Graduate Student Manual

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Table of Contents

I. ADMISSIONS 1
- A. Degree Students 1
- B. Placement Exams 1

II. DEGREE REQUIREMENTS 1
- A. General Semester Hour Requirements 1
- B. Specific Semester Hour Requirements 2
- C. Specific Degree Requirements 2
- D. Admission to Candidacy 5
- E. Application for the Degree 5
- F. Research Work 5
- G. Policy on Thesis Requirement 5
- H. Policy on Access to the Resource Room 5

III. TEACHING ASSISTANTSHIP 5
- A. General 5
- B. Specifics 5

IV. MISCELLANEOUS 6
- A. Thomas Walsh Tuition Fellowships 6
- B. Research Assistantships 6
- C. Semester Reports 6
- D. Office Space 6
- E. Keys 7
- F. Copy Machines 7
- G. Out-of-State Tuition Remission 7
- H. Professional Conduct 8
- I. Checklist 11
- J. Timetables 12

I. ADMISSIONS

A. Degree Students:

1. General admissions requirements are outlined in the University catalog.
2. Full standing vs. conditional standing.
   a. An applicant meeting published admission requirements shall be admitted to full standing.
   b. An applicant not meeting one or more published admission requirements shall be considered on an individual basis.
      1) If there is general agreement that the applicant has a positive predicted chance of success, based on definite tangible evidence, the student shall be admitted to full standing.
      2) If the student is to be admitted, but there is not such general agreement, admission is to be conditional.
      3) In addition to the University requirement of a TOEFL score of 220 on the computer-based exam, or a 557 on the paper-based exam, or a 83 on the internet-based exam, foreign students must receive the endorsement of the Graduate Committee to be admitted to full standing.
      4) After removal of the conditions of admissions, the student is responsible for contacting his/her advisor. The advisor will make a recommendation to the departmental graduate committee, who will then notify the Graduate Office in writing concerning the change in the graduate student's admission status.

B. Placement Exams

1. Placement Exams are given to determine deficiencies in a student's background.
2. Graduate students, regardless of their alma mater, are required to take **ALL** placement exams immediately prior to their first and second semesters in residence.
3. All five exams must be taken the first time, but only exams in deficient areas the second.
4. All MS graduates must be non-deficient in Organic and Physical Chemistry and in 2 out of the remaining 3: Analytical, Biochemistry and Inorganic Chemistry.
5. Deficiencies can be removed by passing the relevant placement exam the second time.
6. Deficiencies can be removed by a grade **B** or better in the appropriate courses among e.g., CHEM 5111, 5121, 5133/5134/5135, 3141/3142 or CHEM 6102 and 6103 as specified by the Graduate Committee.
7. Deficiencies are considered removed if a student passes (with a B or better) a 6000 level course which is relevant in subject matter, *(as determined by the Graduate Committee),* to the deficiency (e.g. CHEM 6082 for a deficiency in thermodynamics).
8. Deficiencies can be removed by mastering an assigned problem set in the area of the deficiency. The problem set option can only be used after a student has taken the placement exam twice and only by permission of the division and graduate coordinator.
9. Normally the length of time allowed for removal of deficiencies is one year or whenever the appropriate course(s) is (are) next offered.
10. The Graduate Committee may alter deficiency removal time requirements for special cases that fall outside the above timetable where progress toward the degree is being made by the student.

II. DEGREE REQUIREMENTS

A. General Semester Hour Requirements:

1. Minimum of 30 semester hours.
2. At least 15 semester hours must be taken in courses open only for graduate credit (>6XXX).
3. Graduate courses at the 5000-7000 level may be used for graduate credit. All non-chemistry courses must have prior approval of the Departmental Graduate Committee. Examples of subject matter, which would be considered favorably, are courses in Biology, Engineering, Mathematics, and/or Physics (Technical writing or Business courses will be considered on an individual basis).
4. Up to 6 hours of transfer credit from another institution or from non-degree status is allowed.

