

**San José State University**  
**College of Science/Science Education Program**  
**SCED 375 Seminar in Science Education, Fall 2020**  
**Co-Listed with 184 Y/Z Science Student Teaching**

**Course and Contact Information**

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Classroom:	Online

**Course Description**

Resources and innovations for science curriculum development and instruction. An interface with people and facilities which can enhance Bay Area science instruction. Co-requisite: SCED 184Y or SCED 184Z.

**Traditional student teachers**, for 184YZ, will work with one or two mentor teachers at the middle or high school level and with a university supervisor, assuming full responsibility for two classes involving two preparations.

Teacher candidates should begin their duties quickly. The exact schedule for taking over the classes will be worked out with the mentor teacher(s). Generally, teacher candidates observe for one week before taking full responsibility for the first class, and by the end of the second week they assume lead teaching in the second class. As soon as possible, teacher candidates must be completely responsible for creating unit and daily lesson plans, handling classroom procedures, managing classroom behavior issues, assessing student work, and completing grading documents. At the earliest possible time, students should recognize their teacher candidate as the teacher in charge. However, teacher candidates need the continued guidance of their mentor teachers and should debrief with mentor teachers regularly to discuss observations and concerns.

Teacher candidates must be on campus one prep period for each class taught (normally a total of four periods per day). Additionally, the traditional student teacher must also complete two weeks of full day schedules as part of his/her Phase II/III assignment —this can be co-teaching or some variation of a full day's schedule. To accommodate this requirement, teacher candidates & mentor teachers should start early in the semester to plan when and how the teacher candidates will assume responsibility for the additional classes for this two-week period.

**Note:** Because SCED 375: Seminar in Science Education is the support class for the Phase II/III student teaching, the specific course learning outcomes include all California Teacher Performance

Expectations. Teacher candidates are assessed on all the TPEs in the Formative and Summative Evaluations completed by mentor teachers/on-site evaluators (for interns) and university supervisors for the 184Y/Z portion of the course.

### **Course Learning Outcomes (CLO)**

This seminar is designed for you as a Phase II/III student teacher or intern, to support and assist you with your teaching experiences. This seminar will support you by:

- (1) extending your understanding of major ideas and emphases developed in your methods classes, especially Science Methods 173.
- (2) contributing to meeting the Teaching Performance Expectations (TPE), Standards of Quality and Effectiveness for Professional Teacher Preparation Programs.
- (3) contributing to your completion of CalTPA.
- (4) providing a forum for discussion of issues related to your classroom experiences. The salient features of California Teaching Performance Expectations (TPE) are:
  - Engaging and Supporting All Students in Learning
  - Creating and Maintaining Effective Environments for Student Learning
  - Understanding and Organizing Subject Matter for Student Learning
  - Planning Instruction and Designing Learning Experiences for All Students
  - Assessing Student Learning
  - Developing as a Professional Educator

This seminar will help guide you through many challenges you will face as you grow into a strong and effective teacher and prepare you for our vocation, which demands constant renewal of mind, heart, spirit and skills.

Upon successful completion of this course, students will be able to:

Engage and support all students in learning by designing and implementing effective instructional strategies that promotes critical thinking and inquiry and is aligned to Next Generation Science Standards. (TPE1, TPE4, TPE3)

Create and maintain effective learning environments that promote self-directed learning. (TPE 2)

Assess student learning through a variety of formal and informal assessment strategies and modify instruction accordingly. (TPE5)

Reflect on successes and areas of improvement regarding daily teaching practice, long term planning and demonstrate willingness to seek and receive constructive criticism. (TPE6)

### Primary TPE's Addressed in SCED375

#### **TPE 1: Engaging and Supporting All Students in Learning**

**2.** Maintain ongoing communication with students and families, including the use of technology to communicate with and support students and families, and to communicate achievement expectations and student progress.

