



**RUTGERS**

School of Arts and Sciences

**DEPARTMENT OF CHEMISTRY  
AND CHEMICAL BIOLOGY**

# **Graduate Student Handbook**

Doctoral Degree

Chemistry & Chemical Biology

Rutgers University – New Brunswick

School of Graduate Studies

# TABLE OF CONTENTS

## I. INTRODUCTION

## II. GETTING STARTED

NETID

ID CARD

BUILDING & LAB ACCESS

PARKING

COURSE REGISTRATION

UPDATE ADDRESS/CONTACT NUMBER

TERM BILL

HEALTH INSURANCE

KEY CCB CONTACTS

## III. PROGRAM REQUIREMENTS

COURSES

RESEARCH

TOTAL CREDITS

CUMULATIVE AVERAGE

LAB ROTATION

QUALIFYING EXAM

ANNUAL PROGRESS REPORT

LANGUAGE TRAINING FOR INTERNATIONAL STUDENTS

FINAL ORAL EXAMINATION (THESIS DEFENSE)

COMPLETION OF DEGREE

## IV. CORE CURRICULUM, COURSE SEQUENCE & TYPICAL TIMELINE

FIRST YEAR

SECOND YEAR

THIRD – FIFTH YEAR

CREDIT LIMIT

SUGGESTED COURSE SEQUENCE

TYPICAL TIMELINE

## V. QUALIFYING EXAM

OFRP

IFRP

SGS CANDIDACY FORM

## VI. FREQUENTLY ASKED QUESTIONS

## I. INTRODUCTION

Welcome to the Department of Chemistry & Chemical Biology's (CCB) doctoral program! Beginning with lecture courses, our 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 graduate student handbook contains an overview of department policies and resources, as well as School of Graduate Studies (SGS) and departmental graduation requirements. It is designed to give students the basic information needed to successfully complete their program. An online version of this document is kept current through annual reviews and can be found on the department's website.

Many of the steps involved in your journey as a PhD student involve submitting required forms by specific deadlines so that faculty and staff can monitor your progress in the program. Required forms are available on the CCB and SGS websites and can be provided to you by the department upon request. While this handbook is intended to be a first resource for common information for students, it is ultimately your responsibility to verify graduation requirements with your faculty advisor and the department, as this is a working document that is continuously updated to align with university and program accreditation requirements.

CCB departmental policies largely overlap with, but do not supersede, the policies and procedures of SGS, which can be found on their website:

<https://grad.rutgers.edu/current-students/policies-procedures-students>

## II. GETTING STARTED

### **NetID**

All new students must obtain a NetID. This ID acts as a unique identifier within Rutgers and allows you to access many of the electronic services available at the university, including course registration. Your NetID is different than your RUID, which is used in place of a Social Security number to identify you on course rosters, etc. It is used for placement tests, advising, and anything Rutgers-related. Please apply for a NetID at the following web address:

<https://netid.rutgers.edu/>

### **ID Card**

Students will also need physical ID card for building access, among other things. Rutgers ID card are issued through the Public Safety office: <https://ipo.rutgers.edu/publicsafety/id-location>

### **Building & Lab Access**

Once you have been issued an ID card, please contact the Facilities and Lab Safety Manager, Andrew DeZaio, [adezaio@rutgers.edu](mailto:adezaio@rutgers.edu) for building and lab access. You must first complete the following lab safety trainings:

- [https://myrehs.rutgers.edu/online\\_training/covid19/](https://myrehs.rutgers.edu/online_training/covid19/)
- [https://myrehs.rutgers.edu/online\\_training/labbio/intro.php](https://myrehs.rutgers.edu/online_training/labbio/intro.php) (select *Laboratory Safety/Biosafety/Bloodborne Pathogens/Plants Refresher* under Training Calendar once you login with your NetID.)

### **Parking**

Graduate students with an active employee appointment (Fellowship/TA/GA) can purchase a Faculty/Staff parking permit here: <https://ipo.rutgers.edu/dots/faculty-staff-permits>

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>

Please note: If you reside on campus and have been issued a resident permit related to your campus housing, you may only register for that permit and must abide by the parking guidelines associated with it.

### ***Course Registration***

During orientation, students meet with faculty and staff who advise them on which courses to take during their first year in the program. Following your first year, your PI and the Graduate Program Vice Chair will provide advising. This handbook provides a suggested course sequence you may want to follow. Students can access WEBREG (<https://sims.rutgers.edu/webreg/>) with a NetID to register for courses.

