

EDU/GEL 183
Spring Quarter 2018 Syllabus

Lecturer
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1. TOPICAL OUTLINE

The MAST III (Math and Science Teaching) seminar is designed for 3rd and 4th year students and focuses on teaching practices in high school science and math classrooms. Students in the course will be placed with a high school teacher and spend 3 hours per week, for ten weeks, in his or her classroom. Through selected readings, seminar discussion, and field experience, students will explore and experience what it means to teach science or math. They will present opening and closing activities, go over homework, lead a lab, prepare and analyze a quiz, practice questioning techniques, and explore the CA State Standards for math and science.

Community Norms

All voices are welcomed, encouraged and respected in this space.

| | |
|--------------------|--------------------------------------|
| Reflect | Think before you speak. |
| Empower | Empower yourself and others. |
| Share ² | Share your voice and space. |
| Push | Participate until something happens. |
| Elmo | Enough, let's move on. |
| Confidentiality | Share the knowledge, not the story. |
| Tech Check | Be mindful; be present. |

Outline by week (subject to change):

Session 1

- Introduction & Information on course requirements and logistics
- First look at the CA State Teaching Standards: New Generation Science Standards and Common Core

Due 4/10: Assignment. Enter the assignment into the assignment section on Canvas. 400 words maximum.

- Develop a **goal plan** of what you want to accomplish during your internship: What are your goals, and how are you planning to implement them? **Due Wednesday 4/10 on Canvas.** Maximum 1 page, can be in form of a bulleted list.
- **Goal Summary due Wednesday 6/6, week 10, on Canvas.** In this document you will reflect on your accomplishments and failures. Maximum 1 page.

Due 4/17: Assignment. Enter the assignment into the assignment section on canvas. 400 words maximum.

- **Every Minute Counts: Making your math class work:** Write a **short** reflection (max. 250 words) about this very handy companion. How do the math classrooms **you** attended during your high school career differ from David Johnson's classroom? How were they the same?

This week in your internship:

Option 1

You will be primarily observing this week. Ask for a seating chart so that you can memorize names. When appropriate, walk around and help students informally. Write down your thoughts about your class room: was learning going on, was teaching going on, was the teacher in control of the class room, did anything extraordinary happen?

Option 2

State that you did not visit the school yet and why. I know that not everyone will meet their mentor teacher on week. If you did not visit your school yet, please write about three things you hope to see happen in a classroom. What should a good math lesson look like? What should a good science lesson look like?

Record your reflections on canvas by Sunday 11:59 pm.
Record your hours on CalTeach.

The length of either entry should be about 250 words.

Session 2

- NGSS – Susann Pinter
- Common Core – Mary-Betty Stevenson

Due 4/17: Assignment. Enter the assignment into the assignment section on Canvas. 400 words maximum.

- Teach like a Champion 2nd edition:
 - Read Introduction, p.1-22 and chapter 11: Reflection and practice: q. 1-4, p.421
- Teach like a Champion 2nd edition: Read chapters 4 and 5. READ ONLY. You need to read this information to be able to create a meaningful lesson plan! No writing assignment associated with chapter 4 and 5.

Due 5/2: Assignment due as hard copy in class

- **Download from Canvas: Teacher Observation Protocol.** Choose one of your intern classes and complete the teacher observation protocol. The protocol must be typed, the pdf is fillable. **Due session 4 (2/25) as a hard copy in class.**

This week in your internship:

Option 1: Continue to work with students individually. Practice analyzing their errors and guide them to understanding. When they say, “I can’t do this problem, help them discover what part of the problem they can’t do: set up the equation, choose a formula, use the formula, ...

Option 2: If this is your first time in your intern classroom, ask for a seating chart so that you can memorize names. When appropriate, walk around and help students informally. Write down your thoughts about your class room: was learning going on, was teaching going on, was the teacher in control of the class room, did anything extraordinary happen?