B. Specific Semester Hour Requirements:
1. Coursework: At least six semester hours which must include two of the following: CHEM 6069, 6082, 6101, 6115, 6125, 6126, 6135, 6138, 6145, 6146, 6147, 6155, 6165, or MEGR 6109 or OPTI 6105, 6205. CHEM 6060(G3) is allowed if approved by the department. CHEM 6102 and 6103 are also allowed if approved.
2. At least one semester hour of seminar, CHEM 6681.
3. At least one semester hour of seminar, CHEM 6682
4. At least one hour of research and thesis credit, CHEM 6900, but up to sixteen semester hours may be taken for credit. This is a research-based degree, it is expected that most of your time will be spent in your research lab!

C. Specific Degree Requirements:
1. Coursework: A quality point average of 3.0 (A=4.0) is required in all courses taken for graduate credit after initial admission to the degree program. This means any C's must be balanced by A's. **One letter grade C will result in an academic suspension issued by the Graduate School. Two C's on a student's graduate record results in dismissal from the graduate program.** One U on a student's graduate record results in automatic dismissal from the graduate program.
2. Selection of Research Advisor:
a. In order to aid in the selection of a research advisor, new graduate students will be provided with a handout summarizing the research interests of the graduate faculty, (Appendix A). Additionally, each member of the graduate faculty will present a small talk discussing his/her research interests during the graduate seminar time slot each Fall.
b. Students should discuss possible research topics with at least three faculty members prior to choosing a research advisor.
c. Under normal circumstances, students must select a research director no later than the end of the first semester the student enrolls in the graduate program. The Research Advisor Selection Form (Appendix B) should be completed and returned to the Graduate Coordinator (Dr. Etzkorn) once a research advisor has been selected.
3. Research:
a. General:
The M.S. degree is a research-based degree, which requires a substantial effort on a research project. The research project is chosen in conjunction with the research endeavors of one of the faculty members. Once the research project is chosen, the research director becomes the person's advisor.
After completion of the research work, the results are incorporated in the written thesis and the thesis defended before a thesis committee.
b. Thesis Committee:
After selection of a research advisor and the completion of the students 1st mini seminar, students must submit a Proposal Defense Report for Master's Thesis and Appointment of Master's Thesis committee forms to the Graduate School. This form also requires that the chemistry department members of the Thesis Committee be chosen. Students should discuss candidates for the thesis committee with their advisors and should list a committee member as such only after asking permission of the potential committee member. This is submitted after your committee approves your topic at your 1st mini-seminar. Bring the completed form to the Graduate Coordinator for signature and leave a copy with the Assistant Graduate coordinator for your file.
The student's research advisor is the chair of the thesis committee. At least two other members of the chemistry department and at least one member from another department shall serve on the committee. The thesis committee will be appointed and hold its initial meeting with the student at the 1st mini-seminar **(by the end of second semester)**.
4. Graduate Seminar:
Students will be required to present ***three*** seminars in order to earn the MS degree. These seminars include two "mini-seminars" (15-20 minutes long) and a Thesis Defense Seminar (35-40 minutes long). These seminars are outlined below:
a. Mini-seminar #1:
This seminar, normally given during the ***second semester the student is enrolled in the***

program, will consist of a 15 (minimum) to 20 (maximum) minute presentation based on the background literature of the student's thesis project as well as a brief discussion of the proposed research. A 5 - 10 minute question / answer period will follow. The audience will consist of the student's research advisor, the departmental members of the thesis committee, and perhaps graduate students from the advisor's and committee members' research groups as well as any other individuals wishing to attend. The student will write a paper, graded by his/her research advisor, and based on the seminar material. The combined presentation / paper grade will constitute the student's grade for 6681. The oral presentation and written paper will be evaluated with the Student Learning Outcome rubric (SLO).

- Complete Proposal Defense Report for Master's Thesis at the seminar, have the graduate coordinator sign it, then leave a copy with the assistant graduate coordinator and send the original to the Graduate School.
- After the paper is graded by your advisor, give a copy to the graduate coordinator.

b. If you do not complete the paper on time, you will need to request a change of grade for 6681

c. Mini-seminar #2:

The second mini-seminar should be presented during the ***third*** semester the student is enrolled in the program and will essentially consist of a 15-20 minute "progress report" of the research conducted thus far, plans for future research, plus a 5-10 minute question / answer period. The presentation will be made to the chemistry faculty and graduate student body. These presentations will be scheduled during the 4:00 PM time slot on Monday or Wednesday afternoons. The student will write a paper, graded by his/her research advisor, based on the seminar material. The combined presentation / paper grade will constitute the student's grade for 6682. There are two acceptable formats for your 2nd mini-seminar paper:

Format A: 10-20 page progress report written in thesis format

Format B: 1st draft of a journal format research paper, letter or communication

The journal paper should follow the style of a specific journal (selected by the advisor). The paper need not be publication quality; a well-written 1st draft is acceptable. Most of the paper should be written by the student (even if the final draft will have multiple authors).

