential in this class and we will consider them in your final grade. If you miss a class (or need to arrive late or leave early), you should email us to let us know, and advance notice is appreciated. It is also your responsibility to speak to us to determine whether you need to do anything to make up the absence. All assignments should still be submitted by the due date unless you have made other arrangements with me.

Most of you are currently serving as full-time teachers while enrolled in two graduate courses, so we know how busy you will be this semester. However, we have found that students with your busy schedules who fall behind find it difficult to catch up. Additionally, if you come to class without having completed the weekly readings, you will not be able to contribute thoughtfully to our class discussions. For these reasons, we will note assignments that are turned in late, and if you consistently turn in late work, this will result in a lower final grade. We also understand that life presents circumstances for which we cannot plan, so please come speak to us if you find you are having difficulty keeping up with the work and we will do what we can to work with you. (Grading policy created and adapted in consultation with other program faculty.)

**Students with Disabilities**

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact Student Disability Services at (619) 594-6473. To avoid any delay in the receipt of your accommodations, you should contact Student Disability Services as soon as possible. Please note that accommodations are not retroactive, and that accommodations based upon disability cannot be provided until you have presented your instructor with an accommodation letter from Student Disability Services. Your cooperation is appreciated.

**Academic Honesty**

The University adheres to a strict policy regarding cheating and plagiarism. These activities will not be tolerated in this class. Become familiar with the policy (http://www.sa.sdsu.edu/srr/conduct1.html). Any cheating or plagiarism will result in failing this class and a disciplinary review by Student Affairs.

Examples of Plagiarism include but are not limited to:

- Using sources verbatim or paraphrasing without giving proper attribution (this can include phrases, sentences, paragraphs and/or pages of work)
- Copying and pasting work from an online or offline source directly and calling it your own
- Using information you find from an online or offline source without giving the author credit
- Replacing words or phrases from another source and inserting your own words or phrases
- Submitting a piece of work you did for one class to another class

If you have questions on what is plagiarism, please consult the policy (http://www.sa.sdsu.edu/srr/conduct1.html) and this helpful guide from the Library: (http://infodome.sdsu.edu/infolit/exploratorium/Standard_5/plagiarism.pdf)
**Exams and Assignments**

**Weekly Reading Reflections, 15%**
For all reading assignments (except the readings for the article/chapter discussion groups on February 10), you should submit a reading reflection. This reflection can take the form of a summary (paragraphs or bullets are fine) and/or questions or comments.

**Facilitation of Discussions, 30%**
Facilitate (with a partner) a small group discussion around a reading, student work OR video. Groups will be assigned during the first class. Readings and student work are to be distributed on Feb 4th. Write ups are due by March 3rd. Presentations will occur for three consecutive weeks: Pair 1 Reading presentation on Feb 11, Student work presentation on Feb 18 and Video presentation on Feb 18.

**Presentation to Colleagues, 20%**
Presentation can be done with your project partner but you need to submit an individual write-up. Initial plan due March 10th and write-up is due April 28th.

**Professional Changes Reflection, 20%**
Reflection of your professional growth during the program. Due April 7th.

**Poster & Poster Presentation (done with your project partner), 15%**

- Drafts of Poster & Presentation: April 28 & May 2
- Poster Session: May 11

Each assignment is due on the date indicated on the syllabus, and details of each assignment are provided at the end of the syllabus.

ALL ASSIGNMENTS MUST BE TURNED IN BY **WEDNESDAY, MAY 11, 2016.**

All written assignments must be typed and double-spaced. Page lengths are specified for each assignment to provide you with an indication of the depth of discussion we are expecting. Consider the specified lengths only as guidelines. Therefore, it is fine if your papers are a little longer or shorter than what is specified -- you do not need to adjust font and margin size! On the other hand, if your paper is much shorter than what is specified, you should probably recheck the assignment instructions to make sure that you have fully completed the assignment.
COURSE PLAN

Note: Readings and assignments are to be completed by the date under which they are listed.