### ***MyRutgers Portal***

The MyRutgers portal is a central repository for your student information. Students can access their schedule, grades, term bill, monthly stipend, parking, housing, etc.:

<https://my.rutgers.edu/portal/>

### ***Update Address/Contact Number***

We request all students notify the department and their PI 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***

As a First Year Fellow, you are responsible for student, housing, school, technology, and “other” fees on your term bill. If you are an international student on an F-1 or J-1 Visa, you must inform Student Financial Services (<https://scarlethub.rutgers.edu/financial-services/>) when you submit your term bill. These students will need to request the Rutgers SEVIS Administration Fee be waived due to visa status.

### ***Health Insurance***

First Year Fellows will receive an email from the CCB Graduate Program asking for personal information, such as address and phone number. This information is for insurance enrollment purposes and is provided to SGS. In the event you wish to waive insurance, you must do it at this time. Second Years and beyond receive either a Teaching Assistantship (TA) or Graduate Assistantship (GA) appointment, both of which include insurance through University Human Resources. This is different than the insurance for First Year Fellows. For questions regarding health benefits and enrollment, please contact Rutgers University Human Resources at (732) 745-7378 or <https://uhr.rutgers.edu/teaching-assistants-graduate-assistants>.

**Key CCB Contacts**

General Inquiries, first point of contact: [ccb\\_graduate\\_chair@chem.rutgers.edu](mailto:ccb_graduate_chair@chem.rutgers.edu)

Kelly Martini-Hazard: [martini@chem.rutgers.edu](mailto:martini@chem.rutgers.edu)

Senior Graduate Program Coordinator

Lu Wang: [lwang@chem.rutgers.edu](mailto:lwang@chem.rutgers.edu)

Vice Chair of the Graduate Program

Julia Colvin: [jcolvin@chem.rutgers.edu](mailto:jcolvin@chem.rutgers.edu)

Associate Director of Academic Operations, ISSS certifier for the department

Andrew DeZaio: [adezaio@rutgers.edu](mailto:adezaio@rutgers.edu)

Facilities & Lab Safety Manager

John Brennan: [bren@chem.rutgers.edu](mailto:bren@chem.rutgers.edu)

Department Chair

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

### III. PROGRAM REQUIREMENTS

The Chemistry & Chemical Biology curriculum follows a basic formula of required course and research credits.

Degree Requirements – Courses and Research Credits		
<b>First Year</b>	Course credits	Lab Rotation
<b>Second Year</b>	Course credits	Research credits      Qualifying exam
<b>Third Year</b>	Research credits	Annual Report
<b>Fourth Year</b>	Research credits	Annual Report
<b>Fifth Year</b>	Research credits	Defense/PhD Degree
<b>Sixth Year*</b>	*Some students may require a 6 <sup>th</sup> (or 7 <sup>th</sup> ) year	

#### ***Courses***

Students must take a minimum of 22 course credits. **Any courses taken outside of CCB must first be approved by the student's advisor and the CCB Graduate Program Vice Chair, and must be listed at 500 level or higher, to count towards your degree.** The following courses are required:

- *Intro 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 one-credit graduate course within their first semester of graduate study (normally offered in the fall semester only).
- *Research Colloquium, 16:160:607 (1 credit) & 16:160:608 (1 credit):* Must be taken within 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, can only be taken in the fall semester. The focus of this course is the OFRP (described below).
- *Seminar in Chemistry, 16:160:612 (1 credit)*: Must be completed in the fourth semester of graduate study, can only be taken in the spring semester. The focus of this course is the IFRP (described below).
- *Advanced Organic Chemistry, 16:160:511 (3 credits) or Chemical Thermodynamics, 16:160:525 (3 credits)*: Typically taken in the first semester (must be completed by the fourth semester) of graduate study. The focus of these courses is fundamentals of thermodynamics and kinetics, with different treatments selected depending on the student's interests.

All students must take 12 additional credits of lecture courses (graduate level >500). These courses are approved by a faculty adviser at orientation for the first year, and your Thesis Advisor thereafter.

Please note: *Independent Studies in Chem, 16:160:601-2* and *Lab Rotation, 16:160:605-6* are considered courses and credits are by arrangement with your PI and the department.

