Oakland University  College of Arts & Sciences  Departments of Physics & Chemistry

Syllabus for SCI 1000
Physical Science in Life, the World, and Beyond
Winter 2020

Lecture: T/R 10:00-11:47am 120 MSC
Lab Sessions according to schedule in 204 HHS/66 MSC

Instructor Information:
Module 1  Dr. Rao Bidhanapally
Phone: 248-370-4872
Office: 270 HHS
Mailbox: Dept. of Physics-190 MSC
E-mail: burao@oakland.edu
Office hours: T, R noon -1:00 pm or by appointment.

Module 2  Dr. Jose Esteves-Villanueva
Phone: 248-370-4064
Office: 341 HHS
Mailbox: Department of Chemistry — 264 SEB
E-mail: joesteve@oakland.edu
Office hours: T 11:50 am – 1:00 pm or by appointment

TA:  Alexandria Aspin, E-mail: araspin@oakland.edu

Resources:
Required Texts

or
Physical Science Connect Access Card (Please check if you have access to the e-book before the purchase)

Web site  http://moodle.oakland.edu
Also check the Connect MHHE website
https://connect.mheducation.com/class/r-bidhanapally-sci-1000

Required Materials:

• Safety goggles
• Calculator (simple four function) – no cell phones

Course Objectives:

This is an interdisciplinary physical science course, comprised of 2-modules, for non-science majors to enhance their scientific literacy and experience the scientific approach to problem solving in active-learning classrooms and hands-on laboratories. Modules on
the science of everyday life, science of the microscopic world, the earth and beyond are explored. Furthermore, you should develop an understanding of:

1. The scientific method,
2. Basic science concepts,
3. The analytical (i.e. laboratory) approach to understanding and solving problems,
4. The impact of the science on society and life.

Course Ground Rules (applies to lecture and lab):

1. Have regular class attendance.
2. After the 1st class, sit with your assigned group, if assigned or for labs.
3. Be prepared, (study & do assigned readings).
4. Do assigned homework.
5. Seek help immediately, if needed.
6. No make-ups for missed laboratory work or in-class worksheets.
7. No food or drinks are allowed in the labs
8. No electronic devices.
9. No cell phone use, place in silent mode.
10. Be courteous, professional.

Add/Drops
The University’s add/drop policy will be explicitly followed. It is the student’s responsibility to be aware of the university deadline dates for dropping courses.

Course Assignments and Grading:

This course combines standard lecture format, group laboratory and group/individual class exercises. Grades will be based on the points you earn from module quizzes, lab assignments, class assignments, and individual assignments. Your earned points will be taken as a percentage of total possible points for grade determination. A tentative point breakdown is given in the following table:

<table>
<thead>
<tr>
<th>Module</th>
<th>Title</th>
<th>In-class</th>
<th>HW</th>
<th>Lab</th>
<th>Quizzes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Physics</td>
<td>78</td>
<td>42</td>
<td>60</td>
<td>120</td>
<td>300</td>
</tr>
<tr>
<td>2</td>
<td>Chemistry</td>
<td>60</td>
<td>80</td>
<td>60</td>
<td>100</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TOTAL</td>
</tr>
</tbody>
</table>

Missed laboratory sessions cannot be made up, and will result in a 0 grade for that assignment,

- Late homework assignments will receive a 10% point deduction for each day late,
- Grades will be determined using the following scale, and be a percentage of the total points possible. Total points will be adjusted if assignments are added or deleted, but you grade will be no lower than what is indicated in the following table:
% Total Points | Grade
---|---
95 - 100  | A
88 - 94  | A-
81 - 87  | B+
75 - 80  | B
68 - 74  | B-
61 - 67  | C+
55 - 60  | C
52 - 54  | C-
49 - 51  | D+
45 - 48  | D

**Academic Misconduct (plagiarism):**

The University’s regulations that relate to academic misconduct will be fully enforced. You are expected to give full credit to all external sources used. Any student suspected of cheating by copying on homework, labs, or exams, by changing answers on exams after they have been scored, by having another person take an exam for them, by obtaining exam questions prior to the exam, or by plagiarism will be referred to the Academic Conduct Committee. Students found guilty of academic misconduct face suspension or permanent dismissal.

