

Chemistry

Faculty: Hirsh, *Chair*, Hunt, *Associate Chair*; Abourahma, Allison, Baker, Bradley, Bunagan, Chan, Guarracino, Huang, O'Connor, Sen

Introduction

Chemistry is the science concerning the control, properties, reactivity, and detection of atoms and molecules in the world around us. Just as chemistry contributes to our existence, culture, and quality of life, the discipline of chemistry is a central science, with new frontiers continually being explored from which new benefits result. The Department serves the entire student population in addition to chemistry majors in a well-equipped state of the art facility that is part of the TCNJ Science Complex. Consistent with the goals of TCNJ, the chemistry faculty has substantial contact with each student. Faculty advisors meet regularly with students to assist in defining educational paths that will best allow the pursuit of career goals. Student development is enhanced through a seminar program, which includes discussions of the roles and responsibilities of chemists in today's society. Additionally, students have the opportunity to participate in research with faculty members in each of the sub-disciplines of chemistry.

TCNJ chemistry majors can pursue advanced degrees in analytical, forensics, organic, inorganic, physical chemistry, biochemistry, and computational chemistry at leading graduate programs throughout the country. Graduates are also well-prepared for entrance into dental, medical, and other professional schools. The program trains students for careers working in the chemical industry, as educators, and in careers at state and national government laboratories.

By combining the chemistry degree with an appropriate minor, students will also be well prepared to pursue careers that rely on a peripheral knowledge of chemistry. For example, students interested in pursuing a career in pharmaceutical sales and marketing can combine a major in chemistry with a minor in marketing. Chemistry specializations in Forensic Chemistry and the Chemistry and Physics of Condensed Matter are available as well, to further broaden the chemistry background of TCNJ students.

The Chemistry Department has a strong sense of community with a Student Chemist's Association (part of the ACS Student Affiliates) and a chapter of the National Chemistry Honor Society (Gamma Sigma Epsilon). Students completing the chemistry major will receive a Bachelor of Science degree. Students planning to pursue a career in chemistry or allied fields are strongly encouraged to complete the requirements for the American Chemical Society certification.

Recommended High School Preparation

A curriculum that develops and sharpens problem solving and critical thinking skills is paramount. Based on the interdisciplinary nature of modern chemistry, a good level of high school preparation for an entering chemistry major at TCNJ includes a year each of college preparatory chemistry, physics, and biology. The quantitative nature of chemistry

requires a solid mathematics background encompassing as much mathematics as possible, including algebra, geometry, trigonometry, and calculus, if available. Enrollment in Advanced Placement (AP) Chemistry is useful, but not required. Experience with word processing, spreadsheets, and presentation software is helpful, as is coursework or outside experience in computer programming. Four years of English encompassing solid writing skills are also important to success in the study of chemistry.

General Department Policies for All Students

A. Advanced Placement (AP) Scores

The Chemistry Department policy is for all student course selections to be made by the student in consultation with his/her academic advisor and/or the Department Chair. An AP score of 4 can provide credit for CHE 201/General Chemistry I. An AP score of 5 can provide credit for both CHE 201 and 202/General Chemistry I and II. While students with a chemistry AP score of 5 may receive credit for CHE 201 and CHE 202, the Department usually recommends that they take CHE 202 or HON 202 before enrolling in higher-level Chemistry courses. We make this recommendation for the following reasons: 1) The TCNJ General Chemistry curriculum provides an important foundation for higher-level chemistry courses; 2) Many students take AP Chemistry their junior year in high school and find that they have forgotten much of the material by their first year in college; 3) A high level of laboratory competency will be gained in CHE 201 and 202 (most high school chemistry courses do not provide the laboratory experience needed for students to operate comfortably in higher-level laboratories); 4) First year is a period of adjustment and in addition to technical and critical thinking skills, the CHE 201 and 202 curricula emphasize time management and study skills required for upper-level chemistry courses; and 5) Students who take Organic or Analytical Chemistry in their first semester at TCNJ generally struggle in these courses when they are taken during the first year of college.

Students with a strong high school laboratory background, a Chemistry AP score of 5, AP credit in Physics or Mathematics, and a high level of personal maturity are encouraged to enroll directly in courses such as CHE 310/Analytical Chemistry or CHE 331/Organic Chemistry I. Many students choose to fulfill liberal learning or language course requirements during their first year, in lieu of taking upper-level chemistry courses. All decisions about course enrollment should be made in consultation with the student's academic advisor and the Department Chair.

