

Honors Math Applied - Chemistry Track Requirements

This requires an ASC Honors contract

Part A: Required Prerequisites

Pick **ONE** of the following calculus options:

Math 1151 & 1152	Calculus I & II	5,5
Math 1181H	Honors Calculus I	5

Chem 1210 & 1220	General Chemistry I & II	5,5
Physics 1250 & 1251	Mechanics, Thermal Physics, Waves and E & M, Optics, Modern Physics	5,5
Biology 1113 or 1114	Energy Transfer and Development or Form, Function, Diversity, Ecology	4
CSE 1222 or 1223	Intro to Computer Programming in C++ or Java	3

Part B: Major Program (Minimum grade of B- and minimum math GPA of 3.2)

Honors Core Requirements -- At most 2 of the following Honors math can count toward the "**5 Honors eligible courses**":

Math 2153 or 2182H	Calculus III or Honors Calculus II	Prereq: Math 1152 or Math 1181H	4-5
Math 2568 or 2568H	Linear Algebra	Prereq: Math 2153	3
Math 3345 or 3345H	Foundations of Higher Mathematics	Prereq: Math 2153	3

Core Requirements

Math 4530 or Stat 4201	Probability or Intro to Mathematical Statistics I	Prereq: Math 2153	<u>3-4</u>
Stat 4202	Intro to Mathematical Statistics II	Prereq: Math 4530 or Stat 4201	4

Required Courses for Chemistry Track

Math 2255	Differential Equations and Their Applications	Prereq: Math 2153	3
Math 4557	Partial Differential Equations	Prereq: Math 2255	3

Applied Math - Chemistry Electives -- Choose at least 2 courses / 6 hours:

Chem 2210	Analytical Chemistry I: Quantitative Analysis	Prereq: Chem 1220, Math 1148 & 1149	5
Chem 4300	Physical Chemistry I	Prereq: Chem 2210, Math 2153, 2255, Physics 1251	3
Chem 4310	Physical Chemistry II	Prereq: Chem 4300	3

Applied Math Courses -- Choose **ONE** path:

Path A:

Math 4556	Dynamical Systems - AU only	Prereq: Math 2153	3
Math 5401 & 5402	Applied Differential Equations I and II - AU/SP	Prereq: Math 2255 & 2568	6
Math 5601	Essentials of Numerical Methods - AU only	Prereq: Math 2568 & 4556	3

Path B:

Math 4556	Dynamical Systems - AU only	Prereq: Math 2153	3
Math 5601 & 5602	Numerical Methods & Computational PDEs - AU/SP	Prereq: Math 2568, 4556, & 4557	6
Math 5401	Applied Differential Equations I - AU only	Prereq: Math 2255 & 2568	3

Path C:

Math 4556	Dynamical Systems - AU only	Prereq: Math 2153	3
Math 5756 & 5757	Math Methods in Relativity Th. I & II - AU(even)/SP(odd)	Prereq: Math 2153 & 2568	6
Math 5601	Essentials of Numerical Methods - AU only	Prereq: Math 2568 & 4556	3

Note: Honors math eligible courses are bolded.

Total Hours **38-44**

ASC Honors Contract: Students pursuing such a contract must complete at least "**5 honors math eligible courses**" selected in consultation with an honors math advisor. At most 2 courses can count from 2182H, 2568H, or 3345H. For the remaining 3 courses, one needs to complete one of the listed sequences available for each track, and select another course from a list of approved courses at the 5000 level (see honors math advisor).

Honors Math Applied - Chemistry Track Sample Schedule

	Autumn		Spring	
Year 1	Math 1181H (AU only)	5	Math 2182H (SP only)	5
	Chem 1210	5	Chem 1220	5
	ARTSSCI 1110.01	1	English 1110	3
	CSE 1222 or 1223	3	GE Language 1102	4
	GE Language 1101	4		
		18		17
Year 2	Math 2568/ 2568H (AU only)	3	Math 4530 or Stat 4201	3-4
	Biology 1113 or 1114	4	Math 3345/ 3345H (SP only)	3
	Math 2255	3	Physics 1251	5
	Physics 1250	5	GE Language 1103	4
		15		15-16
Year 3	Math 4556 (AU only)	3	Math 5402^A (SP only)	3
	Stat 4202	4	Math 4557	3
	Math 5401^{A,B} (AU only)	3	Chem 4300	3
	Chem 2210	5	GE	3
		15	GE	3
		15		15
Year 4	Math 5601 (AU only)	3	Math 5602^B (SP only)	3
	Math 5756^C (AU ^{Even} only)	3	Math 5757^C (SP ^{Odd} only)	3
	GE	3	GE	3
	GE	3	GE	3
	GE	3	GE	3
		15		15

Additional hours may be necessary depending on course selection.

^{A,B,C} Math courses required for the particular path. The Math 5401/5402 and Math 5756/5757 sequences can be swapped as necessary to accommodate course offerings.