- Contact the Graduate Seminar Coordinator to reserve your preferred time slot for the seminar
- Electronically mail your seminar time, place and title to the Graduate Coordinator several days before your second mini-seminar.
- The completed paper required for this grade of both mini-seminars must be submitted to the graduate studies committee and placed in the student's file.
- If you do not complete the paper on time, you will need the change of grade form for 6682.
- You should consider these papers as part of your thesis. The more you write at this point, the less daunting your thesis will seem later.
- If the student does not complete his/her mini-seminars at the appropriate time (2nd and 3rd semesters for the 1st and 2nd mini-seminars respectively) (s)he will receive a letter from the graduate coordinator advising the student that (s)he is not making timely progress through the graduate program. This letter will go in the student's file and could affect the students funding.

d. Thesis Defense Seminar:

This will consist of a 35-40 minute seminar discussing the student's thesis. The seminar is open to the public. Your presentation will be evaluated by all attending faculty members, using the appropriate SLO form.

- This is arranged through the Graduate seminar coordinator to whom you give the completed Thesis Final Defense Report and notification to the Graduate Coordinator as described above.

a. Procedure on Thesis Draft: Once the student and his/her advisor has determined that the thesis draft is suitable for defense, the thesis draft will be submitted to the chemistry department members of the thesis committee. Guidelines for the thesis are in the Appendices.

b. The committee members will read the thesis draft and comment on whether the work presented is suitable for defense. The committee members are to make judgements regarding the merit of the work for the degree, grammatical corrections, and substantive changes at the time the manuscript is reviewed.
c. The committee member(s) who judge(s) the work of insufficient merit for the masters degree or who feels substantive changes must be made in order for the student to merit the degree must state so in writing to the thesis advisor and other members of the thesis committee ***within two weeks after receiving the draft***.
d. Once the student has been informed that the committee has approved his/her thesis for defense, the student will ask the committee members for their availability and select a defense date and time. Once the date and time is determined the student should see the Graduate Coordinator to schedule the public thesis defense
e. A public thesis defense seminar and closed room defense with the students committee members is a requirement for the degree. The Graduate Coordinator **MUST** be notified of the defense time. Electronically mail your defense time, place and thesis title to the Graduate Coordinator several days before your defense. After the successful completion of the student's defense each committee member must sign a Thesis Final Defense Report verifying the completion. This form will be turned into the Graduate School when the student submits their final printed copies of their thesis.

For Early-entry MS students Only

For Early–entry MS students who have been doing research that is related to their MS research AND who are giving their CHEM 4696 seminar in the semester of their admission to the MS program AND their seminar is on the research they have been doing then:

After the public seminar for 4696,

1. The student meets with graduate thesis committee for a discussion of their proposed research. This will count as their 1st mini-seminar (Appointment of Master's Thesis Committee).
2. The student's 4696 paper should be written in MS thesis format and count as their 1st mini-seminar paper. Students can register for 6681 and double count it for 4696 or they can register for both.

D. Graduation process

Initiate your graduation process. You should ensure in DegreeWorks that you are on track and complete all required electronic and printed forms, as specified on the checklist available through the Graduate School's webpage. See the school calendar for the exact deadline. Make sure a copy is given to either the Graduate Coordinator or the Assistant Graduate Coordinator for your file.

E. Application to graduate: (see instructions on the Graduate School's webpage)

Each student should apply for his/her degree no later than the filing date specified in the University calendar. The application must be accompanied by the appropriate filing fee in effect at the time of application. Degrees are awarded only at commencement exercises held at the end of the Fall and Spring semester; however, the diploma will reflect the term in which all requirements were completed.

F. Research Work:

1. No graduate research work will be allowed unless the student is enrolled in CHEM 6900 and has taken the appropriate safety courses. Exception may be made to individuals receiving summer teaching or research assistantship if approved by the Chair.
2. No graduate student will be permitted to do experimental work alone; at least one other person who is aware of his/her presence must be on the floor.
3. A potentially hazardous reaction should be performed only when the faculty advisor is present in the building.