A. Repeating a Course

Students may repeat any course in chemistry, with the following provisions. A student *may* be exempted from repeating the laboratory component of a critical content course if the course was passed with a grade of D or better and the lab grade was 80% or better. The lab component must be repeated regardless of the lab grade if a student is repeating a course they failed. For upper-level chemistry courses, this policy is at the discretion of the instructor.

There is a limit to the number of times a student can repeat courses in chemistry. Students may register for a course no more than two times, whether a 'W' or letter grade

is received. Exceptions to this rule may only be granted by the department chair and only under extenuating circumstances, such as a severe illness or family life event while taking the chemistry course. Students wishing to take a course more than two times must complete a [Repeat of Course Authorization Form](#).

C. Progression in the Chemistry Course Sequence

Enrollment in CHE 202, CHE 310, CHE 331, and CHE 332 requires that the student has earned a minimum grade of C- in the pre-requisite courses (see Table). The Chemistry Department has found that students earning grades lower than C- in pre-requisite courses will struggle significantly in the subsequent course. If, after semester grades have been issued, a student discovers that he/she will not meet this requirement, they must de-register for the subsequent course (for example, a student who has registered for CHE 202 but completes CHE 201 with a grade of D+ must de-register from CHE 202 and repeat CHE 201). The Chemistry Department has the authority to de-register students who have not met course pre-requisites and will do so at the end of each semester for students who do not meet the minimum grade requirement. Please note that any student enrolled in courses with improper grade pre-requisites is in violation of the [Student Conduct Code](#).

To enroll in	A minimum grade of C- is required in	Performance Standard for the Major	
CHE 202	CHE 201/HON 201	CHE 201/HON 201	C
CHE 310	CHE 202/HON 202	CHE 202/HON 202	C
CHE 331	CHE 202	CHE 331	C
CHE 332	CHE 331	CHE 310	C

General Departmental Policies For Chemistry Majors

A. Chemistry Coursework

Once a student is accepted into The College of New Jersey as a Chemistry major, all of the student's chemistry courses must be completed at TCNJ, unless approval is granted by the department chair. Approval for a chemistry course substitution from another college or university will not be granted if the student has failed or withdrawn from the corresponding course at TCNJ. It is College policy that the course be repeated at The College of New Jersey to satisfy the requirement and exclude the previous grade and include the new grade, if it is better, in the calculation of the grade point average.

Transfer students are required to take a minimum of four course units of chemistry (courses numbered CHE 300 or above) in addition to other college requirements for graduation as chemistry majors from TCNJ.

B. Program Entrance, Retention, and Exit Standards

Every major program at the College has set standards for allowing students to remain in that program, to transfer within the College from one program to another, and to graduate from a program. The following are the standards for all TCNJ Chemistry programs. Minimum grades are noted in parentheses:

- 1) Retention in the program is based on the performance standards in the following "critical content courses":

CHE 201/General Chemistry I (minimum grade of C) CHE 202/General Chemistry II (minimum grade of C) CHE 331/Organic Chemistry I (minimum grade of C) CHE 310/Analytical Chemistry (minimum grade of C)
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- 2) Correlate coursework (PHY, MAT) and other non-major courses can be taken at other institutions and transferred to TCNJ, in accordance with TCNJ policy (see Undergraduate Bulletin for full details). Once a student is accepted into the Chemistry major at TCNJ, all of the student's chemistry courses must be completed at TCNJ unless pre-approval is granted by the Department. Enrollment in 300-level or higher equivalent courses at another institution are generally not approved except under extenuating circumstances (e.g., enrollment in a chemistry course during a study abroad semester, enrollment in a course currently not scheduled at TCNJ). Approval for a chemistry course substituted from another college or university must be granted prior to enrollment in the course. Approval will not be granted if the student has failed or withdrawn from the corresponding course at TCNJ.
- 3) Graduation requires a GPA of 2.0 in courses required for the major.

Transferring Into the Major

Students may transfer majors as either internal or external transfers. Whatever the circumstances, students transferring into the TCNJ Chemistry major must take a minimum of four course units of chemistry (courses numbered CHE 300 or above) for graduation as chemistry majors from The College of New Jersey.

