

# APPLIED CHEMISTRY

## Program Overview and Description

The Bachelor of Science (B.S.) in Applied Chemistry is designed to prepare students to apply physical and mathematical concepts to chemical systems. This major combines foundational courses in chemistry, physics, and mathematics with advanced coursework in chemistry and other physical/mathematical disciplines to develop depth within a particular area of interest. This major fulfills most of the pre-engineering requirements for the Washington University in St. Louis dual-degree engineering programs, including the recommended courses for Chemical and Biomedical Engineering, while also preparing non-dual-degree students for careers and further education in engineering, chemistry, and the applied sciences.

## B.S., Applied Chemistry requirements (62 credits)

Code	Title	Credits
<b>Required coursework</b>		
CHM 203	General Chemistry I	3
CHM 204	General Chemistry I Laboratory	1
CHM 205	General Chemistry II	3
CHM 206	General Chemistry II Laboratory	1
CHM 315	Quantitative and Statistical Analysis *	4
CHM 321	Organic Chemistry I	3
CHM 322	Organic Chemistry I Laboratory	1
CHM 323	Organic Chemistry II	3
CHM 324	Organic Chemistry II Laboratory	1
CHM 341	Physical Chemistry I	3
CHM 342	Physical Chemistry Laboratory	2
CHM 343	Physical Chemistry II	3
CHM 499	Chemistry Seminar	1
MTH 245	Calculus I	4
MTH 249	Modeling the Physical World I	3
or MTH 246	Calculus II	
MTH 349	Modeling the Physical World II	3
or MTH 347	Calculus III	
PHY 221	Advanced General Physics I:Modeling the Physical World	3
or PHY 213	General Physics for the Physical Sciences I	
PHY 222	Advanced General Physics II:Modeling the Physical World	3
or PHY 214	General Physics for the Physical Sciences II	
PHY 205	General Physics Laboratory I	1
PHY 206	General Physics Laboratory II	1
MTH 350	Applied Linear Algebra and Differential Equations	3
CSC 221	Introduction to Programming	3
<b>Electives</b>		<b>9</b>

Nine (9) additional credits in CHM and/or related subjects such as PHY, MTH, or CSC, number 300 or above, with major advisor approval. Students participating in the dual-degree engineering program may count up to 6 hours of upper-division coursework from the affiliated institution toward this requirement.

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Total Credits	62
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\* Waived for students who have completed CHM 285 Advanced General Chemistry II and CHM 286 Chemical and Statistical Analysis Laboratory.