G. Policy on Thesis Requirement:

1. It is expected that the student will complete the thesis defense before leaving the University.
2. The grade of IP will be given for CHEM 6682 and 6900 during your last semester in residence and will remain IP until the thesis is defended and submitted.

H. Policy on Access to the Resource Room

All graduate students who have obtained authorization are permitted to be in the facility when it is not open, i.e., staffed by a monitor. Authorization is generally given to all cases that are warranted by the nature of a student's research, and requests for authorization should be initiated by the faculty research advisor. The student's name is placed on file with Campus Police.

There is a six-year limit on completion of the requirements for the degree after enrollment as a degree candidate.

III. TEACHING ASSISTANTSHIP

A. General:

1. Duration of Assistantship: The assistantship will be made typically for a period of one academic year, with renewal for two more semesters given the student's satisfactory progress in our graduate program. In some cases, the assistantship may be terminated at the end of one semester, or at the end of one year for academic or teaching reasons. Normally a third year (or longer) appointment will not be made.

2. T. A. Workload: The Graduate Teaching Assistants' assignments will consist of 12 hours of assigned work. Being the primary instructor in a laboratory course will count as a six hour load for each three-hour laboratory session per week (this includes grading and office hours). When the assistant is in a secondary role, such as those in CHEM 2131 L, the assignment will count as three hours for each three-hour laboratory session per week. Grading, proctoring, monitoring in the Resource Room, and other assignments will count as one hour of work per week. Your responsibilities will be kept to a minimum and you will not typically fill out the 20-hour contract. During special exam weeks your work load may increase.

B. Specifics:

1. Teaching Assistants are required to enroll in a minimum of 6 credits hours. (Beginning students normally will be required to enroll in more credit hours in order to make satisfactory progress toward the degree.) If only 6 hours are taken, at least one of these hours must be CHEM 6900.
2. Teaching Assistants (TAs) are under the direct supervision of the Chemistry 6150 instructor.
3. Teaching Assistants are expected to participate in CHEM 6150 each week (even if they have already taken the sequence). One credit for a three-hour laboratory course is consistent with credit given for other chemistry courses.
4. Graduate Students holding TA positions must be available for teaching duty assignments during the hours that laboratory courses or tutoring services are offered. Teaching Assistants are required to be available for duties between the first day of registration and the last grade report day, inclusive.
5. International TAs are expected to be able to be the primary instructor in laboratory sessions. Satisfactory progress in spoken English is the major determining factor.
6. The CHEM 6150 Instructor's Manual will be provided by the General Chemistry Laboratory Director.

IV. MISCELLANEOUS

A. Thomas Walsh Tuition Fellowships

The Thomas Walsh Tuition Fellowships are available for graduate students in the Department of Chemistry entering during the 1999-2000 academic year or later. The fellowships are to be used to cover the costs for up to 8 credit hours of tuition for students enrolled in the Master's degree program in Chemistry and for students seeking an interdisciplinary Doctoral degree through a Chemistry Department faculty member. To be eligible for the fellowship, a student must be admitted in full standing by the Graduate School and be registered as a student. The student must also demonstrate satisfactory progress* towards the degree. If a student's program of study is interrupted due to various circumstances, i.e. medical, familial, he/she may be eligible for support upon returning. Students returning who have been suspended from the university for any reason are not eligible for support. The tuition fellowship is for a two-year period contingent upon the availability of funds, the student's progress towards the degree, and an evaluation by the Graduate Committee. Out-of-state students must also demonstrate progress towards seeking in-state residency status. An additional semester of support may be petitioned by the student and is subject to evaluation by the Graduate Committee and the student's Research Advisor. Approval by the Graduate Committee for a third year will depend on the availability of funds and the student's progress.

*Satisfactory progress towards the degree includes but is not limited to the student: being registered in appropriate courses, maintaining a 3.0 GPA, submitting satisfactory Graduate Student Semester Reports at the end of each semester, selecting a research advisor by the end of the first semester, completing the first mini-seminar by the end of their 2nd semester, submitting all appropriate forms to the Graduate School.