Students are admitted to TCNJ with a specified plan or may choose to enter as Open Option students in a designated school. Any currently enrolled student has the right to apply and be considered for entrance into an academic major in accordance with program entrance standards (see section on Departmental/Program Entrance, Retention, and Exit Standards). Students should understand, however, that certain majors may not be able to accept them because of high student demand. Students seeking to change a major should begin the process as early as possible in the semester in which they wish to change their major. This will help to ensure that students will meet any departmental deadlines and/or the campus wide deadline dates as established by the Office of Records and Registration and posted annually on the [academic and registration calendar](#). It also will provide time for the new program/plan (if approved) to be effective for the next registration period. Students may download the [Change of Major/Second Major Form](#) or pick up a copy in the main Chemistry Office C108 or the office in Green Hall 112. Students should also print a copy of their TCNJ unofficial transcript from the PAWS Student Services Center and submit it and other required information to the department into which the change is requested. A short explanation for the reason for transferring into the major is recommended and will help with the evaluation process. With this information and

discussion with the student, Chairs (and their designated committees) will make determinations as to whether program/plan changes are approved. When students are admitted to a program/plan, they should be provided with a statement of degree requirements along with a new academic advisor. The student is expected to follow the requirements for the year in which the change takes effect unless special exemption is made by the Department Chair and noted on the form. Approved changes will be effective on the date they are received by the Office of Records and Registration and will be recorded as of that date. Recently, successful applications for internal transfer to the chemistry major have:

- i. completed 2 semesters at TCNJ (this must include, at minimum, one graded chemistry course);
- ii. received at least a C+ in all chemistry courses and at least a C in correlate courses taken at TCNJ;
- iii. have a TCNJ GPA of 3.0 or higher.

Programs Within Chemistry

Students can obtain one of three possible BS degrees in chemistry, two of which are American Chemical Society (ACS) certified degrees. In addition to the description of these options provided here, students should seek guidance from their academic advisors for further information. Chemistry degrees include:

ACS-certified BS Chemistry Degree. This degree is well-suited for students interested in working in industry at a bachelor's level, and for students pursuing advanced degrees in health, law, business, and fields requiring a working knowledge of chemistry.

ACS-certified BS Chemistry Degree, with Research. This degree is well-suited for students interested in working in industry or obtaining a graduate degree in chemistry or related fields.

BS Chemistry Degree. This degree is suited for students pursuing careers in secondary education, health related fields or interested in obtaining a double-major or a minor in another field.

In addition to the above, students can pursue the following programs and areas of specialization:

- 1) **Forensic Chemistry Specialization.** This specialization is appropriate for students interested in crime lab work, industrial forensics, analytical chemistry, and graduate programs in chemistry and forensic science.
- 2) **Chemistry and Physics of Condensed Matter Specialization.** This specialization is appropriate for students interested in materials science, biophysical chemistry, nanotechnology, crystal engineering, magnetism, and related fields that bridge the fields of Chemistry and Physics.
- 3) **Chemistry Secondary Education Degree.** In conjunction with the Department of Education, students enroll in educational courses, which lead to certification in

teaching chemistry at the secondary level in the state of New Jersey. Enrollment in Secondary Education should be completed no later than the second semester of the first year in order to complete the degree in four years.

- 4) **Seven-year BS Chemistry/MD Program.** This program applies only to students majoring in Chemistry and who were admitted as first year students to the TCNJ/NJMS Seven-Year BS/MD program. Students must be admitted to the Seven-year BS Chemistry/MD Program prior to matriculation at TCNJ– see [Seven-Year Medical Program](#) for general information about the BS/MD program. Please note that the Seven-year BS Chemistry/MD Program is an accelerated program through Rutgers New Jersey Medical School and is not the typical route to a medical degree (typically, students complete a four-year bachelor’s degree in biology, chemistry, or another major prior to starting medical school; see the section below titled *Pre-Health Profession Option for Chemistry Majors*).

Students entering TCNJ as chemistry majors are initially enrolled in the ACS-certified B.S. program (non-research track) but may transfer to the non-ACS program after faculty advisement and department approval. Students who identify a research advisor and begin enrollment in CHE 493 may immediately transfer into the ACS-certified with research track.