COURSE CHECKLIST		
Course Title / Number	Credits	Timeline
Intro to Research, 16:160:603	1	Must be completed in the first semester of graduate study



Lab Rotation, 16:160:605	2	Must be completed in the first semester of graduate study
Research Colloquium, 16:160:607	1	Must take this course within first two years of graduate study
Research Colloquium, 16:160:608	1	Must take this course within first two years of graduate study
Seminar in Chemistry, 16:160:611	1	Must be completed in the third semester of graduate study
Seminar in Chemistry, 16:160:612	1	Must be completed in the fourth semester of graduate study
16:160:511 or 16:160:525	3	Must be completed in the first semester of graduate study
Additional credits of lecture courses (graduate level, >500)	12	Must be approved by advisor

### **Research**

- A student needs a minimum of 72 combined course and research credits to graduate.
- Once a student has been assigned a PI, they should start taking research credits, *Research Chemistry, 16:160:701 & 16:160:702*, under the advisor's name.
- Students must register for the TA/GA/Fellowship course each semester depending on their appointment type.

### **Credits for Degree**

- Minimum 22 course credits (including 603, 605/606, 607/608, 611, 612).
- Minimum 72 total credits (majority are research, suggested path: 50 research credits).

### **Cumulative Average for Graduation**

- PhD students must maintain a minimum grade point average (GPA) of 3.0 in their graduate courses.

- Students whose cumulative program GPA falls below 3.0 are placed on departmental probation. Failure to raise the GPA to at least 3.0 within the next nine credits will result in a recommendation of dismissal from the graduate program.

### ***Lab Rotation***

- All PhD students must do two “rotations” during their first semester. A rotation is a period of 6 weeks during which the student conducts research in the laboratory of a potential advisor. These rotations account for the course 16:160:605.
- Each rotation is a trial period for both the student and the potential advisor. Students will need to complete the lab rotation form after having spoken to the faculty members with whom they would like to do rotations. The nature of the research done depends on the lab. A significant commitment of time and effort is required for a successful outcome. In case the student is unable to complete their lab rotations during their first semester, they must complete them in the second semester (i.e. spring). These lab rotations are counted as “course credits” and not “research credits.”

### ***Qualifying Exam***

- The PhD qualifying exam consists of two parts:
  - Successful oral defense of a written “In-Field Research Proposal” (IFRP) based on the student’s PhD thesis project (16:160:612), and
  - Successful oral defense of a written “Out-of-Field Research Proposal” (OFRP) based on research (a recent paper from the literature) that significantly differs from research conducted in the laboratory of the student’s advisor (16:160:611).
- To remain in good standing and be admitted to PhD candidacy, a student must complete both parts of the qualifying exam by the end of the fourth semester of full-time graduate study. Once completed, they must submit the required candidacy form to the School of Graduate Studies (SGS).
- In the student’s fourth semester, and after the IFRP, the student’s advisory committee will meet to discuss progress and make a recommendation to the Graduate Program

Vice Chair on advancement to candidacy. If the student has two low passes, or if a student does not pass their IFRP, advancement will be denied.

### ***Annual Progress Report***

The progress of PhD students is monitored by the student's advisor, Advisory Committee, and the Graduate Program Vice Chair. After advancement to candidacy, students must present a progress report to their advisor and members of their Advisory Committee each March/April (year 3 and beyond). The committee will determine whether the student is making satisfactory progress.

### ***Language Training for International Students***

The department needs to be notified that international PhD students have passed their ESL/ELL exam, are coded as a 1 or lower (i.e. may teach), and are cleared to teach by the end of their first semester. The *TA Seminar & Practicum, 16:356:591* course is required for international students. They can take the course in either fall or spring of their first year in preparation for a potential TA appointment in their second year. Based on ESL/ELL testing scores, students may also need to take additional "English as a Second Language" courses.

### ***Final Oral Examination (Dissertation Defense)***

The thesis committee is comprised of the student's PI and Advisory Committee, plus an "outside member." The outside member must hold a PhD and is selected by or with the approval of the student's advisor.

Dissertation defenses will be in the form of a public seminar, typically lasting an hour, followed by discussion in both a public and a non-public oral exam. This should be announced by email at least a week in advance. The student should share their dissertation details with the department, so the seminar can be announced. Arrangements for the in-person seminar and final oral examination rooms 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).

