Cohort GE Area Survey  
Physical Science

Exploring the Physical Sciences (i.e., Physics, Chemistry) Courses satisfying this requirement introduce students to basic properties and principles of matter, examining structure and function in elementary physical systems traditionally studied by physicists and chemists. Students should come to appreciate both creative and systematic aspects of scientific method, and should come to understand the power of theory and prediction within the framework of empirical/experimental modes of inquiry.

Interpretive Statement

a) The physical science general education requirement can be satisfied by taking one semester of General Physics (PH21 or PH23), or Physics for the Life-Sciences (PH11 or PH13), or General Chemistry (CHM5 or CHM6) – with or without the labs that normally accompany these courses. (Note that most students will automatically sign up for the labs together with the lecture courses.)

These introductory courses are usually taken by prospective science majors. By allowing these courses to be part of the GE offering we avoid situations where science majors who have already mastered quite difficult material are forced to go back and study the same topics again at a less sophisticated level.

It is important nevertheless that these introductory courses contain significant contributions to each student’s liberal arts education. This means that, for instance, a discussion of the so-called “scientific method” must be included. Also, students could be assigned reading that connects their subject matter to theological or philosophical questions. Finally, it would be very appropriate to ask students to reflect in an essay on the relationship between their faith and their field of study.

b) The currently existing science facilities and the size of the current science faculty prevent us from offering substantial laboratory activities as an integral part of our general education science classes. The addition of (integrated or parallel) science labs to our physics and chemistry general education courses would be highly desirable. Such labs would add increased interaction between students and faculty, and also foster collaborative learning among students.

The desire for improving Westmont’s science laboratories is shared by the physics, chemistry, and biology faculty, as well as our provost Shirley Mullen. Since interactive & collaborative learning between faculty and students is highly valued and expected by WASC, the current deficiencies in this area are not acceptable and need to be revisited.

c) It is difficult to deal with the issue of interdisciplinary courses in a general way. There appears to exist a general consensus among the faculty in physics and chemistry that it would be best to look individually at such course proposals.

It may be more appropriate for certain interdisciplinary courses (dealing, for instance, with philosophical and theological issues in physics and astronomy) to be offered under the “common context” umbrella, and perhaps to be co-taught with another faculty member from those areas.

d) In order for our science majors (physics and chemistry) to be able, in the future, to double major (e.g. in chemistry and philosophy, or physics and math), it may be necessary that more general education credit be given for AP classes, or for classes taken over the summer at other institutions.

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<thead>
<tr>
<th></th>
<th>Undiscerned</th>
<th>Recognized</th>
<th>Understood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication of Goals</td>
<td>Student does not seem to know that there are goals or what they are.</td>
<td>Student recognizes there are goals, but is not clear about what they are.</td>
<td>Student gives evidence of accurately understanding the nature of the area goals.</td>
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<tr>
<td>Lacking</td>
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<tr>
<td>Contribution to Goals</td>
<td>Student’s response does not give evidence that the goals have been addressed in the course.</td>
<td>The goals have been addressed in the course, but the course’s contribution is not clear or the goals are far from being achieved.</td>
<td>The student response gives evidence of ongoing/effective contribution of the course to the area goals.</td>
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