

Doctoral Student Handbook

School of Graduate Studies

Rutgers University



Chemistry & Chemical Biology



RUTGERS

School of Arts and Sciences

TABLE OF CONTENTS

INTRODUCTION	3
GETTING STARTED	3
• Academic Integrity	
• NetID	
• ID Card	
• Building & Lab Access	
• Parking	
• Course Registration	
• MyRutgers	
• Address/Contact Number	
• Term Bill	
• Health Insurance	
• Key CCB Contacts	
PROGRAM REQUIREMENTS	6
• Coursework	
• Degree Credits	
• Credit Limit	
• Lab Choice	
• Academic Complaints/Grade Appeals	
• Good Academic Standing	
• Academic Warnings	
• Academic Dismissal	
• Annual Progress Reports	
• Individual Development Plans	
TEACHING ASSISTANTSHIPS	9
• Responsibilities	
• University Standards	
• Language Training for International Students	
• Union Protocol and Procedures	
CORE CURRICULUM	10
• Typical Timeline, Requirements, and Deadlines	
• Suggested Course Sequence	
PhD GRADUATION REQUIREMENTS	13
• Qualifying Exam	
• Critical Analysis of Research Literature (611)	
• In-Field Research Proposal (612)	
• 611 & 612 Scheduling	
• Candidacy	
• Post-Candidacy Committee Changes	
• Final Oral Examination (Dissertation)	
FREQUENTLY ASKED QUESTIONS	15

INTRODUCTION

Welcome to the Department of Chemistry & Chemical Biology's (CCB) doctoral program! Beginning with lecture courses, the PhD program provides graduate students with a solid academic foundation before they join a faculty research lab to undertake meaningful and important research. This process culminates with a dissertation.

This student handbook contains an overview of CCB, as well as School of Graduate Studies (SGS), policies, resources, and graduation requirements. It is designed to provide students a ready reference of basic information needed to successfully complete their program. This is a working document that is continuously revised to align with university and program accreditation requirements; please refer to the digital version on the CCB website for the most up-to-date copy.

Many steps involved in the PhD journey involve submitting required forms by specific deadlines so that faculty and staff can monitor degree progress. Required forms are available on the CCB and SGS websites and can be provided by the department upon request. While this handbook is intended to provide common information, it is ultimately the student's responsibility to verify fulfillment of graduation requirements.

CCB departmental policies largely overlap with, but do not supersede, the policies and procedures of SGS. This handbook is meant to supplement, and in some cases clarify, but not replace the policies and procedures listed on the SGS website: <https://grad.rutgers.edu/current-students/policies-procedures-students>.

GETTING STARTED

All students should conduct themselves professionally and ethically. Candidates are expected to exercise good judgment and exhibit punctuality, personal accountability, and confidentiality. They should also demonstrate strong interpersonal skills, such as handling conflict resolution, accepting constructive criticism, and treating others in a respectful manner regardless of race, ethnicity, gender identity, sexual orientation, socioeconomic status, age, (dis)ability, religion, family structure, or any other protected status.

Academic Integrity

Rutgers University is committed to fostering an intellectual and ethical environment based on the principles of academic integrity. Academic integrity is essential to the success of the university's educational, research, and clinical missions, and violations of academic integrity constitute serious offenses against the entire academic community. The principles of academic integrity require that a student:

- makes sure that all work submitted in a course, academic research, or other activity is the student's own and created without the aid of impermissible technologies (AI), materials, or collaborations
- properly acknowledges and cites all use of the ideas, results, images, or words of others
- properly acknowledges all contributors to a given piece of work
- obtains all data or results by ethical means and report them accurately without suppressing any results inconsistent with the student's interpretation or conclusions
- treats all other students ethically, respecting their integrity and right to pursue their educational goals without interference (students can neither facilitate academic dishonesty by others nor obstruct their academic progress)
- upholds the ethical standards and professional code of conduct in the field for which the student is preparing

Adherence to these principles is necessary to ensure that all student research is fairly evaluated, no student has an inappropriate advantage over others, academic and ethical development of all students is fostered, and the reputation of the university for integrity, ethics, scholarship, and professionalism is maintained and

enhanced. The full policy, including different levels of academic violations and the penalties, educational sanctions, and disciplinary actions can be read here: <http://nbacademicintegrity.rutgers.edu/>.

