# Lecture Syllabus

## DATE | CLASS | TOPIC |
--- | --- | --- |
Aug. 25 | 1 | Introduction |
27 | 2 | Beginnings of Science |
29 | 3 | Emergence of Science |
3 | 4 | Atomic Theory |
5 | 5 | Atoms and Molecules |
8 | 6 | Chemical Bonding |
10 | 7 | Heat and Temperature I |
12 | 8 | Demonstration 1 |
15 | 9 | Heat and Temperature II |
17 | 10 | Static Electricity I |
19 | 11 | Learning Center – Set Up |
22 | 12 | Learning Center -Critique |
24 | 13 | Static Electricity II |
26 | 14 | Demonstration 2 |
29 | 15 | Test 1* (Classes 1-14) |
Oct 1 | 16 | Current Electricity I |
3 | 17 | Current Electricity II |
8 | 18 | Current Electricity III |
10 | 19 | Demonstration 3 |
13 | 20 | Magnetism I |
15 | 21 | Magnetism II |
17 | 22 | Waves I |
20 | 23 | Waves II |
22 | 24 | Waves III |
24 | 25 | Demonstration 4 |
27 | 26 | Waves IV |
29 | 27 | Mechanics I |
31 | 28 | Demonstration 5 |
Nov. 3 | 29 | Test 2 * (classes 16-28) |
5 | 30 | Mechanics II |
7 | 31 | Mechanics III |
10 | 32 | Mechanics IV |
12 | 33 | Weather I |
14 | 34 | Demonstration 6 |
17 | 35 | Weather II |
19 | 36 | Planet Earth |
21 | 37 | Plate Tectonics I |
24 | 38 | Demonstration 7 |
Dec. 1 | 39 | Plate Tectonics II |
3 | 40 | Flight and Space Travel |
5 | 41 | Planets |
8 | 42 | Stars |
10 | 43 | Science and Science Teaching II |

| DATE | CLASS | TOPIC | Readings in Science K-8 | Readings in TSTC |
--- | --- | --- | --- | --- |
Aug. 25 | 1 | Introduction | 2-16 (skim) | |
27 | 2 | Beginnings of Science | (Science Unlimited 1-43) | |
29 | 3 | Emergence of Science | 7-44 (skim) | |
3 | 4 | Atomic Theory | 418-429 | 43-52 |
5 | 5 | Atoms and Molecules | 429-437 | 52-58 |
8 | 6 | Chemical Bonding | 58-68 | |
10 | 7 | Heat and Temperature I | 456-460 | 69-83 |
12 | 8 | Demonstration 1 | | |
15 | 9 | Heat and Temperature II | 460-475 | 83-91 |
17 | 10 | Static Electricity I | 503-508 | 102-112 |
19 | 11 | Learning Center – Set Up | | |
22 | 12 | Learning Center -Critique | | |
24 | 13 | Static Electricity II | | |
26 | 14 | Demonstration 2 | | |
29 | 15 | Test 1* (Classes 1-14) | | |
Oct 1 | 16 | Current Electricity I | 508-515 | 112-128 |
3 | 17 | Current Electricity II | 515-523 | |
8 | 18 | Current Electricity III | | |
10 | 19 | Demonstration 3 | | |
13 | 20 | Magnetism I | 499-503 | 92-101 |
15 | 21 | Magnetism II | 516-523 | |
17 | 22 | Waves I | 476-479 | |
20 | 23 | Waves II | 480-485 | 129-149 |
22 | 24 | Waves III | 486-490 | 150-169 |
24 | 25 | Demonstration 4 | | |
27 | 26 | Waves IV | 490-498 | 169-177 |
29 | 27 | Mechanics I | 438-450 | 178-186 |
31 | 28 | Demonstration 5 | | |
Nov. 3 | 29 | Test 2 * (classes 16-28) | | |
5 | 30 | Mechanics II | 450-455 | 186-193 |
7 | 31 | Mechanics III | | |
10 | 32 | Mechanics IV | | |
12 | 33 | Weather I | 212-220 | 201-215 |
14 | 34 | Demonstration 6 | | |
17 | 35 | Weather II | 241-288 | 227-247 |
19 | 36 | Planet Earth | 205-212 | |
21 | 37 | Plate Tectonics I | 282-295 | |
24 | 38 | Demonstration 7 | | |
Dec. 1 | 39 | Plate Tectonics II | 220-240 | 295-301 |
3 | 40 | Flight and Space Travel | | 215-226 |
5 | 41 | Planets | 174-196 | 248-265 |
8 | 42 | Stars | 196-204 | 266-281 |
10 | 43 | Science and Science Teaching II | Read Entire SW (on reserve) | |

All Ed 228 students should enroll themselves in the EDUC 228 Blackboard site and in the Merrill TeacherPrep web site, [www.prenhall.com/teacherprep](http://www.prenhall.com/teacherprep).