B. Research Assistantships

Research assistantships may be available for a research project under the direction of one or more of the Chemistry Faculty. Normally, the stipend will be similar to that of a teaching assistantship. You are not eligible for a Walsh Tuition Fellowship if you are being supported, at any level, by a contract or assistantship. Your advisor should know that they should also provide for your tuition if you are going to take an RA.

C. Semester Reports

Graduate students are required to turn in semester reports. You will receive a form at the beginning of each semester (Fall and Spring), from the Graduate Coordinator. Use this form with the guidance of your advisor to register for courses. Update the form with the most current data and course selections. Submit this form to the secretaries in the main chemistry office for registration by the date provided. The report will summarize in one to two pages the courses taken, placement tests passed, research activities and other important information.

D. Office Space

Graduate students are assigned office space in 235 Burson. Graduate students are expected to meet undergraduate students in their TA office. Upon selection of a research advisor, graduate students will be assigned desk space in their research laboratory. **For safety reasons, graduate students should continue to discharge their teaching duties in their TA offices, not in their research laboratory**. **Do NOT tell your students they can "find" you in your research lab!**

E. Keys

Keys are issued by the Departmental Office.

1. All Graduate students receive ID card access to the building and another key for the general access.
2. Research advisors will sign key request forms for specific research laboratories.

3. Possession of an unauthorized key or copying of a key by a non-faculty member will be considered as grounds for dismissal. Loaning a key to an unauthorized person for unsupervised use (e.g., overnight or over the weekend) will be considered a violation of this policy.
4. Any lost key must be reported immediately.
5. A person without continuing duties or who is not registered for the following Fall or Spring semester must turn in all their keys at the end of the semester.
6. All keys must be turned in before graduation. An appropriate mechanism for insuring that this is accomplished will be the responsibility of the research advisor.
7. Do NOT leave unauthorized students alone after operating hours.

F. Out-of-State Tuition Remission

Students holding out-of-state tuition remission are strongly encouraged to seek in-state residence status as soon as possible. Positive steps to achieve this are (1) establishing a banking account (2) registering to vote and voting in elections (3) obtaining a NC drivers license (4) registering an automobile in the state of NC, etc. The graduate committee will review each out-of-state remission case before a renewal of tuition fellowships is recommended. The Residency Manual is in the back of your Graduate Student Handbook. You could also visit their website for further information: http://resdetermination.uncc.edu

G. Professional Conduct

The issue of professional conduct is **extremely important** for your stay in graduate school and your entire professional life. Probably the most important guideline is what we commonly call "The Golden Rule" which undoubtedly exists in one form or the other in all cultures and religions:

"Do To Others As You Would Have Them Do To You"

We will however, address some issues of very specific concern to you. You will find very helpful discussion of science issues in the NRC Pamphlet On Being a Scientist.

1. Sexual, Racial and Religious Harassment: Derogatory comments (direct or indirect) and other actions which make a person uncomfortable on the basis of their gender, sexual orientation, race, religion or nationality are not consistent with proper professional conduct. In serious enough cases, they may be cause for academic dismissal.

2. Personal relationships between faculty and the students they instruct is forbidden by State and University Law. This applies, for example, to a relationship between a Teaching Assistant and a student in that Assistant's class. Even if a student is not in an Instructor's class, the possibility that they could be in the future is cause for extreme caution.

3. In light of items 1 and 2 it is extremely important to be even-handed with students. If, as an Instructor (or TA) you were to take an unusually helpful role with a student, this may be misinterpreted as a) unwanted affection, b) unintended affection and may be a source of embarrassment and even fear for the student (and the Instructor).

4. Cheating on examinations and other tests is forbidden.

5. Respect must be given to the apparatus, glassware, chemicals, etc. of other students and faculty. Glassware or chemicals should never be taken without the permission of the affected faculty and students. In general, the need to borrow items without permission can be avoided by good planning.

Serious or repeated violations can lead to dismissal from the research group or even from the Graduate Program.

6. WORK SAFELY. You have an ethical responsibility not to endanger others as well as not to endanger yourself.

7. Plagiarism is forbidden and can be punished by dismissal from the Graduate Program.

   In its simplest form plagiarism is the copying or use of the work (data, writing, ideas) of another person(s) without indicating the source. If you copy a sentence or paragraph without referencing its source (even if you change some words around), this is plagiarism. If you take another person's idea and present it as your own (even if you have modified it a bit), this is plagiarism.