All degrees require the completion of a core curriculum, followed by additional requirements that are based on the specific degree track chosen. The following core courses are required for all TCNJ students enrolled in the chemistry program:

Chemistry Core Courses (9.5 Course Units)	
CHE/HON 201 General Chemistry I	1 course unit
CHE/HON 202 General Chemistry II	1 course unit
CHE 310/Analytical Chemistry	1 course unit
CHE 331/Organic Chemistry I	1 course unit
CHE 332/Organic Chemistry II	1 course unit
CHE 371/Quantum Chemistry	1 course unit
CHE 372/Chemical Thermodynamics and Kinetics	1 course unit
CHE 430/Biochemistry	1 course unit
CHE 451/Inorganic Chemistry - Structure and Bonding	1 course unit
OR	
CHE 452/Inorganic Chemistry– Reactions and Mechanisms	
CHE 099, 316, 317/Chemistry Seminars	0.5 total course unit
Correlate Courses (4 Course Units)	
MAT 127, 128/Calculus A, B	2 course units
PHY 201, 202/Physics I, II	2 course units
Options Courses^a (5 or 3 Course Units)	
<i>See course descriptions for prerequisites</i>	
CHE 360/Forensic Chemistry	

CHE 370/Special Topics in Chemistry CHE 410/Advanced Analytical Chemistry– Instrumental Analysis CHE 451/Inorganic Chemistry– Structure and Bonding OR CHE 452/Inorganic Chemistry– Reactions and Mechanisms ^b CHE 470/Advanced Topics in Chemistry CHE 471/Forensic Applications of Mass Spectrometry CHE 474/Special Topics in Biochemistry CHE 476/Special Topics in Organic Chemistry CHE 478/Special Topics in Condensed Matter CHE 493/Independent Research	
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^a Courses outside the department (such as Genetics, Molecular Immunology and Human Disease, Mathematical Physics, Linear Algebra, or Modern Physics) can be substituted for a 300 level options course upon approval by the Department Chair.

^b A student may take either CHE 451 or CHE 452 to satisfy the core requirement within the major. CHE 451 and CHE 452 are taught in the spring, in alternating years. For a student who takes both of these classes, CHE 451 will be used to satisfy the core requirement, and CHE 452 will be counted as an advanced elective course. For a student who does not take CHE 451, CHE 452 will be used to satisfy the core requirement (and will not be counted as an advanced elective).

Chemistry Degree Programs			
Chemistry Degree Programs	Additional requirements beyond the core course requirements	Forensics Specialization	Chemistry and Physics of Condensed Matter Specialization
ACS certified BS Chemistry degree	One Chemistry Option 300- or 400- level course with laboratory ^a Two Chemistry Options 400 level with laboratory (CHE 410 is strongly recommended) ^a	Available option	Available option
ACS certified BS Chemistry degree, with research	One 300- or 400-level Chemistry Option course, with <i>or without</i> laboratory Two 400-level Chemistry Options courses, with <i>or without</i> a laboratory ^b Two units (equivalent to 4-8 total credit hours) of CHE 493 Independent Research	Available option	Available option
BS Chemistry Degree	One Chemistry Option 400-level course, with <i>or without</i> laboratory	Available option	

	Two Chemistry Options 400- or 300-level course, with <i>or without</i> laboratory ^c		
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^a All three chemistry options must have a laboratory component to complete the laboratory hours required by the ACS (400 total hours).

^b A third semester of CHE 493/Independent Research may substitute for the 300/400 level option. Note that students taking a third semester of CHE 493 must take two 400 level options to complete their degree requirement.

^c Enrollment in CHE 493 will be accepted for up to 1 unit and will only count as fulfilling the 300/400-level course requirement.

Dual Degree Programs	Available Chemistry degree options	Additional requirements
Secondary Education Chemistry Degree Programs	ACS-certified BS Chemistry degree ACS-certified BS Chemistry degree with research <i>or</i> BS Chemistry Degree ^a	See full description of program, below
Seven-year BS Chemistry/MD Program	BS Chemistry Degree	See full description of program, below

^a Student Teaching may be used to satisfy a 300 or 400-level Chemistry Options course.

1. The Forensic Chemistry Specialization (CFOR Specialization)

The Forensic Chemistry Specialization builds on the TCNJ B.S degree in Chemistry and is open to all majors in the Chemistry Department. Completion of the C.FOR Program provides specialized training into the chemical aspects of the applied field of forensic chemistry. B.S. graduates with this specialization can pursue a wide range of careers or graduate education in Chemistry.

To complete the Forensic Chemistry Specialization, students must complete the following program in addition to all requirements for the B.S. in chemistry program: 1) two criminology courses (CRI 200 or 201, and 301) and 2) two Forensic Chemistry courses, CHE 360 and CHE 471. Enrollment in CHE 410/Instrumental Analysis is strongly recommended, as well as a research experience or internship in an area related to forensics science. The CRI courses are considered as correlate courses to the Specialization. All Forensic Chemistry courses will have an accompanying laboratory. In addition, students completing the specialization are encouraged to attend a meeting in a related area such as the *American Academy of Forensic Sciences Annual Meeting*.