NetID

All new students must obtain a NetID, which is a unique identifier within Rutgers that allows access to many of the electronic services available at the university. NetIDs are different than RUIDs, which are used in place of Social Security numbers to identify students on official documents, such as course rosters. Please apply for a NetID at the following web address: <https://netid.rutgers.edu/>.

ID Card

Students will also need a physical ID card for access to the building, libraries, computer labs, recreation centers, on-campus housing, etc. Students must activate their NetIDs and upload a photo at least 10 days prior to picking up the card. Please visit an ID Card Service Center to obtain the ID card: <https://ipo.rutgers.edu/publicsafety/iam/student-id>

Building & Lab Access

Incoming students will not receive full access to the building until they participate in the in-person lab safety training during orientation. If students cannot attend that session, they must check the Rutgers Environmental Health & Safety (REHS) calendar of events and register for “Lab Safety/Biosafety/BBP” training at a different site (https://halflife.rutgers.edu/training_calendar/calendar.php).

Please contact the Facilities and Lab Safety Manager, Andrew DeZaio, adezaio@rutgers.edu for any issues with building and lab access.

Parking

Graduate students with an active appointment (Fellowship/TA/GA) can purchase a parking permit here: <https://rudots.nupark.com/v2/Portal/Login>. Please note that students residing on campus who already have a resident permit related to campus housing may only register for that permit and must abide by the parking guidelines associated with it. Please note that fellow permits are different than TA/GA permits, and students should purchase the one that more accurately matches their appointment.

The nearest parking zone for the CCB building is Lot 57 A/B.

Busch campus map: <https://rutgers.myuvm.com/busch-campus-map/>

Parking zones: <https://ipo.rutgers.edu/dots/parking-lots>

Course Registration

During orientation, students meet with faculty who advise them on which courses to take during their first year in the program. In subsequent years, the student’s advisor will provide academic advising. This handbook provides a suggested course sequence. Students can use their NetID to access WEBREG (<https://sims.rutgers.edu/webreg/>) and register for courses.

MyRutgers

MyRutgers is a central repository for student information. Students can access their schedule, grades, term bill, parking, housing, paychecks, etc. at <https://my.rutgers.edu/>.

Address/Contact Number

All students should notify the department whenever there is a change in their address and/or contact number. In addition, changes must always be updated using: <https://uhr.rutgers.edu/worklife-balance/change-name-or-address-information>.

Term Bill

Fellows are responsible for student, housing, school, technology, and “other” fees on the term bill. International students on F-1 or J-1 Visas must inform Student Financial Services (<https://scarlethub.rutgers.edu/financial-services/>) when submitting term bills. These students will need to request the Rutgers SEVIS Administration Fee be waived due to visa status.

Health Insurance

Fellows will receive an email from CCB asking for personal information, such as address and phone number. This information is for insurance enrollment purposes and is provided to SGS. Students who wish to waive fellowship insurance must do so at this time.

After their first year, students receive either a Teaching or Graduate Assistant (TA/GA) appointment, both of which include insurance through University Human Resources (UHR). This insurance (State Health Benefits Program or SHBP) is different than the insurance for fellows (Graduate Fellows Health Insurance or GFHI). Students coming off of fellowship that do not enroll in SHBP on time will be automatically enrolled in the Student Health Insurance Plan (SHIP). Once the enrollment period ends, no further action can be done, and students will be responsible for paying the SHIP premium appearing on fall and spring term bills of that year.

For questions regarding health benefits and enrollment, please contact UHR at (732) 745-7378 or online at <https://uhr.rutgers.edu/teaching-assistants-graduate-assistants>.

Coverage for dependents is available at an extra cost to students. For this additional option, students will need to remit the dependent premium payment on a semi-annual basis directly to University Health Plans. Fellows will first need to be individually enrolled in the Student Health Insurance Plan prior to enrolling dependents.

Key CCB Contacts

Program Website: <https://chem.rutgers.edu/academics/graduate-program>

School of Graduate Studies Website: <https://grad.rutgers.edu/>

General Inquiries: ccb_graduate_chair@chem.rutgers.edu

Kelly Martini-Hazard: martini@chem.rutgers.edu
Senior Graduate Program Coordinator

Professor Lu Wang: lwang@chem.rutgers.edu
Vice Chair of the Graduate Program

Andrew DeZaio: adezaio@rutgers.edu
Facilities & Lab Safety Manager

Suzanne Squires: squiress@chem.rutgers.edu
Director of Administration

Professor Lawrence Williams: chemchair@rutgers.edu
Department Chair

PROGRAM REQUIREMENTS

The Chemistry & Chemical Biology curriculum follows a basic formula of required course and research credits. Any courses taken outside of CCB must first be approved by the student's advisor and the Graduate Vice Chair. These courses must be listed at 500 level or higher to count towards degree completion.

