Chemistry Bachelor of Science Academic Progress Sheet

T= Transfer IP=In Progress ***Note: Meetings should be scheduled periodically to review progress toward fulfilling Department requirements.***

Name:	**Notes:**
ID:	
Status of requirements:	

Core Requirements	Met	Notes
CHE 131 (or CHE 129 and CHE 130), CHE 132 General Chemistry I and II or CHE 152 Molecular Science I	☐	
CHE 133 and CHE 134 General Chemistry Lab I and II or CHE 154 Molecular Science Laboratory I	☐	
CHE 301 and CHE 302 Physical Chemistry I and II	☐	
CHE 303 Solution Chemistry Laboratory	☐	
CHE 321 and CHE 322 Organic Chemistry I and II, or CHE 331 and CHE 332 Molecular Science II and III	☐	
CHE 375 Inorganic Chemistry I	☐	
CHE 327 Organic Chemistry Laboratory or CHE 383 Introductory Synthetic and Spectroscopic Laboratory Techniques	☐	
CHE 385 Tools of Chemistry	☐	
MAT 131 and MAT 132 (Calculus I, II)	☐	
MAT 203 (Calculus III with applications) (See note 1 for possible substitutions)	☐	
PHY 131 and PHY 133 Classical Physics I and Classical Physics Laboratory (See note 2 for possible substitutions)	☐	
PHY 132 and PHY 134 Classical Physics II and Classical Physics II Laboratory (See note 2 for possible substitutions)	☐	
Upper-Division Writing Requirement: CHE 303, CHE 304, or CHE 384	☐	

Choose one of the following concentration areas (must be declared through the Registrar's office on the major/minor declaration form)

Chemical Science

Requirements	Met	Notes
CHE 304 Chemical Instrumentation Laboratory	☐	
CHE 357 Molecular Structure and Spectroscopy Laboratory or CHE 377 Inorganic Chemistry Laboratory	☐	
CHE 328 Synthetic and Spectroscopic Laboratory Techniques or CHE 384 Intermediate Synthetic and Spectroscopic Laboratory Techniques	☐	
CHE 487 Research in Chemistry (3 credits) or CHE 495 andCHE 496 Senior Research (see note 3)	☐	

Two electives chosen from: CHE 345/461, CHE 346/461, CHE 348/461, CHE 351, CHE 353, CHE 358, CHE 376, CHE 377 (see note 3) CHE 378, CHE 379, PHY 251, or ESG 281	☐	

Biological Chemistry (see Note 4)

Requirements	Met	Notes
CHE 328 Synthetic and Spectroscopic Laboratory Techniques or CHE 384 Intermediate Synthetic and Spectroscopic Laboratory Techniques	☐	
BIO 202 Fundamentals of Biology: Molecular and Cellular Biology	☐	
CHE 346/461 or BIO 361 Biochemistry I	☐	
BIO 310 Cell Biology (requires additional prerequisite-BIO 203)) or BIO 362 Biochemistry II	☐	
One organic or inorganic chemistry elective chosen from: CHE 345/461, CHE 346/461 (See note 5), CHE 348/461, CHE 376, CHE 377, CHE 378, CHE 379 or CHE 495/CHE 496	☐	

Chemical Physics (requires two math courses in addition to Calc I and II)

Requirements	Met	Notes
CHE 304 Chemical Instrumentation Laboratory	☐	
CHE 351 Quantum Chemistry or CHE 353 Chemical Thermodynamics	☐	
CHE 357 Molecular Structure and Spectroscopy Laboratory	☐	
AMS 210 or MAT 211 or AMS 261 or MAT 303 (See note 6)	☐	
PHY 251 and PHY 252 Modern Physics and Modern Physics Laboratory	☐	
One elective chosen from: CHE 358 Computing in Chemistry, PHY 277 Computation for Physics and Astronomy, PHY 300 Waves and Optics, PHY 307 Physical and Mathematical Foundations of Quantum Mechanics, PHY 301 Electromagnetic Theory I, PHY 303 Mechanics, or PHY 306 Thermodynamics, Kinetic Theory, and Statistical Mechanics (the last three courses require other physics prerequisites or permission of the instructor).	☐	

Environmental Chemistry

Requirements	Met	Notes
CHE 304 Chemical Instrumentation Laboratory	☐	
CHE 310 Chemistry in Technology and the Environment	☐	
CHE 357 Molecular Structure and Spectroscopy Laboratory or CHE 377 Inorganic Chemistry Laboratory, or CHE 311 Environmental Chemistry Lab	☐	
CHE 328 Synthetic and Spectroscopic Laboratory Techniques or CHE 384 Intermediate Synthetic and Spectroscopic Laboratory Techniques	☐	
BIO 201 Fundamentals of Biology: Organisms to Ecosystems or BIO 113 Applied Ecology	☐	
ATM 397 Air Pollution and Its Control (See note 7 for possible substitutions)	☐	

Marine and Atmospheric Chemistry

Requirements	Met	Notes
ATM 205 Introduction to Atmospheric Sciences	☐	
MAR 308 Principles of Instrumental Analysis	☐	
MAR 333 Coastal Oceanography	☐	
MAR 351 Introduction to Ocean Chemistry	☐	
Two electives chosen from: MAR 301 Environmental Microbiology, MAR 302 Marine Microbiology and Microbial Ecology, MAR 334 Remote Sensing of the Environment, MAR 336 Marine Pollution, MAR 394 Environmental Toxicology and Public Health, ATM 305 Global Atmospheric Change, ATM 345 Atmospheric Thermodynamics and Dynamics, ATM 397 Air Pollution and Its Control	☐	

Disclaimer: Academic Progress Sheets are only updated periodically for use as an advising tool. The Undergraduate Catalog supersedes any errors or omissions in the Academic Progress Sheets.

