

The College of New Jersey

Chemistry Department

Preregistration Newsletter
for Spring 2021 Registration

Hello Chemistry Majors!

The registration window for Spring 2021 begins November 3th. Here is some information that might be useful for planning your schedule:

- [Preparing for your Advising Meeting](#)
- [Important Notes and Changes](#)
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Upcoming Dates to Remember

Mid-semester progress reports	October 1-20, 2020
Advising Window	October 18-November 6, 2020
Enrollment Period	November 3-13, 2020
Thanksgiving Break	November 23-27, 2020

Preparing for Your Advising Meeting

You must meet with your advisor BEFORE you can register. Hold flags have been placed on your accounts that will be removed after your meeting.

Please remember to:

- Make an advising appointment via Google calendar with your advisor. Your advisor will send you an invitation. **Advising will occur remotely.** Your advisor will be in contact with information about their advising appointments and means of virtual communication for the advising appointments.
- Check out course offerings and requirements on PAWS. Use the Academic Requirements feature in PAWS to see the courses you need and to plan your course schedule. Fill your shopping cart with the courses you need, including alternate selections in the event of closed sections. **Create at least one backup plan.**
- Use the Validate feature on PAWS to make sure you have the correct pre-requisite courses.
- If you took any courses for Credit/No Credit in the Spring of 2020 that is a prerequisite for another course, registration could be impacted if the cart is not validated! Those students who might encounter this issue have already been messaged by records and registration. If you have a validation error due to the credit/no credit option, contact the chair of the department of the class you want to take.
- Review the goals of academic advising:
<https://academicaffairs.tcnj.edu/files/2016/11/Academic-Advising-Agreement.pdf>
1st Year and Transfer Students! If you didn't do this previously, make sure to download, read, sign, and bring this Advising Agreement to your academic advisor.
- Send copies of your *Chemistry Department Registration Planning* form (see page 9), your proposed course schedule(s) for Spring 2021, and an unofficial transcript to your advisor prior to your virtual meeting via Zoom, Google hangout, or whatever communication forum your advisor is using.
- **First years and sophomores** are now being advised using a cohort style for additional advising.
- **Sophomores** your advisor may have changed due to the shift to cohort advising check PAWS to see who to sign up with for an individual appointment.

If you are unable to enroll in a Chemistry course because it has already reached capacity, please visit the course waitlist at <https://chemistry.tcnj.edu/waitlists/>.

The College [WAITLISTING PROCESS](#)

Important Notes and Changes

- **Flex or Remote only:** PAWS will be updated shortly with all the Flex (FX) and remote only (RO) offerings. A few classes that still need to be staffed, typically adjunct sections, may be listed as To Be Announced (TB). As a reminder if a class is Flex, you should be able to participate in a remote only mode. If you register for a class as remote only, there is no opportunity to come onto campus. Faculty members will decide their flex or remote only mode of teaching. If a course is listed as Flex, the faculty member will decide on how Flex will work and how often you will come into the classroom/lab.
- **CHE 493 Independent Research**
The department is currently accepting applications for CHE 493 Independent Research for students hoping to start research Spring 2021. Given our remote format, the usual paper-based application has been changed to a google form. This [Research Placement Application](#) is due Tuesday, October 27th by 11:59 pm. Students will be notified of the results by Monday, November 2nd. Check your email for more detailed information. If you have any questions about this information or procedures for CHE 493 enrollment, please contact your advisor. Please note that while the application above is only for students beginning research Spring 2021, all students participating in research will need to register for 493 during the Spring 2021 registration process.

Note from the chair (BCC): We are dedicated to offering research opportunities to as many students as possible. Under the current COVID-19 circumstances, we have been limited by safety concerns and proper social distancing in the laboratory. We will try our best to match people and also take care of the current juniors when they become seniors so they can have a robust research experience. The department may try some creative remote research experiences to accommodate as many students as possible.

- **Attention First-year and Sophomore CHMT majors!**
New Secondary Education requirements for minimum GPA are in effect and may impact your course/career decisions. Ask your advisor for more information.
- **CHE 370 Special Topics in Chemistry: Environmental Chemistry and CHE 410 Instrumental Analysis will be taught in Spring 2021.**
- **Remember to sign up for Seminar!**
Sophomore and Junior Seminar courses (CHE 316 and CHE 317) are held on Wednesday mornings.
- **Looking ahead to Fall 2021, the Advanced Options Chemistry courses are proposed to be Protein Chemistry and Green Chemistry. These courses are tentative.**
- The Chemistry of Condensed Matter Specialization is now the Material Science Specialization. The curriculum is unchanged, see page 5 and the Biochemistry Specialization details found on page 6.

