

**EDU/GEL 183**  
Winter Quarter 2018 Syllabus  
EPS room 1317

Lecturer  
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**1. TOPICAL OUTLINE**

The EDU/GEL 183 (Math and Science Teaching) seminar is designed for 3<sup>rd</sup> and 4<sup>th</sup> 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 (Common Core) and science (New Generation Science Standards-NGSS).

**Outline by week (subject to change):**

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**Session 1, 1/10**

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

***Due 1/17: Assignment***

- 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 1/17 on Canvas.**
- **Goal Summary due Wednesday 3/14 on Canvas.** In this document you will reflect on your accomplishments and failures. Maximum 1 page.

***Due 1/23: Assignment***

- Every Minute Counts: Making your math class work: Write a **short** reflection (max. 300 words) about this very handy companion. How do the math classrooms **you** attended in high school (as a high school student) differ from David Johnson’s classroom? How were they the same?

**This week in your internship:**

**Option 1:** If you are lucky enough to visit into your classroom already, observe what the students are doing and how the teacher is teaching. Ask for a seating chart so that you can memorize names. When appropriate, walk around and help students informally. In your reflection write about your first impressions of your classroom experience.

**Option 2:** Not everyone will be able to meet their classroom on week 1. In your reflection, 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? State that you did not visit the school yet.

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

**The length of either entry should be about 250 words.**

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**Session 2, 1/17**

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

***Due 1/30: Assignment***

- Teach like a Champion 2<sup>nd</sup> edition:
  - Read Introduction, p.1-22 and chapter 11: Reflection and practice: q. 1-4, p.421
- Teach like a Champion 2<sup>nd</sup> edition: Read chapter 4 and 5. You need to read this information to be able to create a meaningful lesson plan next week! (no writing assignment associated with chapters 4 and 5)
- **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 a fillable form. **Due session 5 (2/7) as a hard copy in class.**

### **This week in your internship:**

**Option 1 for students who already met their classroom:** Continue to walk around and help students informally.

**Option 2 for students who met their classroom for the first time:** Observe what the students are doing and how the teacher is teaching. Ask for a seating chart so that you can memorize names. When appropriate, walk around and help students informally. In your reflection write about your first impressions of your classroom experience

- Reflect on your experience and record your reflection on Canvas by Sunday 11:55 pm.
- Record your internship hours on CalTeach.

### **Session 3, 1/24**

- Developing a positive classroom environment (Classroom Management) (8:00 – 9:00)
  - Behavioral expectations and accountability
- Lesson planning (9:00 – 9:50)

#### **Due 1/30: Assignment**

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

Together with a partner, develop a lesson plan to present to your peers in a peer evaluation session. As partners, decide what topic you want to present and the grade level. Peer evaluations will be done in **week 6 and 7**. Use the New Science Generation Standards and the Common Core State Standards as your guide. You can find these online. 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. **Lesson plan hard copy is due in class session 6 and on Canvas as an uploaded file. Peer evaluations will start session 6 and will continue in session 7.** Revisions of your lesson plans based on the peer reviews will have to be made and are due **session 8** as you final lesson plan submission.

**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 mentor teacher handles classroom management.

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

### **Session 4, 1/31**

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

#### **Due 2/6: Assignment**

- Teach like a Champion 2<sup>nd</sup> edition: Read chapter 3: Reflection and practice q. 1 p. 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?

Try to 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 CalTeach and Canvas by Sunday 11:55 pm.
- Record your internship hours on CalTeach

### **Session 5, 2/7**

- Technology
  - Assembling a PhET lesson

**Due 2/13; Assignment**

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

**This week in your internship:** During the 5<sup>th</sup> 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 CalTeach and Canvas by Sunday 11:55 pm.
  - Record your internship hours on CalTeach.
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**Session 6, 2/14**

Engaging the learner:

- Questioning techniques
- Cold calling

Lesson plan peer evaluations start

**Due 2/20: Assignment.**

- [Teach like a Champion 2<sup>nd</sup> 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:** 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.
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**Session 7, 2/21**

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

**Due 227: Assignment.** Enter the assignment into the assignment section on canvas.

- [Teach like a Champion 2<sup>nd</sup> edition: Read chapter 1 and 2:](#) Reflection and Practice question 1, p. 125

**This week in the internship:** During the 7<sup>th</sup> week of your 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.
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**Session 8, 2/28**

- Science: Shifting a lesson from traditional to inquiry (Susann Pinter)
- Math: teaching techniques in mathematics (Mary-Betty Stevenson)

**Due 3/6: Assignment.**

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

**This week in your internship:** Before you go to your placement this week, email your mentor teacher to ask who the ELL (English Language Learner) students are in your class and observe one or two ELLs in your placement classroom. What challenges do they have with today’s lesson? How does the teacher support them? Are there other ways they 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.
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## Session 9, 3/7

- Number Talk and other Mathematics Learning Strategies

*Due 3/13: Assignments:*

- [Teach like a Champion 2<sup>nd</sup> edition: Reading chapter 6: read only](#)
- **Goal Summary due Wednesday 4/14, session 10, on canvas.** In this document you will reflect on your accomplishments and failures. Maximum 1 page.

**This week in your internship:** During the 9<sup>th</sup> week of your internship, pay close attention to the objective of each lesson. Is it clear to you? To the students?

- Record your reflections on CalTeach and Canvas by Sunday 11:55 pm.
  - Record your internship hours on CalTeach.
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## Session 10, 3/14

- Continue Number Talk and other Mathematics Learning Strategies
- Closure
- Informal discussion period

**This week in the internship:** During the 10<sup>th</sup> 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.
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## Final Exam

- **There will be a take home final. It will be posted on Canvas Wednesday 3/14. It is due Wednesday 3/21.**
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## 2. READINGS

**Readings are selected from the following books:**

- *Every Minute Counts. Making Your Math Class Work.* Johnson, David (**UCD 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! Here is the url: [https://www.amazon.com/Teach-Like-Champion-2-0-Techniques/dp/1118901851/ref=sr\\_1\\_1?ie=UTF8&qid=1511891370&sr=8-1&keywords=teach+like+a+champion+2.0](https://www.amazon.com/Teach-Like-Champion-2-0-Techniques/dp/1118901851/ref=sr_1_1?ie=UTF8&qid=1511891370&sr=8-1&keywords=teach+like+a+champion+2.0)**)
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## 3. GRADING PERCENTAGES

**30% 10 Reflection papers, between 300 – 500 words each (always due each Sunday at 11:55 pm on Canvas):**

- 10 pts. on time, well done, **description and reflection** are both submitted, prompt is observed
- 7 pts. ok done and/or description is missing and/or 1-2 days late and/or prompt is not observed
- 6 pts. Over 3 days late, badly done and/or too short and/or description is missing and/or prompt is not observed
- 0 pts. Not turned

**30% Intern participation includes:**

- Goal plan
- Summary goal plan
- 30 hrs. of verified internship
- Mentor teacher evaluation on intern verification sheet
- Classroom observation protocol

**20% Assignments include:**

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

**10% Seminar participation & preparedness**

it is an A until I notice....

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

**10% final paper (take home final)**

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**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 other 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 Sacramento.