Thursday, January 21 – What is Effective Professional Development?

No Readings

Thursday, January 28 – What is a Teacher Leader? (What can I do with this degree?)

Due: Reading reflections


Thursday, February 4 – Facilitating Mathematical and Scientific Task Discussions

Due: Reading reflections; Preparation for facilitation of discussions (readings facilitators must provide copies of the selected article/chapter & student work facilitators must provide the problems to try & video facilitators must specify their technology needs)


Science Reading TBD

February 2 — Last day to apply for May 2016 graduation. Check Web Portal for more information. (http://arweb.sdsu.edu/es/registrar/apply.html)

Thursday, February 11 – Facilitating Readings Discussions

Due: Readings facilitators should be prepared to lead a discussion in their group

Read the article/chapter selected for your group.

Thursday, February 18 – Facilitating Student Work Discussions

Due: Reading reflections; Student work facilitators should be prepared to lead a discussion in their group


Science Reading TBD

**Thursday, February 25 – Facilitating Video Discussions**

*Due*: Reading reflections; Video facilitators should be prepared to lead a discussion in their group


Science Reading TBD

**Thursday, March 3 – Teacher Learning**

*Due*: Reading reflections; Facilitation write-up


Science Reading TBD

**Thursday, March 10 – Facilitating Professional Development (Revisited)**

*Due*: Plan for presentation to colleagues

No Readings

**Thursday, March 17 – Coaching (Part 1)**

*Due*: Reading reflections


Science Readings TBD

**Thursday, March 24 – Coaching (Part 2)**

*Due*: Reading reflections

Science Reading TBD

**Spring Break, March 28 – April 1st (no fooling!)**

**Thursday, April 7 – Lesson Study (Part 1)**

*Due: Reading reflections*


**Thursday, April 14 – Lesson Study (Part 2)**

*Due: Reading reflections; Professional changes write-up*


**Thursday, April 21 – Learning Through Technology**

*Due: Draft of poster and presentation for ED 795B project*

No Readings

**Thursday, April 28 – Program Reflections & Learning After Graduation**

*Due: Reading reflections; Presentation to colleagues write-up; Revised version of poster and presentation for ED 795B project; FINAL VERSION of ED 795B project paper & electronic binder*


**Thursday, May 5 CRMSE Distinguished Lecturer**
*** WEDNESDAY, MAY 11: POSTER SESSION & CELEBRATION ***

*Family and friends are welcome!*

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**MAY 15 AT 2:00 PM – COMMENCEMENT – YOU MADE IT! **
**CONGRATULATIONS!!**

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**Reading Reflections**

**Due: Throughout Semester**

For all reading assignments (except the readings for the article/chapter discussion groups on February 10), you should submit a reading reflection. This reflection can take the form of a summary (paragraphs or bullets are fine) and/or questions or comments.
Facilitation of Discussions

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<tr>
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<th>Preparation Due</th>
<th>Presentation Due</th>
<th>Write-up Due</th>
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<tr>
<td><strong>Pair 1 Readings</strong></td>
<td>Feb 4</td>
<td>Feb 11</td>
<td>Mar 3</td>
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<td>(bring copies of article/chapter to read)</td>
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<td><strong>Pair 2 Student Work</strong></td>
<td>Feb 4</td>
<td>Feb 18</td>
<td>Mar 3</td>
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<td>(bring copies of problems to try)</td>
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<td><strong>Pair 3 Video</strong></td>
<td>Feb 4</td>
<td>Feb 25</td>
<td>Mar 3</td>
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<td>(specify technology needs)</td>
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These assignments are designed to give you experience facilitating discussions with colleagues. You and your research project partner will be a team. On the first day of class, your team will select readings, student work, or video as your focus.

- Each *pair* will facilitate a 45-minute discussion for their group.
- Each *person* will then individually write a reflection about facilitating professional development activities.