Basic Overview of Degree Requirements by Year			
Year One	Coursework	Lab Rotation	Individual Development Plan
Year Two	Coursework	Research	Individual Development Plan Qualifiers
Years Three+	Research		Individual Development Plan Annual Progress Report
Final Year	Research		Dissertation Defense

Coursework

Students must take a minimum of 22 course credits. The following courses are required:

- Introduction to Research, 16:160:603 (1 credit), must be completed in the first semester of graduate study. All full-time PhD students are required to complete and receive a satisfactory grade in this single credit graduate course within their first semester of graduate study. It is only offered in the fall semester.
- Research Colloquium, 16:160:607 and 16:160:608 (1 credit per course), must be taken in the first two years of graduate study. All full-time PhD students are required to complete and receive a satisfactory grade in both courses within their first two years of graduate study. Students are encouraged to take the full sequence in their second year but can begin with 608 in the second semester of their first year if their advisor agrees to it.
- Seminar in Chemistry, 16:160:611 (1 credit), must be completed in the third semester of graduate study and is only offered in the fall semester. The focus of this course is the CARL (described on page 11).
- Seminar in Chemistry, 16:160:612 (1 credit), must be completed in the fourth semester of graduate study and is only offered in the spring semester. The focus of this course is the IFRP (described on page 11).
- Advanced Organic Chemistry, 16:160:511 (3 credits), OR Chemical Thermodynamics, 16:160:525 (3 credits), can be taken in the first semester of graduate study. These courses focus on the fundamentals of thermodynamics and kinetics, with different treatments selected depending on the student's interests. At least one of these courses must be completed by the end of the fourth semester.

All students must take at least 12 additional credits of lecture electives (graduate level >500). First semester courses should be approved by a faculty adviser at orientation and by the student's advisor thereafter.

Please note: Independent Studies in Chemistry, 16:160:601/602, and Lab Rotation, 16:160:605, are considered coursework and credits are by arrangement with your PI and the department.

Required Coursework			
First Semester	Intro to Research, 16:160:603	Lab Rotation, 16:160:605	Advanced Organic Chemistry, 16:160:511 OR Chemical Thermodynamics, 16:160:525
Second+ Semesters	Research Colloquium, 16:160:607-608		>500 Elective Courses
Third Semester	Seminar in Chemistry, 16:160:611		
Fourth Semester	Seminar in Chemistry, 16:160:612		

Degree Credits

Students need a minimum of 72 overall credits to graduate. The suggested path includes 22 course credits (including 603, 605, 607/608, 611, 612). Students may take more, but not less, than 22 course credits. 601/602 can also count towards coursework. Students must also register for fellowship/TA/GA e-credits every semester based on their appointment; these e-credits are neither billable nor counted towards degree completion.

Credit Limit

Tuition remission beyond 74 credits requires approval from the department. These students should not register for more than one research credit a semester.

International students registering for one credit must complete the Reduced Course Load Form online through the Rutgers Global Portal and request approval from the departmental ISSS representative, Julia Colvin (jcolvin@chem.rutgers.edu). This should only be done in a student's final semester.

Lab Rotations

All PhD students must do two "rotations" during their first semester. A rotation is a period of six weeks during which the student conducts research in the laboratory of a potential advisor; research groups must be located within the Department of Chemistry and Chemical Biology.

- Students register for rotations under 16:160:605. These lab rotations are counted as "course credits" and not "research credits."
- Each rotation is a trial period for both the student and the potential advisor. The nature of the research depends on the lab. The department will reach out to first years regarding which labs they would like to rotate in. A significant commitment of time and effort is required for a successful rotation outcome.
- After rotations, students will complete the Advisor Request Form listing the labs in which they would like to do research. Students not accepted into a lab must complete additional rotations in the spring.
- A student must have an advisor and be accepted into a research group to remain in good standing. If students do not join a research group/have an advisor by the end of their second semester, they will be asked to transfer to the MS track or leave the program altogether.

