Student's Responsibility to Research Mentor, Faculty and Queens College

1. To be actively involved in the research project and to attend the number of hours as defined by the registered course and credit hours (cf. Table I)

2. To maintain contact with the Chemistry Research Coordinator and to respond to all e-mails sent by the Research Coordinator in a timely manner.

3. To perform research in the laboratory following standard scientific ethics. See www.gc.cuny.edu/chemistry/studentresearch.html for more information.

4. To follow the ACS Academic Professional Guidelines for Student Researchers (at all levels) as adapted for Queens College (in terms of research mentors, advisors and administration). These guidelines, which are part of a more general set of Academic Professional Guidelines found at http://www.acs.org/content/acs/en/careers/profdev/ethics/academic-professional-guidelines.htm

are as follows:

The students should demonstrate honesty, integrity and diligence in the conduction of research, teaching, and in the completion of academic courses. The student should diligently pursue coursework and, as appropriate, teaching and thesis research. Included in this obligation is the timely completion of research reports, publications, and/or a thesis. Students are responsible for being aware of and adhering to policies related to plagiarism.

Students should be fully aware of the ethical, legal, health and safety implications of their education, research and teaching in both the academic community and in the public setting.

Students should take personal responsibility for understanding, practicing and promoting appropriate safety procedures.

Students have the responsibility to pursue vigorously educational opportunities directed toward becoming chemical professionals.

Students should seek to broaden their educational and professional development through experiences such as industrial internships, coursework in other disciplines and other experiential programs such as classroom teaching. At Queens College, such experiences also include becoming a member of the Chemistry Honors Society (with a requirement to provide tutoring for chemistry), Sigma-Xi, or the Chemistry if Fun club (which performs demonstrations at various times throughout the year).

It is the responsibility of the student to monitor progress in coursework, consult with the chemistry advisor when difficulty arises, and cooperate in efforts to resolve these difficulties. The student should seek further guidance from the chemistry department chair if a problem cannot be resolved after consultation with the advisor.
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The research student should consult the supervising faculty mentor at appropriate intervals regarding progress and should openly discuss relevant technical and administrative problems. If a problem cannot be resolved with the faculty research mentor, the student should seek further guidance from the chemistry advisor or department chair.

The student should honor commitments relating to teaching and research. The student should recognize that the faculty member devotes significant time and effort to classroom teaching, supervision of research and other professional activities. The commitment by the faculty member should be matched by the student.

Students should maintain open lines of communication with other students and with faculty members. English language skills should be developed as necessary for improved spoken and written communication.

Students should clearly understand their rights and obligations related to intellectual property and authorship, keep accurate and complete laboratory notebooks and records to document their work and ideas, and communicate their results as appropriate.

Mentoring opportunities should be actively sought. More experienced students should serve as mentors and educators for others. Prospective mentors should seek professional development opportunities to increase their mentoring skills.

5. Students in CHEM 3910, 3912, 3913, 3911, 7951, 7952, 7953, 7954, 7955, and 7956 will present their research to the department on an assigned day. (Students in HMNS 2911, 2912, 2913, 3911, 3912, 3913 who wish to count this research as part of the ACS certified degree must also present during this time. It is the student’s responsibility to contact the chemistry research coordinator during the first two weeks of the semester so that the student can be added to the research roster.) In the Fall and Spring semesters, the undergraduate research students will present on the Friday before Final Examination Week; while the graduate research students will present on the Friday during Final Examination Week. All students performing research for credit or who are registered in CHEM 3910 during Summer will present on the first Friday of the subsequent Fall semester. Faculty evaluations on these presentations will count as 10% of the research grade.

6. Students in CHEM 3910, 3912, 3913, 3911, 7951, 7952, 7953, 7954, 7955, and 7956 must write a short (5 page minimum, double spaced) report at the end of the course to be submitted on presentation day. (Students in HMNS 2911, 2912, 2913, 3911, 3912, 3913 who wish to count this research as part of the ACS certified degree must also present during this time. It is the student’s responsibility to contact the chemistry research coordinator during the first two weeks of the semester so that the student can be added to the research roster.) This report will be given to all faculty within the student’s research discipline to be read and commented on. The mentor’s grade on this report will count as 10% of the research grade. The additional faculty comments will count as an additional 10% of the research grade in all research courses taken for more than 2 credits.
7. Students in CHEM 3910, 3911, 3912, and 3913 who wish to count research as part of the laboratory requirements for the ACS certified degree must commit to performing research under a single mentor for one full year (i.e., a Fall, Spring, and Summer semester in any order). This requirement also holds for students in HMNS 2911, 2912, 2913, 3911, 3912, and 3913 who wish to count research as part of the laboratory requirements for the ACS certified degree.

8. Students in CHEM 3910, 3911, 3912 and 3913 (or in HMNS 2911, 2912, 2913, 3911, 3912, 3913) who wish to count research as part of the laboratory requirements for the ACS certified degree must register for CHEM 395 (Senior Thesis) and must write and defend a senior thesis.

9. All MA students who wish to count more than 6 credit hours of research toward the degree must establish a committee of three faculty, write a thesis and defend this thesis.