**Pair 1: Facilitating Readings Discussions**

You will explore readings as a resource to help you and your colleagues learn. Some of you may participate in book groups that read and discuss novels. This assignment asks you to think more deeply about a "book" group that focuses on articles/chapters to improve mathematics or science teaching and learning. You are the facilitator for this discussion.

You are all now experts on your research project topics! You have read many articles/chapters to help you gain some of that expertise. Select *one* of the articles/chapters related to your project (and not read in the program) to serve as a discussion catalyst. On **February 4**, please bring copies of this article/chapter for your colleagues (and instructor) to read.

Consider how you would facilitate a discussion about this article/chapter, and what your colleagues’ responses might be. Think about questions to pose or activities to engage your colleagues with related issues. Consider supplementing the discussion with student work or videos or stories or asking participants to engage in mathematical or scientific tasks. Decide what you will do if participants do not read the chapter/article.

On **February 11**, you will facilitate a 45 minute discussion on this article and issues related to it.
**Pair 2: Facilitating Student Work Discussions**

You will explore student work as a resource to help you and your colleagues learn. Teachers have access to written student work on a daily basis but they rarely have the opportunity to discuss it with colleagues. You are the facilitator for this discussion.

Select (at least) 2 problems that you would like your colleagues to try with their class (at least 5 students). You may want to provide several versions of the problem (e.g., multiple number choices) to accommodate multiple grade levels. You should also try the problems with your students. On **February 4**, please bring copies of the problems for your colleagues (and instructor).

Consider how you would facilitate a discussion focused on student work related to these problems, and what your colleagues’ responses might be. Think about questions to pose or activities to engage your colleagues with related issues. Consider whether you want your colleagues to sort their student work in some way before arriving. Decide what you will do if participants do not bring student work (or do not sort their student work if you make that request.)

On **February 18**, you will facilitate a **45 minute** discussion focused on the student work your group collects and issues related to it.

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**Pair 3: Facilitating Video Discussions**

You will explore video as a resource to help you and your colleagues learn. Video can be an effective catalyst for discussion but different people often focus on different components of a video. Therefore, a facilitator is critical for ensuring that a discussion is productive. You are the facilitator for this discussion.

Select a few videos that have not been viewed and discussed as part of the masters program. You may select video from the searchable CD you purchased at the beginning of the masters program or you may use any other video source. You may even use video you shot for your research project. If you are having trouble finding a video, please see one of us. On **February 4**, please specify your technology needs (DVD player, or computer and projector to show a CD).

Consider how you would facilitate a discussion about this video, and what your colleagues’ responses might be. Think about questions to pose or activities to engage your colleagues with related issues. Consider supplementing the discussion with student work or stories or asking participants to engage in mathematical or scientific tasks.

On **February 25**, you will facilitate a **45 minute** discussion on this video and issues related to it.
ALL Pairs: Facilitation Write-Up

By the end of the February 25 class, we will have discussed facilitation issues related to 4 types of professional development activities: engaging in mathematical or scientific tasks (Feb 4), discussing articles/chapters (Feb 11), analyzing written student work (Feb 18), and watching video (Feb 25). For March 3, write a 3-4 page paper about what you have learned.

In particular, comment on the following:

1. Think about the discussion you facilitated:
   a. Briefly describe what happened during your discussion (no more than one page)
   b. What worked well?
   c. What was a struggle?
   d. What is (at least) one thing you would do differently next time?

2. Think about facilitating all four types of professional development activities
   a. What is similar when considering how to facilitate these 4 types of activities?
   b. What is different when considering how to facilitate these 4 types of activities?
      (Be sure to identify at least one unique issue for each of the 4 types of activities.)

** If you shared video, please be sure to submit a copy of the video that you used. Please also submit copies of any written student work that you think I will need to understand your write-up.
The purpose of this assignment is to give you the opportunity to share your expertise in mathematics or science education with your colleagues. Students from past cohorts have found this experience to be one of the most beneficial of the program.