Students should consider all options carefully before submitting their requests to the department. Rotation arrangements are NOT decided by the student. The Graduate Office, with input from CCB faculty, will place students in appropriate rotations to ensure the best circumstances for both incoming students and research groups. Modifications to the confirmed rotations must be approved by the Graduate Vice Chair and should be requested at least five business days before the rotation cycle starts. Students will only be allowed one change.

Academic Complaints/Grade Appeals

CCB seeks to provide educational and scholarly opportunities to all students in a constructive and harmonious environment, but students have the right to appeal academic actions, such as assignment/course grade(s), advancement to PhD candidacy, and thesis committee decisions. The student should first attempt to resolve the matter through direct discussion with the relevant instructor(s). If the issue cannot be satisfactorily resolved, the student may specify the appeal, in writing, to the Graduate Vice Chair.

Students who wish to appeal departmental decisions may do so, in writing, to Barbara Bender, Senior Associate Dean for Academic Support and Graduate Student Services. Students will be referred back to the informed resolution of such matters is typically available within CCB.

Good Academic Standing

Students must continuously maintain satisfactory academic progress to remain in good academic standing.

Satisfactory academic progress requires, but is not limited to:

- Minimum GPA of 3.0
- No more than 9 credits of C+/C
- No more than one “U” grade in research
- No more than two unrectified IN grades (incompletes)
- Good progress in research
- Completion of all coursework by the end of the fourth full-time semester
- Fulfillment of Teaching Assistant (TA)/Graduate Assistant (GA) duties

This is not an exhaustive list, and the Vice Chair may deem other actions a hindrance to a student’s progress. PhD students are normally supported as a teaching assistant, graduate assistant, or fellow as long as they maintain good academic standing.

Academic Warnings

Written academic warnings will be issued each semester, within two weeks of final posted grades, to any student who is not maintaining satisfactory academic progress. This includes, but is not limited to:

- Cumulative GPA below 3.0
- C+/C in a graduate level course
- “U” grade in Research Chemistry
- IN grade (incomplete) on the transcript for more than one semester
- Failure to be accepted into a lab after two rotations in the first semester
- Failure to complete coursework requirements by the end of year two
- Failure to fulfill duties required of Teaching and Graduate Assistants

Such warnings will be accompanied by recommended steps to improve performance, including a consultation with program faculty/staff as well as opportunities to find other appropriate resources within the university, such as the Learning Centers; Office of Disability Services (ODS); Counseling, Alcohol and Other Drug Assistance Program & Psychiatric Services (CAPS); etc. However, the department expects a timely response to these communications. A student who neglects to respond to such requests within two business days will be further violating the terms of satisfactory academic progress.

Academic Dismissal

Failure to maintain good academic standing for more than one semester will lead to dismissal from the program. After two semesters of formal academic warnings, the department will notify the student in writing that the process for academic dismissal has begun. These warnings may occur in back-to-back, coterminous semesters or at different times in the program. No student may receive more than one academic warning without major academic ramifications.

Annual Progress Report

Academic progress is monitored, post-qualifiers, via annual progress reports. A student should schedule a meeting every spring semester before April 1, unless the student will defend on or before June 30 of that year.

- Presentations during the annual committee meeting should be concise, clear, and approximately 20 minutes long. The entire meeting should last no longer than one hour.
- Students should use the annual committee meetings as an opportunity to both summarize their research progress in the past year and practice their presentation skills. Individual Development Plans

will also be discussed during this time.

- Committees should provide personalized feedback and research/academic recommendations. Committees will determine if students are making satisfactory progress towards PhD completion.

Individual Development Plans

SGS requires all PhD students to submit an annual Individual Development Plan (IDP). IDPs are intended to contribute to effective mentoring, planning, and communication. IDP entries are saved in the online portal, so that in each consecutive year, a new IDP can be pre-populated with the entries from the prior year. Directions on using the IDP portal can be found on the CCB website:

https://chem.rutgers.edu/images/PDFs/grad/CCB_Individual-Development-Plans.pdf.