- CHE 452 will no longer be alternated with CHE 451. CHE 451, Inorganic Structures and Bonding will be offered every fall and taught by the inorganic faculty. In the future, CHE 452 will be offered on a rotating basis, as a special topics course in inorganic chemistry.
- Summer 2021 registration will begin November 3. Winter 2021 registration will continue through the first day of Winter 2021 classes.

Contemplating What Liberal Learning Courses to Take?

Some questions to guide you to the most beneficial Liberal Learning courses.

- Does a course provide you with skills and knowledge that support your major, career, or graduate/professional school?
- Could a course help you explore other potential majors or minors?
- Do you have interests outside your major that you would like to pursue but not necessarily major in?
- Would a course broaden your horizons or provide you with a new perspective?
- What courses might enhance a study-abroad experience or an internship?
- Which courses have topics you find interesting?

Liberal learning course listings can be found by searching courses in PAWS and setting the “Course Attribute” to Liberal Learning Domains, then setting the “Course Attribute Value” to one of the subdomains. A full list of Liberal Learning courses can be found [here](#).

The image shows a search filter interface with four dropdown menus on the left and a list of options on the right. The dropdowns are labeled: Campus, Location, Course Attribute, and Course Attribute Value. The Course Attribute dropdown is set to 'Liberal Learning Domains'. The Course Attribute Value dropdown is open, showing a list of subdomains with a checkmark next to the first one. A 'CLEAR' button is visible on the right side of the interface.

Campus	<input type="text"/>
Location	<input type="text"/>
Course Attribute	Liberal Learning Domains
Course Attribute Value	<input checked="" type="checkbox"/> Behavioral, Social or Cultural <input type="checkbox"/> Literary, Visual & Perform Arts <input type="checkbox"/> Natural Science <input type="checkbox"/> Natural Science with Lab <input type="checkbox"/> Quantitative Reasoning

CLEAR

Specializations in the Chemistry Department

Materials Science Specialization

The Materials Science 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 Bachelor of Science in Chemistry and a specialization in the Chemistry and Physics of Materials Science. Students will be prepared to pursue a wide variety of careers_or graduate study in chemistry, biophysics, or materials science.

To complete the Materials Science specialization, students must complete the following coursework:

- 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 Chemistry structures 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 options course with a PHY prefix and at least one with a CHE prefix.

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 use the [Change of Major Form](#).

Biochemistry Specialization

This specialization is meant for students who are interested in molecular biology, biochemistry, biophysics, bioanalytical, bioorganic, and/or bioinorganic chemistry. Students pursuing this specialization see the interconnectedness of these disciplines, will gain insight into the interdisciplinary nature of chemistry, biology and physics and wish to pursue interdisciplinary postgraduate goals (i.e. in industry, medical, or graduate programs). Students will graduate with a B.S. in Chemistry with a specialization in Biochemistry. The BS may be American Chemical Society (ACS) certified or non-ACS and can be with or without a research intensive focus. To complete the Biochemistry Specialization, students must take the standard chemistry core courses, with the option to take *either* CHE 371 (Quantum Chemistry) *or* CHE 372 (Chemical Thermodynamics, strongly recommended). In addition, required Correlate Courses include the standard Math and Physics courses for a B.S. in Chemistry, as well as BIO 201 (Foundations in Biological Inquiry) and BIO 211 (Eukaryotic Cell).

Students are also required to take *either*:

- 1) two CHE 474 Advanced Topics in Biochemistry courses (including those that may be cross-listed from other CHE 47X) *or*
- 2) one CHE 474 (or cross-listed CHE 47X) and BIO 471 (Genomics and Bioinformatics) *or*
- 3) one CHE 474 (or cross-listed CHE 47X) and one BIO 470 Special Topics class from an approved list.

Depending on their degree track, Chemistry majors pursuing the Biochemistry Specialization would have the following options course requirements:

ACS w/Research: One options course at the 300 or 400 level and two units of CHE 493 Independent Research or three full units of CHE 493 Independent Research. **ACS:** One options course with a lab at the 300 or 400 level. **Non-ACS:** No options courses are required.