**4.** Use a variety of developmentally and ability-appropriate instructional strategies, resources, and assistive technology, including principles of Universal Design of Learning (UDL) and Multi-Tiered System of Supports (MTSS) to support access to the curriculum for a wide

range of learners within the general education classroom and environment.

5. Promote students' critical and creative thinking and analysis through activities that provide opportunities for inquiry, problem solving, responding to and framing meaningful questions, and reflection.

8. Monitor student learning and adjust instruction while teaching so that students continue to be actively engaged in learning.

### **TPE 2: Creating and Maintaining Effective Environments for Student Learning**

6. Establish and maintain clear expectations for positive classroom behavior and for student-to-student and student-to-teacher interactions by communicating classroom routines, procedures, and norms to students and families.

### **TPE 3: Understanding and Organizing Subject Matter for Student Learning**

2. Use knowledge about students and learning goals to organize the curriculum to facilitate student understanding of subject matter, and make accommodations and/or modifications as needed to promote student access to the curriculum.

4. Individually and through consultation and collaboration with other educators and members of the larger school community, plan for effective subject matter instruction and use multiple means of representing, expressing, and engaging students to demonstrate their knowledge.

7. Model and develop digital literacy by using technology to engage students and support their learning, and promote digital citizenship, including respecting copyright law, understanding fair use guidelines and the use of Creative Commons license, and maintaining Internet security.

### **TPE 4: Planning Instruction and Designing Learning Experiences for All Students**

4. Plan, design, implement and monitor instruction, making effective use of instructional time to maximize learning opportunities and provide access to the curriculum for all students by removing barriers and providing access through instructional strategies that include:

- appropriate use of instructional technology, including assistive technology;
- applying principles of UDL and MTSS;
- use of developmentally, linguistically, and culturally appropriate learning activities, instructional materials, and resources for all students, including the full range of English learners;
- appropriate modifications for students with disabilities in the general education classroom;
- opportunities for students to support each other in learning; and
- use of community resources and services as applicable. Required Texts/Readings

6. Access resources for planning and instruction, including the expertise of community and school colleagues through in-person or virtual collaboration, co-teaching, coaching, and/or networking.

7. Plan instruction that promotes a range of communication strategies and activity modes between teacher and student and among students that encourage student participation in learning.

### **TPE 5: Assessing Student Learning**

1. Apply knowledge of the purposes, characteristics, and appropriate uses of different types of assessments (e.g., diagnostic, informal, formal, progress-monitoring, formative, summative, and performance) to design and administer classroom assessments, including use of scoring

rubrics.

2. Collect and analyze assessment data from multiple measures and sources to plan and modify instruction and document students' learning over time.
3. Involve all students in self-assessment and reflection on their learning goals and progress and provide students with opportunities to revise or reframe their work based on assessment feedback.
5. Use assessment information in a timely manner to assist students and families in understanding student progress in meeting learning goals.

### **TPE 6: Developing as a Professional Educator**

1. Reflect on their own teaching practice and level of subject matter and pedagogical knowledge to plan and implement instruction that can improve student learning.
2. Recognize their own values and implicit and explicit biases, the ways in which these values and implicit and explicit biases may positively and negatively affect teaching and learning, and work to mitigate any negative impact on the teaching and learning of students. They exhibit positive dispositions of caring, support, acceptance, and fairness toward all students and families, as well as toward their colleagues.
4. Demonstrate how and when to involve other adults and to communicate effectively with peers and colleagues, families, and members of the larger school community to support teacher and student learning.
5. Demonstrate professional responsibility for all aspects of student learning and classroom management, including responsibility for the learning outcomes of all students, along with appropriate concerns and policies regarding the privacy, health, and safety of students and families. Beginning teachers conduct themselves with integrity and model ethical conduct for themselves and others.