Table I. The list of possible research courses and the laboratory time commitment required for each course.

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester</th>
<th>Lab Time/Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 291 (1 cr)</td>
<td>Fall or Spring</td>
<td>3 hours</td>
</tr>
<tr>
<td></td>
<td>Summer (6 week session)</td>
<td>7 hours</td>
</tr>
<tr>
<td></td>
<td>Summer (4 week session)</td>
<td>11 hours</td>
</tr>
<tr>
<td>CHEM 3910 (0 cr)</td>
<td>All Semesters</td>
<td>Hours to be arranged. For students performing research without credit.</td>
</tr>
<tr>
<td>CHEM 3911/ CHEM 7951 (1 cr)</td>
<td>Fall or Spring</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>Summer (6 week session)</td>
<td>9 hours</td>
</tr>
<tr>
<td></td>
<td>Summer (4 week session)</td>
<td>14 hours</td>
</tr>
<tr>
<td>CHEM 3912/ CHEM 7952 (2 cr)</td>
<td>Fall or Spring</td>
<td>8 hours</td>
</tr>
<tr>
<td></td>
<td>Summer (6 week session)</td>
<td>19 hours</td>
</tr>
<tr>
<td></td>
<td>Summer (4 week session)</td>
<td>28 hours</td>
</tr>
<tr>
<td>CHEM 3913/ CHEM 7953 (3 cr)</td>
<td>Fall or Spring</td>
<td>12 hours</td>
</tr>
<tr>
<td></td>
<td>Summer (6 week session)</td>
<td>28 hours</td>
</tr>
<tr>
<td></td>
<td>Summer (4 week session)</td>
<td>42 hours</td>
</tr>
<tr>
<td>CHEM 7954</td>
<td>Fall or Spring</td>
<td>16 hours</td>
</tr>
<tr>
<td></td>
<td>Summer (6 week session)</td>
<td>37 hours</td>
</tr>
<tr>
<td></td>
<td>Summer (4 week session)</td>
<td>56 hours</td>
</tr>
<tr>
<td>CHEM 7955</td>
<td>Fall or Spring</td>
<td>20 hours</td>
</tr>
<tr>
<td>CHEM 7956</td>
<td>Fall or Spring</td>
<td>24 hours</td>
</tr>
</tbody>
</table>
Grading Policies for Research Courses

CHEM 291

30% from attendance in the laboratory (see Table I)
70% from performance (as judged by the mentor)

CHEM 3911 and CHEM 3912

10% from attendance in the laboratory (see Table I)
10% from the presentation
10% from the paper as graded by the mentor
70% from performance in the laboratory (as judged by the mentor)

CHEM 3913

10% from attendance in the laboratory (see Table I)
10% from the presentation
10% from the paper as graded by the mentor
10% from the paper as graded by other members of the sub-discipline
60% from performance in the laboratory (as judged by the mentor)

CHEM 7951 and CHEM 7952

10% from attendance in the laboratory (see Table I)
10% from the presentation
10% from the paper as graded by the mentor
70% from performance in the laboratory (as judged by the mentor)

CHEM 7953, CHEM 7954 and CHEM 7956

10% from attendance in the laboratory (see Table I)
10% from the presentation
10% from the paper as graded by the mentor
10% from the paper as graded by other members of the sub-discipline
60% from performance in the laboratory (as judged by the mentor)

Mentor's Responsibility to a Research Student

1. To insure that the necessary personal protective equipment (i.e., gloves, goggles, lab coat, etc) is worn by the student at all times when working on a chemical experiment.

2. To insure that the student is appropriately trained in the use of any instrumentation needed to complete the experiment. It is the Mentor's responsibility to arrange a training time for specialized instrumentation (e.g., NMR, HPLC, ESI-MS, etc)
3. To provide the initial motivation of the research project and a guide to the reference papers that should be read, and to indicate clearly what the student should accomplish during the research course.

4. To be present in the laboratory, or on the same floor of Remsen Hall, when any student without a C-14 certificate of fitness is working on a project, or to insure that the student has obtained his/her certificate of fitness and is qualified to work alone.

5. To insure that the student has been trained by the laboratory safety personnel on correct chemical storage and hazardous waste disposal procedures.

6. To fill out and submit to the research coordinator a mid-term and end-term student research progress report confirming that the student is spending the correct number of hours per week (on average) in the laboratory. These reports will be used to determine 10% of the grade for all research courses.

7. To require that the student follows the writing style guide (or book) and to grade the final research report or thesis according to the department grading rubrics. These rubrics will be used to determine 10 – 20% of the course grade.

8. To help the student prepare a seminar for one of the two Chemistry Department Research days. This seminar will be graded by the faculty who attend. This grade will be used to determine 10% of the course grade.

9. To attend the student’s presentation.

10. To follow the ACS Academic Professional Guidelines for Faculty (at all levels) as adapted for Queens College. A shortened version of these guidelines as they apply to working with student researchers follow this statement. These guidelines, which are part of a more general set of Academic Professional Guidelines, can be found at
    http://www.acs.org/content/acs/en/careers/profdev/ethics/academic-professional-guidelines.htm

Responsibilities to Students and Colleagues:

The faculty member should exhibit honesty, integrity and diligence in the conduct of research, teaching, mentoring and all other professional responsibilities. Faculty members bear a responsibility to inculcate these values in their students.