Final exam is not comprehensive. It is given when scheduled by the Registrar.

Cell phones and beepers should be turned off in the classrooms.

Plagiarism: Matters of plagiarism in this course are governed by the definitions, policies, and procedures given on the appropriate pages of the latest edition of the [Moravian College Student Handbook](http://www.moravian.edu/student-handbook).

Dr. Joseph Gerencher, Office: 112, CHS, Phone: 610-861-1440, e-mail: gerencher@moravian.edu
Office Hours: MW F 11:00-11:30; Tues. 1pm-3 pm; other times by appointment.
**LABORATORY SYLLABUS**

*(subject to revision)*

<table>
<thead>
<tr>
<th>Date</th>
<th>Class</th>
<th>Topic</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug. 27 &amp; 28</td>
<td>1</td>
<td>Principles of Science Teaching</td>
<td>TSTC xi-xiii; xiv-xv</td>
</tr>
<tr>
<td>Sept. 3 &amp; 4</td>
<td>2</td>
<td>Exploratorium Workshop Approaches</td>
<td>TSTC 1-26 (skim)</td>
</tr>
<tr>
<td>10 &amp; 11</td>
<td>3</td>
<td>Curriculum Projects: SAPA and ESS</td>
<td>SCIENCE 4-8 (read); 45-61 (skim)</td>
</tr>
<tr>
<td>17 &amp; 18</td>
<td>4</td>
<td>Curriculum Projects: SCIS and InSights</td>
<td>SCIENCE 62-93 (skim)</td>
</tr>
<tr>
<td>24 &amp; 25</td>
<td>5</td>
<td>Curriculum Projects: FOSS</td>
<td>SCIENCE 113-171 (skim)</td>
</tr>
<tr>
<td>Oct. 1 &amp; 2</td>
<td>6</td>
<td><strong>In-school 1</strong></td>
<td></td>
</tr>
<tr>
<td>8 &amp; 9</td>
<td>7</td>
<td>Curriculum Supplements: AIMS</td>
<td></td>
</tr>
<tr>
<td>15 &amp; 16</td>
<td>8</td>
<td><strong>In-school 2</strong></td>
<td></td>
</tr>
<tr>
<td>22 &amp; 23</td>
<td>9</td>
<td>Piagetian Interview</td>
<td>Population Connection and others</td>
</tr>
<tr>
<td>29 &amp; 30</td>
<td>10</td>
<td><strong>In-school 3</strong></td>
<td></td>
</tr>
<tr>
<td>Nov. 5 &amp; 6</td>
<td>11</td>
<td>Curriculum Supplements: various</td>
<td></td>
</tr>
<tr>
<td>12 &amp; 13</td>
<td>12</td>
<td><strong>In-school 4</strong></td>
<td></td>
</tr>
<tr>
<td>19 &amp; 20</td>
<td>13</td>
<td><strong>In-school 5</strong></td>
<td></td>
</tr>
<tr>
<td>Dec. 3 &amp; 4</td>
<td>14</td>
<td>Microcomputers in Science Ed. and Inquiry Science</td>
<td>SCIENCE 94-112 (skim); TSTC 27-42 (skim)</td>
</tr>
</tbody>
</table>

**TEXTS:**  
(SU) Science Unlimited-Pennsylvania’s Resource Guide for Elementary Science

**READINGS ON RESERVE:**  
(CC) The Child’s Conception of Physical Casualty, Jean Piaget  
(SW) A Sense of Wonder, Rachel Carson  
Learning Center Activities: Science K-2, Deborah Candleora  
Science Learning Centers for the Primary Grades, Poppe & Van Matre

**ATTENDANCE POLICY:**  
Attendance will be taken in each class period. Unexcused absences in excess of four will reduce the final average of a student at a rate of one percentage point per absence. Students have the responsibility to present the evidence of the nature of an excused absence.

**FINAL GRADE:**  
EXAM 1 15%  
EXAM 2 15%  
EXAM 3 15%  
Learning Center 10%  
Classroom Demonstration 10%  
Piagetian Interview 15%  
In-school experience grade 20%

**COURSE OBJECTIVES:** Students will successfully and safely do the following:  
- demonstrate knowledge of the major principles of the physical, chemical, and Earth sciences.  
- use the methodology of scientific inquiry with peers and children.  
- use hands-on techniques to teach science concepts to peers and children.  
- employ a range of techniques, approaches, and curricular materials that support science education.  
- become familiar with a broad range of curricula, supplements, and software that promote science education.  
- develop an understanding of the child’s way of perceiving nature and his/her place within it.