Record your reflections on Canvas by Sunday 11:59 pm
Record your hours on CalTeach

Session 3

- Developing a positive classroom environment (Classroom Management)
 - Behavioral expectations and accountability
- Lesson Planning
 - Together with a partner, develop a lesson plan to present to your peers during peer evaluation. As partners, decide what topic you want to choose and the grade level, any grade level 9 -12 is appropriate. Peer evaluations will be done in class in weeks 6 and 7. Use the New Science Generation Standards and the Common Core State Standards as your guide. You can find those online on the class homepage on Canvas
 - Download the appropriate lesson plan template from canvas: science students download the **NGSS** template and math student download the **Common Core** template. Use these templates to complete your lesson plan. **First draft of your lesson plan as a hard copy is due in class session 6. Please bring 3 copies. Peer evaluations will start session 6 and continue session 7.** Your revised lesson plan (based on the peer reviews) is due session 8 as a hard copy.

Due 4/24: Assignment. Enter the assignment into the assignment section on canvas. 400 words maximum.

- Teach like a Champion 2nd edition: Read chapter 10, Reflection and practice q. 1, p. 377

This week in your internship: By now you should know some of the students’ names. Greet students at the door. Take a more active role helping students. Watch how your teacher handles classroom management and how she/he tries to create a positive classroom environment.

Record your reflections on Canvas by Sunday 11:59 pm
Record your hours on CalTeach

Session 4

- Styles of teaching:
 - Using tops as a teaching tool
 - Pros and cons of various teaching styles

Due 5/1: Assignment. Enter the assignment into the assignment section on canvas. 250 words maximum

- [Teach like a Champion 2nd edition](#): Read chapter 3: Reflection and practice q. 1 page 125

This week in your internship: During the 4th week of your internship, pay close attention to the styles of teaching that your mentor teacher uses. Does there seem to be a pattern to when he/she uses a particular style?

ALSO: Coordinate with your mentor teacher a portion of the lesson that you can handle one day *in the near future*. (perhaps, going over homework or presenting a sample problem.).

Record your reflections on Canvas by Sunday 11:59 pm

Record your hours on CalTeach

Session 5

- Technology
 - Assembling a PhET lesson

Due 5/9; Assignment due as a hard copy

- Develop a PhET lesson. Download the directions from canvas. **Hard copy of PhET lesson is due in class session 6.**

This week in your internship: During the 5th week of internship, pay attention to what kind of technology is used in the classroom: is any technology used? is none used? is the technology used wisely or is it unnecessary?

Record your reflections on Canvas by Sunday 11:59 pm

Record your hours on CalTeach

Session 6

- Engaging the learner:
 - Questioning techniques
 - Cold calling vs wait time
- Lesson plan peer evaluations start

Due 5/15: Assignment. Enter the assignment into the assignment section on canvas. 400 words maximum.

- [Teach like a Champion 2nd edition](#): Read chapter 7 and respond to the prompt below:
Compare and contrast the technique of “cold call” and “wait time”. Do you prefer one or the other? What are the benefits and draw backs of both these techniques?

This week in the internship: During week 6 of your internship, pay close attention to what *students* are doing during each part of the lesson. When do they seem most engaged? When do they seem to “tune out?”

Record your reflections on CalTeach and Canvas by Sunday 11:55 pm.

Record your internship hours on CalTeach.

Session 7

- Assessment: purpose and logistics
 - Ways to check students for understanding
 - Helping students identify what they don't understand
 - Using student mistakes to guide instruction
- Lesson plan peer evaluations continue

Due 5/22: Assignment. Enter the assignment into the assignment section on canvas. 400 words maximum.

- [Teach like a Champion 2nd edition](#): Read chapter 1 and 2 Reflection and Practice question 2 & 3. p. 80

This week in the internship: During the 7th week of internship, reflect on how your mentor teacher uses/has used assessment. Is it continual? Is it formal or informal? What kind of information is gained from the assessment? How does he/she use the information she gains?

Record your reflections on CalTeach and Canvas by Sunday 11:55 pm.
Record your internship hours on CalTeach.

Session 8

- Science: Shifting a lesson from traditional to inquiry
- Math: TBA

Due 5/29: Assignment.

- [Teach like a Champion 2nd edition: Read chapter 12](#), Reflection and Practice question 2. p 446

Due 5/30: Assignment

- **Shifting a lesson (refer to handout in class): due session 9 in class as a hard copy**

This week in your internship: Before you go to your internship this week, email your teacher and ask about ELL (English Language Learner) students in your classroom. If there are any ELL's, notice what challenges they encounter during class time. How does the teacher support these students? Are there other ways these students have their needs met? If not, what did you observe?

