## SECTION 3
ANNUAL ASSESSMENT SUMMARY

<table>
<thead>
<tr>
<th>Program Learning Outcomes</th>
<th>Outcome Measures</th>
<th>Number Assessed</th>
<th>% Did Not Meet</th>
<th>% Met</th>
<th>% Exceeded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will demonstrate conceptual understanding of inorganic, organic, analytical, biological, and physical chemistry. Curricular guidelines are those suggested by the American Chemical Society.</td>
<td>1 NA NA NA NA</td>
<td>2 0 0 0 0.0</td>
<td>3 0 0.0 0.0 0.0</td>
<td>4 0 0.0 0.0 0.0</td>
<td></td>
</tr>
<tr>
<td>Students will demonstrate critical thinking and problem solving skills related to the discipline</td>
<td>1 0 0.0 0.0 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students will demonstrate effective communication of technical information</td>
<td>1 0 0.0 0 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students will demonstrate proficiency in using computers to solve problems in chemistry</td>
<td>1 0 0 0 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students will be able to characterize chemical compounds, perform accurate and precise quantitative measurements using proper techniques and modern instruments, and properly execute common laboratory practices (such as laboratory safety, waste management, record keeping, and preparing solutions and dilutions).</td>
<td>1 0 0.0 0 0.0</td>
<td>2 0 0.0 0 0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Students will have an understanding of the career opportunities available in chemistry.

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Part One: Summary and Analysis of Assessment Results
A. Results Summary
   a. Program Learning Outcome Expectations

   Our Program Learning Outcomes are primarily assessed for students in the seminar courses (CHEM 4491-CHEM 4492), or other upper division courses. These are graduating seniors. Because we have had no graduating seniors these courses were not offered and thus the assessments were not completed. We have no data for this section.

   b. Establishment of Expectations

   PLO #1
   Outcome Measure #1-not applicable
   Outcome Measure #2-
   Outcome Measure #3-
   Outcome Measure #4-

   PLO #2
   Outcome Measure #1-

   PLO #3
   Outcome Measure #1-
   Students earning a grade of “A” were assessed as exceeding expectations, students earning a grade of “B or C” were assessed as meeting expectations, and students earning a grade of “D or F” were assessed as not meeting expectations.
   Outcome Measure #2-
   Students earning a grade of “A” were assessed as exceeding expectations, students earning a grade of “B or C” were assessed as meeting expectations, and students earning a grade of “D or F” were assessed as not meeting expectations.
   Outcome Measure #3-
   earning a grade of “B or C” were assessed as meeting expectations, and students earning a grade of “D or F” were assessed as not meeting expectations.

   PLO #4
Outcome Measure #1-
Students earning a grade of “A” were assessed as exceeding expectations, students earning a grade of “B or C” were assessed as meeting expectations, and students earning a grade of “D or F” were assessed as not meeting expectations.

PLO #5
Outcome Measure #1-Adherence to safety is taught in all laboratory courses and a component of the grade is based upon safety compliance

Outcome Measure #2
Students earning a grade of “A” were assessed as exceeding expectations, students earning a grade of “B or C” were assessed as meeting expectations, and students earning a grade of “D or F” were assessed as not meeting expectations.

Outcome Measure #3-
Students earning a grade of “A” were assessed as exceeding expectations, students earning a grade of “B or C” were assessed as meeting expectations, and students earning a grade of “D or F” were assessed as not meeting expectations.

PLO #6
Outcome Measure #1-
Students earning a grade of “A” were assessed as exceeding expectations, students earning a grade of “B or C” were assessed as meeting expectations, and students earning a grade of “D or F” were assessed as not meeting expectations.

Outcome Measures #2-#4 not applicable

B. Analysis Summary
a. Which results are of greatest concern and why?

This cannot be directly addressed PLO #1-Outcome Measures #2 and #3 are typically the areas of greatest concern. The department would like for students to achieve better scores on all ACS standardized exams. However, we realize that some of the content on the ACS exams is material that may not necessarily be covered in a particular course. For example, the exams in Biochemistry and Inorganic Chemistry have content that would be covered in two-semester sequence courses and we currently offer one-semester courses.

b. What possible changes could be made to improve results?

The ACS publishes study guides for the General Chemistry, Organic Chemistry, and Physical Chemistry exams. The Chemistry Department has purchased these study guides and they are available, through the library reserve program, for students. Students are encouraged to consult these study guides throughout the semester to prepare for the exams.

Faculty members evaluate the results of all the ACS exams at the end of the respective courses and needed areas of improvement are identified. Additional material and questions are then used to aid student comprehension.

To enhance student performance on the ACS DUCK exam the Chemistry Department has developed a study guide of key chemistry concepts and has implemented review sessions in both CHEM 4491-Chemistry Seminar I and CHEM 4492-Chemistry Seminar II. The department will continue to use the study guide and have review sessions for students in the Chemistry Seminar series.

The most obvious concern is the current lack of graduating chemistry majors. Although we will have majors graduating in the coming year(s), the decrease in majors is our greatest concern.
Part Two: Action Plans

A. New Action Plans

The Chemistry Department will continue to encourage students to utilize the ACS study guides for the General Chemistry, Organic Chemistry, and Physical Chemistry exams. Review of the results of the ACS Exam in Organic Chemistry given in Spring 2013 have shown a 17% increase in scores after using of the study guide and a review session.

To enhance student performance on the ACS DUCK exam the Chemistry Department has developed a study guide of key chemistry concepts and has implemented review sessions in both CHEM 4491-Chemistry Seminar I and CHEM 4492-Chemistry Seminar II.

All faculty members of the department will be responsible for seeing that actions are taken.

The department of Chemistry will work to increase the numbers of majors. It will work in both recruitment of students and in maintaining students in the major. The primary focus will be on improving the WDF rates in the Area D core courses, specifically CHEM 1211 and CHEM 1212. If students see themselves as successful in the Principles course, they may be encouraged to stay in the major or to transfer to the major.

B. Previous Action Plan

The Chemistry Department purchased study guides for the ACS exams in General Chemistry, Organic Chemistry, and Physical Chemistry and placed them on reserve in the library for student use.

The Chemistry Department would like to see at least a 5% improvement on exam scores within the next two years. The DUCK exam will continue to be monitored for the next three years to establish statistics.