**Class Schedule:**

**Module 1 - Physics: Basic Concepts in Mechanics, Energy, Heat, Electricity and Nature of Light & Waves**

<table>
<thead>
<tr>
<th>T</th>
<th>Th</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-07</td>
<td>1-09</td>
<td>Course Introduction &amp; Motion in One dimension &amp; Kinematics</td>
</tr>
<tr>
<td>1-14</td>
<td>1-16</td>
<td>Newton’s Law of Motion, Law of Gravity &amp; Weight</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 17, Friday: Last day 100% tuition refund, last day ‘no-grade drop (Check with Registrar’s office)</td>
</tr>
<tr>
<td>1-21 1-23 Lab: 1, 2, or 3: re: lab schedule, Ch.3 Work, Energy and Power</td>
</tr>
<tr>
<td>1-28 1-30 Lab: 1, 2, or 3: Heat and Temperature, Convection &amp; Radiation</td>
</tr>
<tr>
<td>2-04 2-06 Lab: 1, 2, or 3: Static electricity, Electric Field, Potential, and Circuits</td>
</tr>
<tr>
<td>2-11 2-13 Special Topics: Waves &amp; Nature of Light, and Review for module quiz</td>
</tr>
<tr>
<td>2-18 2-20 Module quiz review &amp; Module-1 Quiz</td>
</tr>
<tr>
<td>2-25 2-27 Winter Recess</td>
</tr>
</tbody>
</table>

**Module 2 - Chemistry: Basic Chemistry**

<table>
<thead>
<tr>
<th>T</th>
<th>Th</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-03</td>
<td>3-05</td>
<td>Scientific Method, Chemical Foundations</td>
</tr>
<tr>
<td>3-10</td>
<td>3-12</td>
<td>Atoms and Bonding, Quiz 0</td>
</tr>
<tr>
<td>3-17</td>
<td>3-19</td>
<td>Lab 1: Solubility; Shape, Polarity, Intermolecular Forces</td>
</tr>
<tr>
<td>3-24</td>
<td>3-26</td>
<td>Oxidation, reduction, thermodynamics, fuels Quiz Lab 1</td>
</tr>
<tr>
<td>3-31</td>
<td>4-02</td>
<td>Lab 2: Exothermic Reactions Chemical Reactions</td>
</tr>
<tr>
<td>4-07</td>
<td>4-09</td>
<td>Moles, Molarity, Mole Calculations Quiz Lab 2</td>
</tr>
<tr>
<td>4-14</td>
<td>4-16</td>
<td>Lab 3: CO₂ In Breath, Wrap-up &amp; Review Quiz Lab 3 (not graded for points)</td>
</tr>
<tr>
<td>4-21</td>
<td></td>
<td>Module 2 Final Quiz (8-11 AM, NOTE TIME CHANGE)</td>
</tr>
</tbody>
</table>
Reasonable Accommodations

Accessibility and Accommodations: It is the University’s goal that learning experiences be as accessible as possible. Students with disabilities who have questions about course accessibility are encouraged to contact the instructor immediately. The Office of Disability and Support Services (DSS) is available to help. The DSS office is located in room 103A North Foundation Hall.
For more information, call 248-370-3266 or visit https://www.oakland.edu/dss

Excused Absence Policy

The University excused absence policy applies to participation as an athlete, manager or student trainer in NCAA intercollegiate competitions, or participation as a representative of Oakland University at academic events and artistic performances approved by the Provost or designee.
For the excused absence policy, see: https://www.oakland.edu/provost/policies-and-procedures/

Bereavement Policy

In the event of the death of certain members within families or among loved ones, the University grants necessary bereavement absences upon student request.
For the official bereavement policy, see: https://www.oakland.edu/provost/policies-and-procedures/

Student Preferred Name/Pronoun Policy

The University recognizes that as a community many of its members use names other than their legal names to identify themselves. As long as the use of this different name is not for the purposes of misrepresentation or a legal name is required by University business, policy or legal need, the University acknowledges that a “preferred name” will be used wherever possible. The University reserves the right to not accept a preferred name if it is deemed inappropriate, including a preferred name that is vulgar, offensive, fanciful, or creates confusion with another person.

Note: Instructors reserve the right to modify the above schedule as class needs dictate.