

BSSP Physics

PHYS 580: Physics Teaching in Diverse Classrooms

Instructor: Irene
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Grimberg

Office: 401 Linfield Hall **Time:** Two hours a week and one full day once a month

Goals: To facilitate a learning community of teachers supporting the learning and teaching of Physics through inquiry, and the integration of Native American knowledge.

Description: Teachers enrolled in the BSSP program will participate in monthly face-to-face and online discussions about Physics topics, integrating Native American knowledge, and inquiry-based instruction; and reflect on their own teaching practice.

BSSP Physics online includes the completion of NSTA's SciPacks and bi-weekly modules. The topics of the modules will expand the hands-on approach of the face-to-face monthly meetings. Each online module consists of:

1. **Description:** Each module will focus on the topics presented in the preceding face to face academy. In a module you will find:
 - 1) Two activities to be completed in the online public discussion section,
 - 2) Additional Resources; age appropriate online activities for your classroom
 - 3) A section on inquiry-based instruction to be discussed in the public area.

2. **Readings and Additional Resources:** Background information will be utilized for the online discussions of the activities. It may be helpful for you to collect the resources in a portfolio folder to assist you in future teaching.

3. **Discussions:** Each module will have assigned a discussion "Topic". The "Discussion" will be organized in section called "Module 1; Activity 1", "Module 1: Activity 2", etc.... When the time of a module is over, after two weeks, the discussion section and the module will be archived. Once archived, you will have access to read the discussions, but not to post.

In the online discussions, students are expected to:

- **Read the assigned reading and complete the discussion question and/or activity thoughtfully and thoroughly.**

- **Post your response as early as possible to provide ample time for others to respond to your posting.**
- **Read as much as you can of the discussion postings, not just the discussions responding to your posting. The discussion area is our “learning community” and it is important to follow the discussion threads as they represent the ideas and contributions of everyone. Lack of participation affects everyone in the class.**
- **Actively ENGAGE in the discussions throughout the week. At least try to answer to one of your colleagues. You might want to visit the discussion area at least twice a week. Posting your discussions “at the last minute” is not desirable because neither your colleagues nor the instructors can engage in a discussion with you.**

E-mail will be available through Desire2Learn. You can communicate with all online participants privately using desire2learn platform; so please check regularly your Desire2Learn e-mail, located under the Communication area.

Feedback and summaries: Instructor’s summaries and feedback on the module discussions and activities will be included in the discussion section of the Module/Activity, few days before is archived.

Schedule of Face-to-face and Online BSSP Physics

Time	Topic	Modality and Tasks
January 11 – January 25		Online Module 6: Review of light, motion, forces, and energy
January 22-23	Thermodynamics	Face-to-face: Hands on activities on temperature, heat and thermal energy Native American connection: Sweat lodges Pedagogy: Good science teaching part 1, lesson design
January 25 – February 8		Online SciPacks: Thermal energy, heat and temperature Online Module 7: Heat conduction
February 8- February 22	Electricity and Magnetism	Online Module 8: Electric and magnetic forces
February 22 - March 8		Online Module 9: Electrodynamics: circuits and electromagnets
March 6		Face-to-face: Hands on activities: electric circuits Native American connection: Sources of energy in the reservation land Pedagogy: Good science teaching part 2, lesson implementation
March 8 – March 22	EM Waves and mechanical waves	Online Module 10: EM waves and sound waves Online SciPacks: Characteristics of light waves
March 22-March 29	Buoyancy	Online Module 11: Density, mass, volume
April 10	EM Waves and mechanical waves	Face-to-face: Hands on activities light and sound Native American connection: Drumming Pedagogy: Good science teaching part 3, classroom culture
March 29-April 30	Review	Online Module 12: Review of motion, forces, energy, heat, electricity and magnetism, waves, and density.

May 1st		<p>Face-to-face: Science Fair</p> <p>Native American connection: Contribution to Native Americans to science knowledge.</p> <p>Pedagogy: Good science teaching part 4, looking at examples of science teaching.</p>
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