REAL 694: Properties of Matter

SAMPLE SYLLABUS
Credit Hours:  1
Location:  Online

University Mission Statement
As a Catholic university rooted in the liberal arts, we are a welcoming community of learners challenged by Franciscan values and charism, engaged in a continuous pursuit of knowledge, faith, wisdom, and justice, and ever mindful of a tradition that emphasizes reverence for creation, compassion and peacemaking. We strive for academic excellence in all programs, preparing women and men to contribute to the world through service and leadership.

College of Education Mission
The mission of the College of Education is to prepare competent and caring educators who understand students, serve the community and develop professionally to become ethical decision-makers and leaders.

Contact Information
Faculty:
Office Hours:
Email:
Phone:

Course Description
Candidates will examine and compare properties of solids and liquids and the creation and use of science tools that measure volume and mass. Through guided experiments, candidates will explore interactions of matter and energy, model atoms and molecules, and use the scientific method of investigation when formulating polymers using differing ingredients. Candidates will learn and model how nanoscale size influences behavioral properties of materials. All activities correlate with Next Generation Science Standards.

Course Goals

UNDERSTANDING STUDENTS
Candidates will analyze and evaluate a variety of instructional strategies to enrich student learning in their classrooms.

SERVING THE COMMUNITY
Candidates will become advocates for quality instruction in order to support colleagues, administrators, parents, and students in their school settings.

FINDING OUR PROFESSIONAL SELVES
Candidates will design and implement innovative and effective strategies to enhance professional growth.

Course Outcomes (Compliance Standards can be found at www.stfrancis.edu/real/syllabus)
By the conclusion of the course, each participant will be able to do the following:

1. Candidates will identify/describe the relationship of the course experience to the InTASC Standards.
   - InTASC 5, 6, 7, 8
2. Candidates will describe instructional changes that will positively impact student learning/achievement.
   - InTASC 5, 6, 7, 8
3. Candidates will demonstrate reflective professional behaviors.
   - InTASC 9

**Resources and Academic Policies**

Resources and academic policies for candidates as listed below can be found at [www.stfrancis.edu/real/syllabus](http://www.stfrancis.edu/real/syllabus). The PDF documents may also be printed from this location for easy reference.

- Method of Instruction and Expectations of Candidates
- Academic Policies for Candidates
- Compliance Standards
- Resources and Assistance for Candidates

**Institutional Policies**

A complete listing of university policies and procedures can be found in the University of St. Francis Course Catalog. For the most current version of the catalog, please visit [http://stfrancis.edu/academics/university-catalog](http://stfrancis.edu/academics/university-catalog)

**Course Assignments and Alignment of Outcomes**

**Evidence of Completion – Experiential Learning**

Candidate’s successful completion of the required assessments, experiences, and activities during experiential learning opportunity will be documented.

- Course outcome 3
- Standards InTASC 4, 5, 9

**Active Learning Assessment**

Candidates will submit and reflect upon evidence from the experiential learning opportunity to demonstrate proficiency in meeting/learning about an identified InTASC Standard. Descriptions of the impact this new knowledge/experience will have upon the classroom environment and student learning/achievement will also be documented.

- Course outcomes 1, 2, 3
- Standards InTASC 5, 6, 7, 8

**Experiential Learning Reflection Survey**

Candidates will complete a reflection survey sharing their experiential learning opportunity and insights.

- Course outcome 3
- Standards InTASC 9

This course builds on a meaningful learning experience that occurs outside the traditional classroom structure in which candidates are currently participating or recently concluded. In that experience, candidates interacted with generative topics based on current theory and research-based best practices. This course allows candidates the opportunity to extend, apply, and demonstrate their learning from that experience with activities that are aligned with academic outcomes and applicable state and national standards.

Candidates will be given a written pre- and post-test to compare conceptual understanding. Group discussions are held during class after each unit. Grade-level specific poster sessions dissect and apply Next Generation Science Standards. Written work includes a summary of how materials and STEM units can be used in the classroom and unit lesson.
• Unit/Lesson Plan
• Guided Experiments
• STEM Summary
• Reflections of Required Readings

Course Evaluation and Weighting of Assignments
The following point values will be used and equated to a final grade. Scoring rubrics for discussions, assignments, and the final project will be provided in the Course Resources Module.

<table>
<thead>
<tr>
<th>ASSIGNMENTS</th>
<th>POSSIBLE POINTS</th>
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<tbody>
<tr>
<td>Evidence of Completion – Experiential Learning</td>
<td>26</td>
</tr>
<tr>
<td>Active Learning Assessment #1</td>
<td>13</td>
</tr>
<tr>
<td>Active Learning Assessment #2</td>
<td>13</td>
</tr>
<tr>
<td>Experiential Learning Reflection Survey</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>55</strong></td>
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<table>
<thead>
<tr>
<th>GRADING SCALE POINTS AND PERCENTAGES</th>
<th>GRADE</th>
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</thead>
<tbody>
<tr>
<td>55-51 points</td>
<td>A</td>
</tr>
<tr>
<td>50-47 points</td>
<td>B</td>
</tr>
<tr>
<td>46-43 points</td>
<td>C</td>
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<tr>
<td>Less than 43 points</td>
<td>F</td>
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Course Schedule

<table>
<thead>
<tr>
<th>Course Content/Topic</th>
<th>Required Reading, Activities, and Tasks</th>
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</thead>
<tbody>
<tr>
<td><strong>MODULE ONE</strong></td>
<td></td>
</tr>
<tr>
<td>Experiential Learning Opportunity</td>
<td>• Read information in Getting Started Module</td>
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<td></td>
<td>• Contribute to the Course Introduction</td>
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<td></td>
<td>• Complete Evidence of Completion – Experiential Learning</td>
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<tr>
<td><strong>MODULE TWO</strong></td>
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<tr>
<td>Active Learning Assessment</td>
<td>• Review the InTASC Standards</td>
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<tr>
<td></td>
<td>• Complete Active Learning Assessment #1</td>
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<tr>
<td></td>
<td>• Complete Active Learning Assessment #2</td>
</tr>
<tr>
<td><strong>MODULE THREE</strong></td>
<td></td>
</tr>
<tr>
<td>Completion of Experiential Learning Opportunity</td>
<td>• Complete Experiential Learning Reflection Survey</td>
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