Students may apply for the specialization at any time but are encouraged to do so earlier, such as in their sophomore year, to aid in planning for timely completion. To enroll in the program, students should formally apply for "Biochemistry" as their specialization using the [Change of Major Form](#).

Advanced Options for Spring 2021

CHE 410 Instrumental Analysis

Instructor: Dr. Rebecca Hunter

Prerequisites: CHE 310

Texts: TBD

Lecture: M/Th 8:00 - 9:20 am

Lab: Th 9:30 am - 12:20 pm

Analytical chemistry is the science of chemical measurements. Analytical chemists work to improve established methods of analysis, extend existing methods to new types and smaller amounts of samples, develop new methods of analysis, and discover more powerful tools for analyzing data. This course serves as an introduction to the chemical principles behind a variety of instrumental techniques, as well as advanced analytical method development. The unique “flex” nature of the lab component will allow students to gain experience with “lab-on-a-chip” device development in tandem with traditional laboratory instrumentation.

You can find examples of labs that use these portable, paper-based devices on the [CHE 310 lab website](#) for this semester.

The PAWS prereq of CHE 371 may cause validation problems. Dr. Hunter will only require CHE 310 as the prerequisite. If you have not taken CHE 371 and want to take CHE 410, please send an email to the chair chemchair@tcnj.edu to enroll in the class.

CHE 370 Environmental Chemistry

Instructor: Professor Mike Aucott

Prerequisites: None

Texts (recommended): *Chemistry of the Environment, 3rd Edition*

Lecture: T/Th 5:30 - 6:50 pm

Lab: None

Environmental Chemistry will explore human impacts on the environment from a chemistry perspective. Topics will include an overview of the development of environmentally friendly syntheses and products (“green” chemistry) and an examination of key reactions involved with the generation, treatment, and environmental fate and transport of pollutants of air, water, and soils. Chemistry associated with agriculture and food supply and the production of energy will be covered. The alteration of global biogeochemical cycles, particularly those involving carbon and nitrogen, will also be examined. A major focus of the course will be global warming and climate change. Course material will primarily be based on the textbook, *Chemistry of the Environment, 3rd Edition* by Thomas Spiro, Kathleen Purvis-Roberts, and William Stigliani, 2012, University Science Books. The course will include the development of some simple spreadsheet-based environmental models, supplementary readings and presentations by guest speakers, and viewing and science-based appraisal of two or more prominent documentaries on environmental issues.

Looking Ahead to Options Courses for Fall 2021?

Advanced Options will tentatively be:

- Special Topics - Protein chemistry, Dr. Sen
- Special Topics - Green and Sustainable Chemistry, Applications in catalysis, energy, and materials, Dr. O'Connor

Meet the New Chemistry Faculty

[Dr. Lauren Rossiter](#)



Lauren Rossiter received her Ph.D. in Chemistry from Temple University and her B.S. in Biochemistry from Messiah College. While at Temple, she served as a teaching assistant for courses in organic chemistry, general chemistry, and chemistry for non-majors, and her teaching interests focus on organic and natural product chemistry. Dr. Rossiter's primary research interest is photochemistry and the complex scaffolds that can be obtained from photochemical reactions. Her work has been published in the journal ACS Infectious Diseases, and she has presented research at several chemistry conferences. In addition, Dr. Rossiter is committed to community outreach, volunteering both as a local science fair judge and as a mentor to young students developing science fair projects.

Chemistry Department Registration Planning

Date:

Name:

Advisor:

List the courses you plan to take for each semester, paying special attention to the chemistry and correlate courses.

Usual Fall Offerings	Usual Spring Offerings
General CHE201/HON 201 Organic CHE331, CHE332 Analytical CHE310 Thermodynamics CHE372 Instrumental Analysis CHE410 Inorganic CHE451 Advanced Option CHE47X First year seminar CHE099 Sophomore Seminar CHE316 Junior Seminar CHE317 Research CHE493 (requires application)	General CHE202/HON202 Organic CHE332, CHE331 Analytical CHE310 Quantum Chemistry CHE371 Biochemistry CHE430 Advanced Option CHE370 Advanced Option CHE47X/452 Research CHE493 (requires application) Sophomore Seminar CHE316 Junior Seminar CHE317

FALL		SPRING	
First Year			
Sophomore Year			
Junior Year			
Senior Year			