Record your reflections on CalTeach and Canvas by Sunday 11:55 pm.
Record your internship hours on CalTeach.

Session 9

- Number Talk and other Mathematics Learning Strategies

Due 6/5: Assignments:

- [Teach like a Champion 2nd edition: Read chapter 6](#), no writing assignment

Due 6/6: Assignments:

- **Goal Summary due Wednesday 6/6, week 10, on Canvas.** In this document you will reflect on your accomplishments and failures. Maximum 1 page.

This week in the internship: You are almost done. During the 9th week of your internship, continue to work with students individually. Practice analyzing their errors and guide them to understanding. When they say, "I can't do this problem, help them discover what part of the problem they can't do: set up the equation, choose a formula, use the formula.

Record your reflections on CalTeach and Canvas by Sunday 11:55 pm.
Record your internship hours on CalTeach.

Session 10

- Number Talk continued
- Closure
- Informal question/answer period

This week in the internship: During the 10th week of internship, continue to take an active role in the class, but also take time to reflect on the experience as a whole. What characteristics of the mentor teacher would you like to emulate? Which would you do differently? Include these in your reflections.

Record your reflections on CalTeach and Canvas by Sunday 11:55 pm.
Record your internship hours on CalTeach

Final

There will be a take home final. It will be posted Wednesday June 6th on Canvas. It is due Wednesday June 13th on Canvas

2. READINGS

Readings are selected from the following books:

- *Every Minute Counts. Making Your Math Class Work.* Johnson, David (**BOOKSTORE or amazon**)
 - *Mathematics Framework for CA Public Schools K-12*, CA Department of Education; Sacramento, 2006
Download from: <http://www.cde.ca.gov/be/st/ss/documents/ccssmathstandardaug2013.PDF>
 - *New Generation Science Standards.* Download from
<http://www.nextgenscience.org/sites/default/files/NGSS%20DCI%20Combined%2011.6.13.pdf>
 - *Teach like a Champion*, Doug Lemov, 2nd edition, (**BOOKSTORE or amazon, amazon is cheaper!**)
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3. GRADING PERCENTAGES

30% 10 Reflection papers, max. 200 words each (always due each Sunday at 11:55 pm on Canvas):

- 10 pts. on time + exceptionally well done + exceptional professional writing + **description** of the lesson and **reflection** are submitted + writing prompt is observed
- 8 pts. only ok done but not outstanding, otherwise all other criteria are met
- 7 pts. 1- 2 days late and/or lesson description missing, and/or writing prompt not observed
- 6 pts. Over three days late, badly done or too short
- 0 pts. Not turned in

What is a reflection paper?

The weekly reflection consists of a brief description of the lesson/s you engaged in **AND** a reflection that addresses the weekly reading prompt.

30% Intern participation includes:

- Goal plan
- Summary goal plan
- 30 hrs. of verified internship
- Mentor teacher evaluation
- Observation log

20% Assignments include:

- Assignments with the associated reading (due always the following Tuesday 11:55 pm on canvas in the assignment section)
- Lesson plan
- PhET activity
- Shifting a lesson

10% Seminar participation & preparedness: Participation is an essential part of the course. Participation means listening as well as speaking, expressing your own thoughts in whole and small group discussions, and helping others develop their ideas. Participation also includes making every effort to arrive to class **on time** and using electronic devices only for course-related purposes.

A until I notice...

- Always late
- Lack of participation
- Non-class use of technology (e.g. phone use)
- Generally disengaged

10% final paper

4. ATTENDANCE

Attendance is **required** and will be taken every session. You are allowed to miss **one** session. If you are missing more than one session, your final grade will be **reduced by one full grade**. If there are extenuating circumstances, please let me know immediately, so we can make alternative arrangements.

5. JUSTIFICATION FOR UNIT(S) OF CREDIT

This course will meet for 2 hours of lecture/discussion each week and 3 hours of fieldwork in a public high school classroom each week. During discussions, basic concepts of teaching a math and science class will be introduced and the CA State Standards for math and science will be examined. Students will prepare and present various components of a lesson including: opening activities, closing activities, presenting a new concept, writing and analyzing a quiz, review, and classroom management.

6. ADDITIONAL INFORMATION FOR STUDENTS:

This course places students in high school classrooms in Davis, Dixon, Woodland, Winters, Vacaville and West Sacramento.