TEACHING ASSISTANTSHIPS

TA Responsibilities

Teaching appointment terms run from September 1 to June 30. TAs who do not fulfill their duties will be in poor academic standing in the program. Failure to maintain good academic standing for one semester will lead to a written warning; failure to maintain good academic standing for two coterminous, or back-to-back, semesters may lead to dismissal from the program. By accepting a TA position, the student agrees to maintain professional behavior in all academic settings, including all teaching, proctoring, and grading responsibilities. To cultivate equitable workloads, fulfillment of TA duties means the student is physically present and active for the duration of the assigned semester. Please refer to Scheduling's academic calendar for dates:

<https://scheduling.rutgers.edu/scheduling/academic-calendar>

If, in addition to proctoring, TAs are assigned to grade after the reading days, the student is responsible for completing that work as well. Grading typically begins the day after an exam and continues until all exams are graded; details will be provided by the coordinator/administrator for the course. Substitutions for grading are NOT acceptable without enough notice and approval. No arrangements should be made with the course coordinator or fellow students without approval of the Undergraduate Vice Chair.

TAs that feel exploited or overburdened should first attempt to resolve the matter through direct discussion with the Undergraduate Vice Chair and Academic Coordination team. If a decision cannot be reached to both parties' satisfaction, the issue should be escalated to review by the Department Chair and then to Barbara Bender, Senior Associate Dean for Academic Support and Graduate Student Services. Students will be referred to the department should they reach out to the dean before attempting to resolve the issue within CCB first.

University Standards

Students must sign up for 6 TA e-credits every semester in which they teach. E-credits do not factor into the GPA or count towards degree completion but ensures the TA receives all the benefits of a full-time student.

A full-time teaching assistant works normally at the maximum rate of 15 clock hours per week (the average total hours worked for the semester divided by the number of weeks). Some weeks, especially around exams, require more work while other weeks require less. The number of hours varies according to the time in semester. For example, TAs hired as graders should expect to put in more hours when exams or papers are scheduled. Every TA in the department should have a similar workload, so students assigned to smaller classes should expect outside grading/proctoring responsibilities.

TAs should not be putting in so many hours that their graduate work suffers. TAs who are unhappy with their assigned duties or feel overburdened can request mediation. However, they should first consider if other TAs in the department are they putting in the same time commitment. It is unrealistic to compare the workload of one department to another. Because of the variety of duties and the disparity of disciplinary demands, what is

usual in one program may not be in another.

Make an appointment with the course coordinator to discuss any concerns. If that does not help, follow the department's standards for mediation as outlined above.

Language Training for International Students

The VEPT must be completed before orientation. 356:591, TA Seminar & Practicum, is required for most international students and prepares the student for a potential TA appointment in year two. Based on testing scores, students may also need to take additional ESL coursework, such as 356:590, Foundations of Teaching Assistant Communication in the US. CCB will be notified which students are cleared to teach in the spring.

Union Protocol and Procedures

In accordance with Article XII of the Agreement between the University and the AAUP-AFT, currently employed Teaching Assistants must be notified on or before April 30th of their reappointment status for the coming academic year. Teaching Assistants who will only be appointed for the fall must be notified on or before October 31st of their status for the spring semester.

Rutgers AAUP-AFT assists graduate workers in finding informal solutions to problems faced in the workplace. If a resolution is not achievable through informal efforts, graduate workers are advised as to whether the issue(s) in question can be pursued through negotiated grievance procedures, and/or whether other avenues are available. General questions about university practices/policies/rules or rights and obligations under the Collective Agreement can be directed to aaup@rutgersaaup.org. Rutgers AAUP-AFT is only authorized to pursue grievances on behalf of its members under the collective bargaining agreement with Rutgers and cannot provide members with legal advice for pursuing outside discrimination or other types of claims.

CORE CURRICULUM

Typical Timeline, Requirements, and Deadlines

YEAR ONE

First Year Fellowship, Fall Semester: 12 credits

- Fellows must register for Graduate Fellowship (16:160:811). This is a non-credit course used to track funding. Students are typically supported on fellowships with no teaching duties, allowing them to focus on their coursework and identify a suitable research advisor. Fellows are expected to complete six-week rotations in at least two labs during the first semester; the rotations help students and faculty assess interest in a subject area and the prospect for success. Every effort is made to accommodate both student and faculty to ensure the best fit possible.
 - To register for Lab Rotation (16:160:605), students will use the SPN (special permission number) listed on their course selection forms received at the orientation advising session.
 - Please make sure to submit the Advisor Request Form within a week after the last day in rotation. This is necessary for timely placement of students in research groups.

First Year Fellowship, Spring Semester: 12 credits

- Students should begin taking research credits under their PI's section (16:160:701/702) for five credits. *Please do not register for 602 unless your PI or a department administrator instructs you to do so.*
- A student must have an advisor and be accepted into a research group to remain in good standing. Students who do not yet have an advisor mid-semester should meet with the Graduate Vice Chair.
- After choosing a primary advisor, students must select the rest of their PhD advisory committee, preferably early in the second semester in consultation with their advisor. The two other committee members must be part of the CCB graduate program. Students who wish to include faculty from outside the CCB graduate program must first obtain written approval from the Vice Chair.