### **Textbook**

Keeley, Page. *Science Formative Assessment. 75 Practical Strategies for Linking Assessment, Instruction, and Learning*. Corwin, a SAGE Company, 2016. ISBN: 978-1483352176 Available for purchase through Amazon.com or NSTA.org

Willard, Ted. *The NSTA Quick-Reference Guide to the NGSS, K-12*. NSTA Press, National Science Teachers Association, 2015. ISBN: 978-1941316108 Available for purchase through Amazon.com or NSTA.org

### **Other Readings**

Additional reading will be provided via Canvas.

### **Course Requirements and Assignments**

**Readings and Class/Online Discussions:** To provide guidance, support, and a context for reflecting upon their teaching experiences, students will be expected to complete reading and written assignments and to participate in class discussions.

### **Written Assignments**

1. **Parent Introduction Letter** that describes your approach to teaching, your educational/professional background and your participation in the SJSU credential program (TPE 1.2, 2.5,2.6)

2. **Opening/Closing Video** that demonstrates effective use of instructional time and appropriate engagement strategies. (TPE 4.4)
3. **CalTPA Lesson Ideas** for peer editing and discussion (TPE 3.4, 4.6)
4. **Formative Assessment Strategy Share-out and Reflection** (TPE 5.1, 6.1)
5. **Technology Share-out** (TPE 3.7)
6. **Two Veteran Teacher Observations** (TPE 6.1)
7. **Summative and Formative Self-Assessment of TPEs** (all TPE's)
8. **Two-week Full-time Teaching Experience** (All TPE's)
9. **CalTPA Tasks as Outlined below:**

### I. Step 1: Plan

1. Provide contextual information about one class you are teaching; Evidence submitted: Written Narrative: Contextual information – (1.1)
2. Develop a plan for a series of lessons and complete the Learning Segment Template that includes
  - Learning goal(s) and objective(s) – (3.1, 3.3)
  - Description of assessments (informal assessment, student self-assessment, and formal assessment of learning) – (5.1, 5.2, 5.3, 5.5)
  - Learning activities and instructional strategies, including how you will develop academic language -- (1.6, 3.5, 5.7)
  - Supports and accommodations – (3.2, 3.5, 4.4, 5.7, 5.8)
  - How each lesson links to prior learning and/or builds on previous lessons – (1.3, 1.4, 3.3)Evidence submitted: Learning Segment Template
3. Describe one of your planned informal assessments, a student self-assessment, and the formal assessment and explain how they are aligned to and measure the content-specific learning goal(s) and objective(s); Evidence submitted: Written Narrative: Assessment Descriptions -- (5.1, 5.2, 5.3, 5.5)
4. Provide a blank copy of the formal assessment and scoring rubric/criteria, including a definition of proficient student performance; Evidence submitted: Blank copy of the formal assessment, Formal assessment rubric and/or scoring criteria

### II. Step 2: Teach and Assess

1. Conduct the instruction and assessment activities in your learning segment
2. Video-record your learning segment. Select 3 clips that include
  - a. instruction and informal assessment and detailed feedback to the whole class (5.1, 5.5)
  - b. instruction and student self-assessment, with detailed feedback to at least 1 student (5.3)
  - c. academic language development (1.6, 3.5, 5.7)
3. Provide 5 types of annotations for the video clips that include a title and a brief rationale for the assessment practices recorded. Annotations include
  - Teaching to specific goals (3.1, 3.2, 3.3, 3.6)
  - Providing content-specific feedback to students (5.1, 5.5)
  - Monitoring student content learning and development of academic language (1.6, 3.5, 5.7)
  - Monitoring student learning and use of higher order thinking (1.8, 3.3)
  - Creating a positive learning environment (1.1, 1.3, 2.3, 3.4, 4.3, 3.6, 4.7, 4.8, 6.1, 6.5)Evidence submitted: 3 annotated video clips
4. Analyze the informal assessment(s) results for the whole class and individual students; Evidence submitted: Written Narrative: Analysis of Informal Assessments