The defense and exam must be taken at least two weeks prior to the submission deadline date set by the School of Graduate Studies 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>

*Please communicate with the CCB Graduate Program Coordinator and the Graduate Program Vice Chair regarding your expected graduation date, as you near degree completion.*

#### **IV. CORE CURRICULUM, COURSE SEQUENCE & TYPICAL TIMELINE**

##### ***First Year***

##### Fellowship – Fall Semester: 12 credits

- Intro to Research (16:160:603) – 1 credit
- Thermodynamics and Kinetics (16:160:525) OR Adv. Organic Chem (16:160:511) – 3 credits
- Any other CCB course – 3 credits
- Any other CCB course – 3 credits
- Graduate Fellowship (16:160:811) – 0 credit

*If a student is a Fellow, they are expected to register for this non-credit course.*

- Lab Rotation (16:160:605) – 2 credits

*To register for the course, you will need to request a SPN (special permission number) from the department. Please make sure to submit the Lab Rotation form, so a grade for the course can be collected from the faculty you rotated with.*

FORM DEADLINES:

- Lab rotation form in week two of your first semester
- Thesis Advisor Request form – before finals begin in your first semester

Fellowship – Spring Semester: 12 credits

- Research Colloquium (16:160:608) – 1 credit
- Any other CCB offered course – 3 credits
- Any other CCB offered course – 3 credits
- Graduate Fellowship (16:160:811) – 0 credit
- Research Credits

*Students should begin taking research credits under the section of their PI (16:160:701/702) for 5 credits. Please do not register for 602 unless instructed to by your PI.*

FORM DEADLINES:

- Advisory committee is formed during the second semester, preferably early in the second semester, in consultation with your advisor and Graduate Program Vice Chair.

**Second Year**

TA/GA appointment – Fall Semester: Credits Vary

- Research Colloquium (16:160:607) – 1 credit

- Seminar in Chemistry – OFRP (16:160:611) – 1 credit
- Research Chemistry (16:160:701) under your PI's section – 8 credits if TA, 1 credit if GA
- TA appointment (16:160:877) or GA appointment (16:160:866) – 6 credits  
*Students must register for this course whether they are a TA or a GA. These E-credits are neither billable nor counted towards the degree, but they are counted each semester to maintain full-time student status.*

FORM DEADLINES:

- OFRP Form – Upon completion, form should be signed by advisor, OFRP instructor, and two advisory committee members, and submitted to the department before final exams begin.

TA/GA appointment – Spring Semester: Credits Vary

- Seminar in Chemistry – IFRP (16:160:612) – 1 credit
- Research Chemistry (16:160:701) under your PI's section – 9 credits if TA, 2 credits if GA
- TA appointment (16:160:877) or GA appointment (16:160:866) – 6 credits

FORM DEADLINES:

- IFRP Form – Upon completion, form should be signed by advisor, IFRP instructor, and two advisory committee members, and submitted to the department before April 15th.
- SGS Candidacy Form – Students should submit this form directly to SGS and provide a copy to the department.

***Third Year – Fifth Year***

TA/GA appointment – Fall Semester: Credits Vary

- Research Chemistry (16:160:701) under your PI's section – 10 credits for TA, 3 credits for GA
- TA appointment (16:160:877) or GA appointment (16:160:866) – 6 credits

TA/GA appointment – Spring semester: Credits Vary

- Research Chemistry (16:160:701) under your PI's section – 10 credits with TA appointment, 3 for GA
- TA appointment (16:160:877) or GA appointment (16:160:866) – 6 credits

FORM DEADLINES:

- Annual Progress Report – Upon completion, form should be signed by advisor and committee members and submitted to the department before the exam period.

***Credit Limit***

Once you reach the 72 credits required for degree completion, you must register for no more than one research credit in each semester, along with any TA/GA appointment credits. Tuition remission for credits beyond 72 requires approval from the Graduate Program Vice Chair.

In addition to registering for one credit, international students must complete the Reduced Course Load Form online through the Rutgers Global Portal and add the email address of Associate Director, Julia Colvin ([jcolvin@chem.rutgers.edu](mailto:jcolvin@chem.rutgers.edu)) so it may be approved. International students should only be registering for one credit in their final semester.

***Suggested Course Sequence***

YEAR ONE – FELLOWSHIP			
FALL SEMESTER	COURSE #	CREDITS	REQUIRED FORMS
Intro to Research	16:160:603	1	
Thermodynamics and Kinetics	16:160:525	3	

OR Adv. Organic Chem	16:160:511		
Lab Rotation	16:160:605	2	Lab Rotation form in second week of semester
Any CCB 3 credit course	16:160:XXX	3	
Any CCB 3 credit course	16:160:XXX	3	
Graduate Fellowship	16:160:811	0	Thesis Advisor form before finals
	<b>TOTAL</b>	<b>12</b>	
<b>SPRING SEMESTER</b>	<b>COURSE #</b>	<b>CREDITS</b>	<b>REQUIRED FORMS</b>
Research Colloquium	16:160:608	1	
Any CCB 3 credit course	16:160:XXX	3	
Any CCB 3 credit course	16:160:XXX	3	
Graduate Fellowship	16:160:811	0	
Research Credits with PI	16:160:702	5	Advisory Committee Form
	<b>TOTAL</b>	<b>12</b>	