To enroll in the Forensic Chemistry Specialization, students must formally [apply](#) for the Forensic Chemistry Specialization (CFOR) as their specialization.

2. Chemistry and Physics of Condensed Matter Specialization (CPCM Specialization)

The Chemistry and Physics of Condensed Matter Specialization is an interdisciplinary program open to chemistry and physics majors in the School of Science, who have a strong interest in creating new organic, biological, or inorganic materials and/or exploring the properties and applications of these materials. Students should have a background in chemistry and physics and be comfortable with mathematics. Chemistry students are free to pursue research projects in either the Chemistry Department or Physics Department. Chemistry majors who successfully complete this program will graduate with a B.S. in Chemistry and a specialization in the Chemistry and Physics of Condensed Matter. Students will be prepared to pursue a wide variety of careers or graduate study in chemistry, biophysics, or materials science.

To complete the Chemistry and Physics of Condensed Matter Specialization, students must complete the following coursework in addition to all requirements for the B.S. in Chemistry program: 1) PHY 306/Mathematical Physics or MAT 229/Multivariable Calculus; 2) PHY 311/Analog and Digital Electronics or PHY 451/Advanced Lab or CHE 410/Instrumental Analysis; and 3) at least three of the following options courses: PHY 345/Physics of Clouds and Climate, PHY 436/Condensed Matter, CHE 451/Inorganic Structure and Bonding, CHE 478/Special Topics in Condensed Matter (may be taken more than once), and PHY 478/Photonics, Optics, and Materials. See course listings for additional details. Students must complete at least one PHY course greater than 200-level and at least one 300/400-level CHE course.

Students may apply for the specialization at any time but are encouraged to do so in their sophomore year to facilitate planning and timely completion. To enroll in the program, students should formally [apply](#) for the Chemistry and Physics of Condensed Matter Specialization (CPCM) as their second major/concentration.

3. Chemistry Secondary Education Program

The Chemistry Secondary Education program provides TCNJ students with a B.S. degree in Chemistry and Secondary Education certification. Students must complete the requirements for either an ACS-certified or a non-ACS certified major, as listed above. In addition to meeting the requirements for the major, the Chemistry Secondary Education student must meet the College requirements of liberal learning, the professional education sequence (see below), and state certification. This requires careful course planning with the student's academic advisor(s) starting with the first semester of classes. In order to be admitted to the program required for the preparation of science secondary education teachers, a student must have satisfied one of the following: 1) passed the Praxis Core Academic Skills of Educators test (<https://www.ets.org/praxis/about/core/content/>); 2) achieved a combined SAT score of 1660 or higher (reading, math, writing); or 3) achieved an ACT score of 23 or higher. In addition, a student must meet the following GPA requirements as a prerequisite to field placements: 2.75 for Junior Field Experience (JFE) and a 2.75 for student teaching (CHE 490). Finally, a student must have an overall GPA (CGPA) of 3.0 for graduation in the secondary education program. They also must meet the state hygiene/physiology requirement, the state Harassment, Intimidation, and Bullying Prevention (HIB) training certificate requirement, and pass the appropriate Praxis examination.

NOTE: A student wishing to obtain Physical Science Certification must fulfill the CHE 300-level options course requirement with an Advanced Physics course and take a second Advanced Physics course. Teacher-education candidates will be provisionally certified for their first year of teaching. After one year of successful teaching, the candidate is eligible for a permanent certificate.

An overview of the entire secondary-level teacher preparation sequence for students can be found in the section of this bulletin for the [Department of Education Administration and Secondary Education](#).

Professional Education Sequence (9 Course Units)	
SED 224/Adolescent Learning and Development	1 course unit
EFN 299/School and Communities	1 course unit
SED 399/Pedagogy in Secondary Schools	1 course unit
PHY 390/Methods of Teaching Science	1 course unit
SPE 323/Secondary Content Literacy in Inclusive Classrooms	1 course unit
EFN 398/Historical and Political Context of Schools	1 course unit
CHE 490/Student Teaching	2 course units
SED 498/Collaborative Capstone for Professional Inquiry	1 course unit

Recommended First-Year Sequence (Actual courses may vary with advisement and course availability)Fall Semester	Spring Semester
FSP/First Seminar CHE 099/Orientation to Chemistry XXX/Liberal Learning/Language ^a CHE 201/General Chemistry I MAT 127/Calculus A	CHE 202/General Chemistry II MAT 128/Calculus B PHY 201/General Physics I WRI 102/Academic Writing ^b

^a It is recommended that students exempted from the language requirement take another liberal learning course. Note: Arabic 151 and 152, Chinese 151 and 152, Japanese 151 and 152, and Russian 151 and 152 are intensive courses and carry two course units of credit each. Students should take this into account when planning a normal four-course semester.