- Students should complete an Individual Development Plan in the SGS IDP portal. This can be reviewed by the advisor digitally or printed out and discussed during a one-on-one meeting.

YEAR TWO

Second Year, Fall Semester: TA/GA Appointment

- After the first year, PhD students should work on completing all coursework necessary to graduate and focus on their research project(s). They should meet with their advisor to plan out their credits.
- Students should register for eight research credits if TA. Please consult with advisor if GA.
- The CARL form should be signed and submitted to the department before final exams end.
-

Second Year, Spring Semester: TA/GA Appointment

- Students should register for nine research credits if TA. Please consult with advisor if GA.
- The IFRP form should be signed and submitted to the department before final exams end.
- Students should complete an Individual Development Plan in the SGS IDP portal. This can be reviewed by the advisor digitally or printed out and discussed after the IFRP presentation.
- Students should have at least 44 credits by the end of the spring semester.

YEARS THREE and above

Fall and Spring Semester: TA/GA Appointment

- Once admitted to PhD candidacy, students continue to develop their research, prepare manuscripts for publication, present their research results at conferences, and help prepare grant proposals.
- Students should register for ten research credits if TA or three research credits if GA. To stay on track, students should have approximately 68 credits going into the fifth year.
- The annual progress report should be signed and submitted to the department before April 1.
- Every spring, students should complete an Individual Development Plan in the SGS IDP portal. This can be reviewed by the advisor digitally or printed out and discussed during the annual progress report.
- By the fifth year, a student has typically progressed far enough in their research to write and defend their dissertation, which is the last step before they are awarded their PhD. Sometimes, a student will need an additional year or two to finish. This needs to be agreed upon with the student's advisor.

FINAL SEMESTER

TA/GA Appointment not required, minimum enrollment: 1 credit

Students need to be actively enrolled in the semester in which they defend, with two exceptions. If a student defends over the summer, they do not need to enroll in summer credits. If a student defends in September, they do not need to enroll in the fall semester, granted they submit their paperwork before the October deadline.

DEGREE CYCLES

SGS offers three degree cycles: October, January, and May. Refer to their website for official deadlines: <https://grad.rutgers.edu/academics/graduation/checklist-phd-degree>. Please note that deadlines may change yearly based on when university holidays fall.

During the interim between when students defend and when their degrees are conferred, they maintain active student status.

Should a student defend between cycles and obtain employment that requires proof of graduation, the department can provide an official letter explaining university degree cycles and confirm the student has completed program requirements.

Suggested Course Sequence

YEAR ONE				
	COURSE NAME	COURSE #	CREDITS	REQUIRED FORMS
Fall	Intro to Research	16:160:603	1	
	Thermodynamics and Kinetics OR Adv. Organic Chem	16:160:525	3	
		16:160:511		
	Lab Rotation	16:160:605	2	Advisor Request Form
	Two 160 electives	16:160:XXX	3,3	
	Graduate Fellowship	16:160:811	0	
Total Credits			12	
	COURSE NAME	COURSE #	CREDITS	REQUIRED FORMS
Spring	Research Colloquium	16:160:608	1	
	Two 160 electives	16:160:XXX	3,3	
	Research Chemistry	16:160:702	5	Committee Selection
	Graduate Fellowship	16:160:811	0	
Total Credits			12	

YEAR TWO				
	COURSE NAME	COURSE #	CREDITS	REQUIRED FORMS
Fall	Seminar in Chemistry	16:160:611	1	CARL Form
	Research Colloquium	16:160:607	1	
	Research Chemistry	16:160:701	8	
	Full Time TA or GA	16:160:866/877	6	
Total Credits			16	
	COURSE NAME	COURSE #	CREDITS	REQUIRED FORMS
Spring	Seminar in Chemistry	16:160:612	1	IFRP Form
	Research Chemistry	16:160:702	9	
	Full Time TA or GA	16:160:866/877	6	
Total Credits			16	

YEAR THREE and BEYOND				
	COURSE NAME	COURSE #	CREDITS	REQUIRED FORMS
Fall	Research Chemistry	16:160:701	10 (TA) or 3 (GA)*	
	Full Time TA or GA	16:160:866/877	6	
Total Credits			9 or 16	
	COURSE NAME	COURSE #	CREDITS	REQUIRED FORMS
Spring	Research Chemistry	16:160:702	10 (TA) or 3 (GA)*	Annual Progress Report
	Full Time TA or GA	16:160:866/877	6	
Total Credits			9 or 16	

* Students should speak with the Graduate Program Coordinator regarding questions about coursework or how many credits to register for, especially when nearing the 72 credits required for graduation.

