Instructor: John Czworkowski, Ph.D.
Office: 2258 Urey Hall
E-mail: jczworkowski@ucsd.edu
Office hours: Wednesday 2:30–3:45 pm

Class meetings:
Tuesdays: January 11 & 25; February 1, 8, 15, & 22.
11:00 am – 12:20 pm
3211 Natural Sciences Building

Course description: This seminar will expose students to some of the issues involved in learning and teaching science. Questions addressed by the course include the following:

• Is knowing science more important now than ever before?
• What are students expected to know in science? Are many students unable or unwilling to learn science? What are the standards for learning? How is learning assessed and measured?
• How do students learn science? How is it taught? How can instruction in science be improved? Can and should science be made an interesting and engaging subject for all students?
• What is like to be a science teacher?

Course resources:
• Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future, National Academy Press, 2005
• How Students Learn: Science in the Classroom, National Academy Press, 2005
• National Science Education Standards, National Academy Press, 1996
• Science Content Standards for California Public Schools (adopted 1998), California Department of Education (www.cde.ca.gov)
• Additional readings and activities

Approximate course schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Tuesday</th>
<th>Topics</th>
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<tbody>
<tr>
<td>2</td>
<td>Jan 11</td>
<td>Introduction to the course and to the California Teach Program&lt;br&gt;The drive for improvement in science education</td>
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<tr>
<td>4</td>
<td>Jan 25</td>
<td>Goals, standards, and assessments for science education</td>
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<td>5</td>
<td>Feb 1</td>
<td>Issues important to learning science: preconceptions and misconceptions, conceptual frameworks, metcognition, multiple representations, etc.</td>
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<td>6</td>
<td>Feb 8</td>
<td>National and international comparisons of performance in science</td>
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<td>7</td>
<td>Feb 15</td>
<td>Observing science classroom practices</td>
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<td>8</td>
<td>Feb 22</td>
<td>Additional issues in science learning</td>
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