YEAR TWO - TA OR GA			
FALL SEMESTER	COURSE #	CREDITS	REQUIRED FORMS
Seminar in Chemistry OFRP	16:160:611	1	OF RP Form before finals
Research Colloquium	16:160:607	1	
Research Credits with PI	16:160:701	8	
Full time TA or GA	16:160:866/877	6	
	<b>TOTAL</b>	<b>16</b>	
SPRING SEMESTER	COURSE #	CREDITS	REQUIRED FORMS
			After committee decides on admission to candidacy, submit IFRP form to the graduate coordinator before finals. Official SGS Candidacy Form should be submitted to SGS as well as department.
Seminar in Chemistry IFRP	16:160:612	1	
Research Credits with PI	16:160:702	9	
Full time TA or GA	16:160:866/877	6	
	<b>TOTAL</b>	<b>16</b>	

YEAR THREE AND ABOVE - TA OR GA			
FALL SEMESTER	COURSE #	CREDITS	REQUIRED FORMS
Research Credits with PI	16:160:701	10/3	If you are a TA, then take as many as 10 credits, but if you are GA



			then you may take 3 research credits.
Full time TA or GA	16:160:866/877	6	
	<b>TOTAL</b>	<b>16</b>	
<b>SPRING SEMESTER</b>	<b>COURSE #</b>	<b>CREDITS</b>	<b>REQUIRED FORMS</b>
Research Credits with PI	16:160:702	10/3	
Full time TA or GA	16:160:866/877	6	Submit annual progress report form before exam period.
	<b>TOTAL</b>	<b>16</b>	

### **TYPICAL TIMELINE FOR PhD**

#### **Year 1**

Students are typically supported on fellowships with no teaching duties, allowing them to focus on their coursework and identifying a suitable research advisor. Students choose two groups in which to do a six-week rotation; the rotations help students and faculty assess student interest in a subject area and the prospect for success. Every effort is made to accommodate the choices of the student and faculty to ensure the best fit possible.

After choosing a primary advisor, the student chooses members of their PhD advisory committee.

#### **Year 2**

PhD students complete their coursework and focus on their research project(s). This is also when students take their qualifying exams for admission to candidacy.

#### **Years 3-5**

Once students have been admitted to PhD candidacy, they continue developing their research, typically preparing manuscripts for publication, presenting their research results at conferences, and helping to prepare grant proposals. 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.

## V. QUALIFYING EXAM

To remain in good standing and be admitted to PhD candidacy, a student must complete both parts of the qualifying exam by the end of the fourth semester of full-time graduate study and have at least one pass or higher to be considered for advancement to candidacy. Again, the student's advisory committee will meet to discuss progress and make a recommendation to the Graduate Program Vice Chair on advancement to candidacy. If the student has two low passes, advancement to candidacy will be denied.

The PhD qualifying exam consists of two parts: (I) successful oral defense of a written "in-field" research proposal based on the student's PhD research project, and (II) successful oral defense of a written "out-of-field" proposal on a topic not closely related to the research conducted in their PI's lab.

When a student schedules an **OFRP**, they should also register under the course *Seminar in Chemistry, 16:160:611*, offered in the fall. During the month of October or November, a student should schedule an oral defense of the written "out-of-field" proposal on a topic not closely related to the PI's research. After successful completion of an OFRP, students should submit the OFRP form to the department before finals begin.

Similarly, when a student schedules an **IFRP**, they should also register under the course *Seminar in Chemistry, 16:160:612*, offered in the spring. During the month of March or April, a student should schedule an oral defense of the written "in-field" research proposal based on the student's PhD research project. After successful completion of an IFRP, students should submit the IFRP form to the department before finals begin.

Once the IFRP is successfully completed and the student's advisory committee has made a recommendation to the Graduate Program Vice Chair on advancement to candidacy, the student must complete the School of Graduate Studies Form: Application for Admission to Candidacy for the Degree of Doctor of Philosophy available on the SGS website:

<https://gsnb.rutgers.edu/resources/graduate-student-forms>.

When submitting the above form to SGS, the student must provide a copy to the department as well.