The faculty member must take responsibility for establishing a laboratory environment consistent with the current best practices in chemical safety, including workplace right-to-know law governing employees and students. Faculty members should use their expertise to assist university safety personnel in those situations involving chemical hazards or spills.

The faculty member should be a model for the professional development of students by continuing professional development and scholarship. Broader self-education within the
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discipline of chemistry and chemical education as well as outside of chemistry is appropriate.

Full attention should be directed to student learning, recognizing that the acquisition, interpretation and dissemination of knowledge are the principal functions of an academic institution. In this role as a teacher, the faculty member should stimulate the students' interest, broaden their outlook and encourage a sense of inquiry.

The faculty member should willingly serve as a mentor to students. Mentoring should include assistance in developing a successful career and should encourage the development of a sense of inquiry, a habit of broad-based learning and professional communication skills. The faculty member should encourage and provide opportunities for students to develop writing, speaking, listening or other communication skills necessary to achieve success in their careers. The faculty member should encourage the development of initiative and independent thinking by students. The faculty member should maintain an environment in the research laboratory that fosters productivity, collaboration and respect among coworkers.

The faculty member should recognize the research contributions of students, associates or staff by co-authorship or appropriate acknowledgement in publications. Regular and periodic evaluation should be provided to students. This communication should concern the progress of the research and provide feedback regarding the status relevant to the project, as well as constructive suggestions toward resolution of any research difficulties encountered. If satisfactory progress is not being made, the faculty member should inform the student that a problem exists and offer the student opportunities to correct the situation. Options may include changing research projects or faculty advisors. This discussion should occur as soon as a problem is noticed.

Failure of the mentor to follow these responsibilities will result in the suspension of the ability to accept undergraduate or Master's research students for a single semester.

The last page of this booklet is the registration approval form. This form should be torn out of the booklet, filled out and submitted. By submitting this form, you are acknowledging that you have read all items in this booklet.
Department of Chemistry and Biochemistry
Undergraduate and Graduate Research Guidelines

Undergraduate and Graduate Research Registration Approval Form – Student section

All items in the table below must be filled out and be readable, or you will not be registered. Please print.

<table>
<thead>
<tr>
<th>Name:</th>
<th>CUNY First ID:</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-mail:</td>
<td>Telephone:</td>
</tr>
</tbody>
</table>

What is your preferred method of communication? ☐ e-mail ☐ text message

You will not be registered for any research course unless this form is completely filled out and signed by your research mentor and by yourself. Signing this form indicates that you have read the Undergraduate and Graduate Research Guidelines and that you agree to all requirements for the research course in which you are enrolling (e.g., time in laboratory, paper, presentation, etc).

Select semester for registration:

☐ Fall  ☐ Summer 1 (4 weeks)  ☐ Summer 1 (6 weeks)
☐ Spring  ☐ Summer 2 (4 weeks)  ☐ Summer 2 (6 weeks)

Select course (or courses for registration)

Undergraduate chemistry research courses

☐ CHEM 291  ☐ CHEM 3911  ☐ CHEM 3912  ☐ CHEM 3913

HMNS research courses for chemistry credit

☐ HMNS 2911  ☐ HMNS 2912  ☐ HMNS 2913
☐ HMNS 3911  ☐ HMNS 3912  ☐ HMNS 3913

Graduate chemistry research courses

☐ CHEM 7951  ☐ CHEM 7952  ☐ CHEM 7953
☐ CHEM 7954  ☐ CHEM 7955  ☐ CHEM 7956

Sign below to confirm that you have read the guidelines in this booklet and to indicate that you acknowledge the requirements for the research course in which you are enrolling

_________________________  ______________________
Student signature  Date
Undergraduate and Graduate Research Registration Approval Form – Mentor section

Title of research project:

Building and room where research will be performed:

By signing below, you – the research mentor – accept this student into your laboratory. You have acknowledged that you will do the following:

1. Submit to the research coordinator a mid-term and end-term student research progress report confirming the student’s participation in the laboratory for the hours required.

2. Will require that the student attend safety training.

3. If specified in the research guidelines for the research course, will require a written report that follows department guidelines.

4. If specified in the research guidelines for the research course, will attend the presentation day and grade the presentation of your student and all other presenting students.

5. Will grade research reports written by other students within your sub-discipline.

<table>
<thead>
<tr>
<th>Faculty name (printed)</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

Reminder: All students in CHEM 391x and 795x must present their research at the end of the semester and must submit a research report. The report is due on the day of the presentation. General Presentation dates are given below. (Exact dates will be listed in Blackboard at the start of the semester.)

For Fall and Spring semesters

CHEM 391x last Friday before final examinations begin
CHEM 795x Friday during final examination week

For all Summer sessions

CHEM 391x First Monday of the subsequent Fall semester
CHEM 795x First Monday of the subsequent Fall semester