^b It is recommended that students exempted from this course take another liberal learning or language course.

4. Biochemistry Self-Designed Major

Although the chemistry department does not provide a biochemistry major, students may obtain a self-designed biochemistry major through the College. It is a B.A. degree that includes the following course sequence:

CHE/HON 201 General Chemistry I
CHE/HON 202 General Chemistry II
BIO 201/Foundations of Biological Inquiry
BIO 211/Eukaryotic Cell Biology
BIO 231/Genetics

CHE 331/Organic Chemistry I
 CHE 332/Organic Chemistry II
 CHE 310/Analytical Chemistry
 CHE 372/Thermodynamics/Kinetics
 CHE 430/Biochemistry
 CHE 099/Orientation to Chemistry
 CHE 316/Sophomore Seminar
 CHE 317/Junior Seminar
 Three CHE 400-level and BIO 400-level course with a molecular emphasis
 (at least one BIO and one CHE course)

Registration in CHE 493/Independent Research in a project with a biochemical emphasis is highly recommended for students pursuing a degree in biochemistry. Students wishing to apply for the Biochemistry Self-Designed Major should consult with their academic advisor, the Department Chair, and must complete an [Authorization for Self Designed Major](#) form.

5. Seven-year BS Chemistry/MD Program degree

Admission to this program is dependent on dual acceptance into TCNJ and Rutgers NJMS programs. Applicants are reviewed and evaluated prior to matriculation at TCNJ. Certain changes to the core chemistry curriculum have been made to allow for timely completion of the chemistry degree, including: 1) substitution of BIO 231/Genetics for one 300-level Chemistry options course with laboratory; 2) enrollment in Molecules, Cells, and Systems at NJMS as a substitute for CHE 350/Essentials of Biochemistry; and 3) enrollment in CHE 493 at TCNJ as substitute for NJMS research requirement. Students in the Seven-year B.S. Chemistry/M.D. Program should take BIO 201/Foundations of Biological Inquiry their first year at TCNJ.

Relevant Changes to the Core Curriculum for the B.S. Chemistry/M.D. Program

- BIO 231/Genetics (counts as one Chemistry options 300 level course)
- Phase I: Core Biomedical Curriculum/Molecules Cells, and Systems at NJMS (counts as CHE 430)

Pre-Health Profession Options for Chemistry Majors

Students interested in health-related careers such as medicine, dentistry, pharmacy, etc. may study for admission to these professional schools through the chemistry major. Careful selection of courses within this major and within free electives will prepare the student to meet health professional school admission requirements. (See also [Medical Career Advisory Committee](#)).

Chemistry Minor

A minor in chemistry is comprised of five full CHE courses including CHE 202 (or Honors 202) and four other CHE courses numbered 300 or higher, but not including CHE 316, 317, 318, 399, or 490. The minimum grades in CHE 201, CHE 202, and CHE 331 and the minimum GPA for retention and completion of the minor are the same as for the major. Applicants interested in obtaining a Chemistry Minor must complete the TCNJ [Application for Minor form](#) and provide a copy of their unofficial transcript, which should include at least three completed TCNJ chemistry courses.

Study Abroad

Students pursuing a degree in chemistry may study abroad for a semester. Any student interested in studying abroad should meet with his/her faculty advisor before the sophomore year in order to plan a curriculum so that the student may complete his/her studies in four years. An appointment with the College's [Center for Global Engagement](#) is also required. The student must receive approval from the chair of chemistry in order for options courses taken abroad to count toward requirements for the major.

Appendix– Program Planners

Chemistry department planners for each degree option may be accessed by clicking one of the following links:

	Chemistry Degree Programs	Secondary Education Degree Programs
ACS certified BS Chemistry degree	CHEM_BS_03	CHEM_BS_04
ACS certified BS Chemistry degree, with research	CHEM_BS_01	CHEM_BS_02
BS Chemistry Degree	CHEM_BS_05	CHEM_BS_06
Forensics Specialization	CHEM_BS_CFOR	
Chemistry and Physics of Condensed Matter	CHEM_BS_CPCM	
Chemistry/7-Year Medicine	CHEM_BS_7YR	