PHD GRADUATION REQUIREMENTS

Qualifying Exam

To maintain good academic progress and be admitted to candidacy, a student must complete both parts of the qualifying exam by the end of the fourth semester of full-time graduate study. The qualifying exam consists of:

1. successful oral defense of a written “Critical Analysis of Research” (CARL) based on research (a recent paper from the literature) that differs from research conducted in the laboratory of the student’s advisor (16:160:611 Seminar in Chemistry), AND
2. successful oral defense of a written “In-Field Research Proposal” (IFRP) based on the student’s PhD thesis project (16:160:612 Seminar in Chemistry)

“Critical Analysis of Research Literature” (CARL, Seminar in Chemistry, 16:160:611)

The purpose of the CARL is to ensure that all PhD candidates demonstrate an ability to (a) understand, in depth, papers in the chemical literature that are outside the immediate thesis research field; (b) understand how to apply the scientific method to design research, evaluate evidence and relate it to the broader impact of such papers; (c) reason analytically and critically both strengths and weaknesses and interpret data properly.

The purpose of the CARL does not necessarily include learning in depth about a field of chemistry entirely outside that of the student’s major field, in addition to the above requirement. Therefore, a student may choose a paper within the same sub-field of chemistry (bioinorganic, nanochemistry, organometallic chemistry, structural biology, etc.) as their thesis research (defined as the “research conducted in the laboratory of the student’s thesis advisor”).

Students will choose a paper from outside of the immediate thesis research field (defined as the research conducted in the laboratory of the student’s advisor(s) or research that is very similar in both the subject and methodology). The CARL does NOT require learning in depth about a field of chemistry entirely outside that of the student’s major field. Therefore, a student may choose a paper within the same sub-field of chemistry as their thesis research; however, they are strongly encouraged to choose a different subfield. Examples of sub-fields include, but are not limited to, bioinorganic chemistry, bioorganic chemistry, biophysical chemistry, nanochemistry, organometallic chemistry, polymer chemistry, solid-state chemistry, structural biology, supramolecular chemistry, surface chemistry, environmental chemistry etc.

The letter grade for 611 will be based largely, but not exclusively, on the CARL grade. The 611 instructor will take into account the student’s oral presentation, participation in class, and other course requirements.

“In-Field Research Proposal” (IFRP, Seminar in Chemistry, 16:160:612)

The purpose of the IFRP is to ensure that all PhD candidates demonstrate an ability to (a) make satisfactory progress in their thesis research to date; (b) understand the broad context of their field and can identify the major issues, the main tools, and the current publications of the field; (c) present a concise statement of the overall goal of their own current research; (d) review in a coherent manner their specific results (to date); (e) reason analytically at a fundamental level and critically interpret their own results as well as the work of others working in their area; (f) propose a well thought out series of experiments or calculations that can address a significant scientific problem.

Unlike the CARL, the letter grade for 612 will be based on the IFRP grade; “High Pass” and “Pass” correspond to an A grade with “Low Pass” as a B grade. Students who fail the IFRP will receive a grade for the course of C+ or lower, depending upon the committee’s evaluation. If the student fails, the committee will also have the option to provide the student with one additional try.

Please see the CCB website for full CARL/IFRP requirements.

CARL & IFRP Scheduling

Students should register for CARL under the course Seminar in Chemistry, 16:160:611, only offered in the fall, and for IFRP under the course Seminar in Chemistry, 16:160:612, only offered in the spring. 611 is the prerequisite for 612.

611's designated instructor will facilitate scheduling. However, scheduling the 612 oral defense, based on the student's PhD research project, is the responsibility of the student and should be completed before the semester ends. The IFRP form should be handed in by the last day of the final exam period for that semester.

Candidacy

The student's advisory committee will meet to discuss progress and make a recommendation to the Graduate Vice Chair on advancement to candidacy. Students must pass *at least* the IFRP to be considered for advancement to candidacy. If a student has two low passes, advancement to candidacy will be denied, and the program will suggest the student switch into the MS program.