### III. Step 3: Reflect

1. Score the formal assessment results (products, processes, or performances) for the whole class (5.1, 5.2, 5.5)
2. Select 3 examples of student responses (products, processes, or performances) with your feedback from the formal assessment that demonstrate a range of achievement: a response that
  - (a) Exceeds the learning goal(s)
  - (b) Meets the learning goal(s)
  - (c) Does not meet the learning goal(s) with feedback to these students;Evidence submitted: Scored assessments from 3 students that represent evidence of learning (products, processes, or performances) with rubric and/or scoring criteria feedback
3. Analyze student results from the informal and formal assessments used throughout the learning segment; Evidence submitted: Written Narrative: Analysis of Formal Assessment Results and Reflection
4. Reflect on the evidence you observed of student learning and accomplishment of the learning goal(s) and objective(s), and describe what you think you would need to do next for individuals and the whole class

#### **IV. Step 4: Apply**

1. Plan and conduct a follow-up instructional activity based on your analysis of all assessments: either
  - A re-teaching activity with a new instructional approach for students who did not achieve the learning goal(s) and/or objective(s)

**OR**

  - A connecting activity that builds on what your students demonstrated they learned;Evidence submitted: Re-teaching or connecting content-specific activity description — (5.2, 5.8, 6.1,
2. Describe how you decided on your instructional approach in the follow-up re-teaching or connecting activity and how that change was informed by your analysis of assessment results.
3. Video-record the entire follow-up activity and select 1 video clip that demonstrates how you adjusted or built on your instruction based on your analysis of assessment results. Evidence submitted: 1 video clip (no annotations required)
4. Explain how using multiple types of assessment (informal, student self, peer, and formal assessments) has influenced the teaching and assessment decisions you will make for the whole class and individual students as you continue to teach.

#### **Additional Assignments**

Read and follow the requirements delineated in the Student Teacher Handbook – especially pp. 8-20; please access the Handbook at the following link: [http://www.sjsu.edu/secondary/students/student\\_teaching/](http://www.sjsu.edu/secondary/students/student_teaching/) (6.1, 6.5)

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.

#### **Final Examination or Evaluation**

The culminating activity for this course consists of an exit interview during which candidates reflect on teaching and learning experiences from their second semester of student teaching.

## Grading Information

### Determination of Grades

This course is a credit/no credit course. Credit distribution as follows:

Expectations for Candidates—	Dispositions	50%
	Written Assignments	50%

All written work submitted is expected to meet high standards of professional quality in content, style, and use of Standard English. All assignments are to be submitted on or before their due dates/times to be eligible for full credit. Late work will be subject to the following penalties:

0-12 Hours late	75% of full credit
12-48 Hours late	50% of full credit
>48 Hours late	no credit

### Dispositions

Candidates are expected to demonstrate the following professional dispositions while participating in both the SCED 375 class and their own teaching classroom environment:

#### *REFLECTIVENESS*

##### **Indicators:**

- Practices critical questioning
- Is responsive to criticism
- Is responsive to opposing views
- Articulates opposing views
- Examines personal strengths and weaknesses
- Questions own beliefs and practices
- Exhibits flexibility

#### *RESPONSIBILITY*

##### **Indicators:**

- Responds to and complies with obligations
- Oral and written agreements with others
- Coursework/Assignments
- Timeliness
- Engages actively in program experiences

#### *COMMITMENT TO PROFESSIONALISM*

##### **Indicators:**

- Demonstrates ongoing commitment to professional development
- Practices collaboration and collegiality to reach identified goals
- Demonstrates an understanding of the legal obligations of teaching

#### *COMMITMENT TO FAIRMINDEDNESS AND EQUITY*

##### **Indicators:**

- Treats others with equal respect, courtesy, and dignity
- Is intolerant of all forms of harassment, discrimination, and exploitation

- Recognizes the need for differences to ensure equal treatment of all

### **Classroom Protocol**

Students are expected to attend all class meetings. Advance notice of missed class meetings is expected. Students will display professional courtesy by limiting use of technology during class time.

### **University Policies**

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>