Notes:

1. Alternate Mathematics Sequences
The following alternate sequences may be substituted for major requirements or prerequisites: MAT 125 (or MAT 130/MAT 125), MAT 126, MAT 127 or MAT 141, MAT 142 or MAT 171 or AMS 151, AMS 161 for MAT 131, MAT 132; AMS 210 or MAT 211 or AMS 261 for MAT 203. Equivalency for MAT courses as indicated by earning the appropriate score on a placement examination will be accepted as fulfillment of the requirement without the necessity of substituting other credits.
2. Alternate Physics Sequences
The following alternate sequences may be substituted for physics requirements or prerequisites: PHY 141/PHY 133, PHY 142/PHY 134 or PHY 125, PHY 126/PHY 133, PHY 127/PHY 134 for PHY 131/PHY 133, PHY 132/PHY 134.
3. Students may complete both CHE 357 and CHE 377 in lieu of the research requirement. However, CHE 377 can only fulfill one of the requirements of the alternative to CHE 357, the alternative to research, or one of the electives.
4. It is recommended that students selecting the biological option take a minimum of one BIO lab (e.g., BIO 204).
5. CHE 346/461 may not be used as both an elective and as a substitute for BIO 361.
6. The Chemical Physics option requires two math courses in addition to Calculus I and II.
7. The following substitutions for ATM 397 need additional prerequisites: ENV 315/GEO 315 Groundwater Hydrology, MAR 336 Marine Pollution, MAR 351 Introduction to Ocean Chemistry.
8. Transfer Credit
At least 12 credits of upper-division work in chemistry must be taken at Stony Brook; these must be taken in at least two of the major subdisciplines (inorganic, physical, and organic chemistry).
9. The American Chemical Society's Committee on Professional Training has set nationally recognized standards for professional preparation in chemistry. The Chemistry faculty recommends that students intending to pursue careers in the chemical sciences secure ACS certification along with their Bachelor of Science degree. See below.

OPTIONAL: American Chemical Society Certification Requirements

Not required for degree completion

Chemical Science concentration: must complete the following additional course(s)

Requirements	Met	Notes
CHE 346/461 or BIO 361	☐	

Biological Chemistry concentration: must complete the following additional courses

Requirements	Met	Notes
One additional elective in chemistry or a related field	☐	
CHE 304	☐	
One of the following: 1. CHE 487 (6 or more credits), 2. CHE 495-496, 3. CHE 357 and CHE 377, 4. CHE 357 and CHE 487 (3 or more credits), 5. CHE 377 and CHE 487 (3 or more credits) or 6. a research experience in the chemical sciences at another college, university, or government laboratory of at least 180 hours (see note 11).	☐	

Chemical Physics concentration: must complete the following additional courses

Requirements	Met	Notes
CHE 346/461	☐	
One of the following: 1. 6 additional credits chosen from CHE 328 or CHE 384, CHE 377, CHE 487 (3 or more credits), or CHE 495-496, or 2. a research experience in the chemical sciences of at least 180 hours at another college, university, or government laboratory (see note 11).	☐	

Marine & Atmospheric Chemistry concentration: must complete the following additional courses

Requirements	Met	Notes
CHE 346/461	☐	
CHE 328 or CHE 384	☐	
One of the following: 1. CHE 487 (6 or more credits), 2. CHE 495-496, 3. CHE 357 and CHE 377, 4. CHE 357 and CHE 487 (3 or more credits), 5. CHE 377 and CHE 487 (3 or more credits) or 6. a research experience in the chemical sciences at another college, university, or government laboratory of at least 180 hours (see note 11).	☐	

Environmental Chemistry concentration: must complete the following additional courses

Requirements	Met	Notes
CHE 346/461	☐	
Either CHE 377 (in addition to CHE 357 or ENV 321), CHE 487 (3 credits), CHE 495-496, or a research experience in the chemical sciences at another college, university, or government laboratory of at least 180 hours (see note 10).	☐	

10. Additional Areas of Study
Because knowledge of computer programming is of great value to all chemists, CHE 358 or other course in computer programming is recommended.
11. Students who fulfill ACS requirements with an off-campus research experience must register for CHE 487 (0 credits). All students using CHE 487 to fulfill ACS requirements must prepare a written research report that will be evaluated by a Stony Brook Chemistry faculty member.