The student should submit the completed IFRP form to the Graduate Office, but the Senior Graduate Program Coordinator will submit the official candidacy form to SGS on the student's behalf.

Post-Candidacy Committee Changes

Post-candidacy graduate students are expected to maintain good academic standing by making satisfactory progress in their research. In the unlikely occasion that a post-candidacy student wants to switch research groups or change committee member(s), the student should fill out Part 1 of the [Committee Change Form](#) and submit to the department. The student should not contact other professors about becoming potential advisors or committee members without first receiving approval from the Graduate Vice Chair. A graduate student who circumvents this process will no longer be in good academic standing.

Final Oral Examination (Dissertation Defense)

A student's final thesis committee must include one "outside member" selected by or with the approval of the student's advisor. The outside member must hold a PhD.

Dissertation defenses will be in the form of a public seminar, typically lasting an hour, followed by discussion. The student should share their dissertation details with Loretta Lupo lal275@chem.rutgers.edu at least one week in advance, so she can circulate the details to the CCB community. Room arrangements for an in-person defense should be made through the department at least one month in advance of the proposed defense date. If a student needs or wants to offer virtual participation, it is the student's responsibility to create and provide a Zoom link.

Typically, copies of the written dissertation are distributed to all members of the student's committee at least two weeks before the defense date. In addition, a copy of all material to be presented (e.g. a copy of the slides) should be distributed to all committee members at least 24 hours before the defense date (minor changes may still be made to the presentation material prior to the defense).

Students must communicate their expected graduation date with the Senior Graduate Program Coordinator and Graduate Vice Chair as they near degree completion. The defense should occur at least two weeks prior to the submission deadline date set by the SGS for the awarding of a May, October, or January degree to allow required forms to be submitted on time.

Please access the SGS website for the PhD degree checklist:

<https://gsnb.rutgers.edu/academics/checklist-phd-degree>

FAQ

How does CCB accommodate students with (dis)abilities?

CCB welcomes students of all levels of abilities. Students with (dis)abilities are entitled to the same benefits, the same quality of student life, and are subject to the same academic requirements as other students. The university provides extensive and supportive resources. Rutgers is committed to providing equal educational access in accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments (ADAA) of 2008. The university will make reasonable modifications to its policies, practices, and procedures unless doing so would fundamentally alter the nature of the program or pose an undue hardship.

Rutgers provides reasonable accommodations in order to ensure that all students have an equal opportunity to participate in all Rutgers programs, services, and activities. For more information: <https://ods.rutgers.edu>.

Does Rutgers offer mental health counseling?

Rutgers University has several nationally accredited health centers, operating with board certified physicians and skilled clinical staff. Students may be referred to one of the counseling centers on campus, but they may access these services directly without referral. Services offered by the various centers include treatment of depression or anxiety, difficulties establishing and maintaining relationships, feeling pressures from home, handling academic demands, stress and time management, eating issues, grief management, self-help, surviving exams, and individual/group therapy. Each center can be accessed centrally through: <https://health.rutgers.edu>.

Can a student take a leave of absence?

Yes, students should contact the Graduate Vice Chair if they are considering a leave of absence. This option is only available once a student has completed one full calendar year in the program.

Are students guaranteed funding during the summer months (July/August)?

No. Though most advisors support students during the months outside of TA/GA appointments, they are not obligated to provide funding for summer research.

How does summer (July/August) teaching work?

Summer teaching is handled outside of the department by Rutgers Summer Session. Students cannot request summer teaching positions for themselves. PIs may request a position for their student(s), in writing, by emailing the appropriate member of the academic team. These positions are limited in number, and once filled, more positions will not be created. Summer teaching is not to be confused with Teaching Assistant (TA) appointments assigned for the Academic Year. Those positions are internal to CCB.

Can the department help with taxes?

Rutgers University bars departments from giving tax advice of any kind. CCB administrative staff are not licensed, qualified tax professionals. Ultimately, it is the student's responsibility to meet tax obligations and do so accurately.

Who can answer employment related questions, such as payroll, insurance enrollment, etc.?

University Human Resources and Payroll Services have partnered to plan, design, and operate a service center to support Rutgers community members. This effort will simplify processes, improve the customer experience, and redefine our delivery of HR and Payroll services. <https://uhr.rutgers.edu/onesource/home>