You will design and implement a presentation about some topic in mathematics or science education. This presentation may be made to the entire faculty of your school, to a subset of that faculty, to administrators, to parents, or to some other group. **You should present to at least 3 people.** For your topic selection, you should first consider sharing an aspect of your research project that your audience would find interesting or novel. However, you may also select as a topic something that you learned from another part of the program. (We need to approve any topic that is not your research project). This presentation must be original — in other words, if you typically make presentations, you may not use your typical presentation to satisfy this requirement.

You may design and deliver your presentation alone or with your project partner. Even if you present together, your write-ups must be separate. You will need to identify your topic, audience, and presentation date by **March 10.**

For your presentation you should prepare:
- an outline (including your goals, key ideas, and activities), and
- a handout that you will give to each audience member

After you have delivered your presentation, you should write a **two-page reflection** about the experience, including what went well and what you might do differently next time. If you are an experienced presenter, please be sure to also comment on the similarities/differences of presenting your own research versus your usual presentation content.

**What to turn in**

**March 10 – Please turn in:**
- your target audience
- your topic (either your research project topic or something else you learned in the program)
- proposed date for your presentation (which must be before May 7)

**April 28 (or any time earlier) – Please turn in:**
- your presentation outline
- your two-page reflection
- a copy of any handouts you gave to the audience

**NOTE:** If you and your project partner present together, then you should each write a two-page reflection, but you may turn in the same presentation plan, outline, and handouts.
Professional Changes
Write-up Due: April 7

This assignment is designed to help you reflect on how your teaching practice has changed since you began the masters program. At the beginning of the program, you wrote about your teaching practice (in response to several prompts) and then you put your responses in sealed envelopes addressed to yourself. It is time to open the envelopes! First, however, you will respond to these same prompts in the March 24 class.

Compare and contrast your two responses and write about your reflections.

What to turn in

In your write-up (3-4 pages), you should:

a. Compare your two responses. Describe how this comparison reflects ways you think you have grown.

b. If you think you have grown in ways not reflected in your responses, please share those reflections as well.

c. Good teachers are always growing, and we are interested in understanding in what ways you would like to continue growing. Identify how you hope your responses would be different two years in the future. Please be as specific as possible.

** If you feel comfortable sharing your two responses to the prompts with us, we would be interested in reading them, and you can attach them to your write-up. If, however, you would prefer to keep your responses private, that is perfectly fine, and you only need to turn in your write-up.
Congratulations! You have almost finished your MA project and degree. Soon it will be time to show off all your hard work to other students, faculty, family, friends, and each other. We will have a poster session during class on Wednesday, May 11, 2016 (Room to be determined). Please bring your draft posters and presentations to class on April 28 and May 2. You will have an opportunity to practice your presentation and get feedback from your colleagues.

Each pair will need to create a poster that has 2-3 panels with each panel consisting of at least 22 inches by 28 inches of poster board. On the panels, you should provide a summary of your project such as:

- the title of the project and your names,
- your project rationale,
- a few key references from your literature review,
- an outline of what data you collected,
- a few sample data collection items/instruments,
- highlights of what you found with a few pieces of supporting evidence, and
- implications or recommendations based on your findings.

Note: There is not a single right way to make a poster. However, you should not simply write a shortened paper and paste it onto the poster board. The goal of a poster is that a person can come to your poster, look at it for a few minutes, have a general sense of what happened in your project, and consider some of your more interesting findings. The poster should serve as a catalyst for that person to ask you questions. Therefore, you should use large fonts and maybe bullets, graphs, etc.

We will view some sample posters in class, but it might be helpful to think about your poster this way: You will be viewing 10 other posters – what would you like to see?

During the poster session, the format for that night will be:

1. Each group will have 3 minutes to provide an overview of their project and findings. The goal is to entice others to come visit their poster! On April 28 and May 2, we will discuss and practice these overviews.

2. Each group will share a poster to showcase their work. During this part of the evening, you will stay by your poster in order to answer questions from interested visitors! There will also be some time for you to visit the other projects’ posters.