Chemistry Major with American Chemical Society (ACS) Certification

The ACS Committee on Professional Training in their Spring 2015 document titled “ACS Guidelines and Evaluation Procedures for Bachelor’s Degree Programs” describes the certified degree as follows:

ACS authorizes the chair of the ACS-approved program to certify graduating students who complete a bachelor’s degree meeting the ACS guidelines. Graduates who attain a certified degree must complete requirements that may in fact exceed those of the degree-granting institution, but this comprehensive undergraduate experience provides an excellent foundation for a career in the molecular sciences. An ACS-certified degree signifies that a student has completed an integrated, rigorous program including introductory and foundational course work in chemistry and in-depth course work in chemistry or chemistry-related fields. The certified degree also emphasizes laboratory experience and the development of professional skills needed to be an effective chemist. Certification gives a student an identity as a chemist and helps in the transition from undergraduate studies to professional studies or employment.

The curriculum at BW provides students with the opportunity to take courses at a level that is introductory to all areas of chemistry along with foundational and in-depth study in the five sub-disciplines (analytical, biochemistry, inorganic, organic, and physical). Students meet the criterion of a minimum 400 hours of laboratory work through a combination of laboratory courses and faculty-student collaborative research culminating with a chemistry thesis. Students are encouraged to discuss the ACS-certified degree with their advisor early in their academic program.

Required Courses to complete the major requirements for BS in Chemistry with ACS Certification:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHM-111</td>
<td>General Chemistry I</td>
<td>4</td>
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<tr>
<td>CHM-112</td>
<td>General Chemistry II</td>
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<td>CHM-115</td>
<td>General Chemistry Laboratory</td>
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<td>CHM-221</td>
<td>Quantitative Analysis</td>
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<td>CHM-225</td>
<td>Quantitative Analysis Laboratory</td>
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<td>CHM-251</td>
<td>Organic Chemistry I</td>
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<td>CHM-255</td>
<td>Organic Chemistry I Laboratory</td>
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<td>CHM-252</td>
<td>Organic Chemistry II</td>
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<td>CHM-256</td>
<td>Organic Chemistry II Laboratory</td>
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<td>CHM-311</td>
<td>Biochemistry</td>
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<td>CHM-315</td>
<td>Biochemistry Laboratory</td>
<td>1</td>
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</tbody>
</table>
CHM-321  Instrumental Analysis  3
CHM-325  Instrumental Analysis Laboratory  1
CHM-331  Physical Chemistry I  3
CHM-332  Physical Chemistry II  3
CHM-335  Physical Chemistry Laboratory  1
CHM-341  Inorganic Chemistry  3
CHM-345  Inorganic Chemistry Laboratory  1
CHM-352  Polymer Chemistry  3
CHM-364  Junior Chemistry Project  0.5
CHM-464  Senior Chemistry Project I  1
CHM-465  Senior Chemistry Project II  0.5
MTH-141  Calculus I  4
MTH-142  Calculus II  4

Students are strongly encouraged to take MTH-242 Calculus III and MTH-212 Differential Equations.

PHY-131  General Physics I  4
PHY-151  General Physics I Laboratory  1
or
PHY-145  Applied College Physics I  5

PHY-132  General Physics II  4
PHY-152  General Physics II Laboratory  1
or
PHY-146  Applied College Physics II  5

A Minimum of 3.0 credit of laboratory research with a thesis is required.
CHM-403  Laboratory Projects (optional)
CHM-491/492  Departmental Thesis/Project

A minimum of one topics course is required.
CHM-411  Topics in Biochemistry
CHM-421  Topics in Analytical Chemistry
CHM-431  Topics in Physical Chemistry
CHM-441  Topics in Inorganic Chemistry
CHM-451  Topics in Organic Chemistry