   In writing a thesis, it is sometimes tempting for a student having difficulty writing to copy sentences, paragraphs and pages from other authors simply because things are stated so well and it is hard to do better. Although the student may not mean to cheat by doing this, it is plagiarism and can mean dismissal.

   In general, it is best to write in your own words - this is the best way to learn - and properly reference your material. If you must take a direct quotation - try to take as little as possible (a sentence is typical, but a paragraph at most) place it in quotation marks (" ") and reference your source.

8. Be fair and honest in crediting the work of others.

   In general, put yourself in the other person's shoes and ask yourself how you would feel in a given circumstance if you are not given credit for your contribution.

   In general, to be an author (or co-author) on a paper or presentation the rule of thumb is that the person has done at least one of the following:

   a. Developed the idea and initiated the work.
   b. Played a substantial role in obtaining the experimental data beyond being a mere technician.
   c. Can present the work to a professional audience indicating a high level of scientific understanding and participation in the contribution.

9. Data Must Be Taken Honestly and Objectively and interpreted Honestly and Objectively.

   If your instrument is working well, in general, you need to report all collected data. You need to assure yourself and others that the data are valid (calibrations, blanks, controls, tests for reproducibility and limits of detection). If the instrument is not working well then you should not really take data from it.

   There are grounds for "tossing" data. If it becomes clear afterward that the instrument did not work well during data collection, then you can dismiss the data (all of it - not just the data you don't like). Repair the instrument immediately so that you can take valid data.

   Sometimes data taken can be "dismissed" as "outliers" if they correspond to two times or three times the standard deviation. If you choose to do this, you need to list the data and then inform your reader of your basis for not including it in your analysis.

   "The only ethical principle which has made science possible is that the truth shall be told all the time. If we do not penalize false statements made in error, we open the way, don't you see, for false statements by intention. ***And of course a false statement of fact, made deliberately, is the most serious crime a scientist can commit.***" C.P. Snow

10. KEEP A GOOD LABORATORY NOTEBOOK

    This will help your research and help you in your thesis writing. A good lab notebook should not be of the spiral type (where pages can be removed without obvious detection). Its pages should be consecutively numbered.

    Although notebook styles differ from research group to research group (some are simple objective statements and procedures and observations, some may include the train of thought of the experimenter), there are certain common factors.

a. It should accurately record what is done and observed on given dates.
b. It should be legible to others. It is important that the book be understood by your advisor and some future researcher who might need to read the book five or fifty years into the future.
c. It should allow an "orderly tour" through your research - clearly indicate the identities of chemicals synthesized (i.e., with clear names and/or code numbers), related charts, spectra and tables of properties.
d. A notebook may be urgently needed in the future and in cases of patents or battles of primacy of a discovery, it may even be subpoenaed.

11. Be Alert to Unethical Practices of Others and Report Them

The purpose here is not to create a climate of fear and spying. If you were to become aware of an unethical practice by another scientist you should first try and discuss this problem non-confrontationally with that person. It may be that your fears were unjustified. However, if the problem is real and not corrected the next step is to talk with the person's supervisor (e.g., Professor). Hopefully, the problem will be solved. Beyond that, there are no definite solutions - a report to another faculty member, the Graduate Director or the Chair if this appears to be the best approach. There are no formal directions in this unlikely case. However, do something!

12. Enjoy yourself and help others to enjoy their work. Demand as much of yourselves as you demand from others.

I. Checklist for completion of your Master's degree

You can track your progress in the program in **DegreeWorks** throughout your curriculum.

Date of completion

- ❑ _____Selection of your Research Advisor (graduate assistants must choose a research advisor no later than the end of their first semester in the program). Once you have chosen your advisor, please turn in your Research Advisor Selection Form to the Graduate or assistant graduate coordinator.

- ❑ _____Semester Reports (each semester)
- ❑ _____
- ❑ _____
- ❑ _____

- ❑ _____1st mini-Seminar - background to research (2nd semester in program). Once your committee approves your topic fill out the Proposal Defense Report for Master's Thesis and the ASppointment of Master's Thesis Committee form (Remember to make a copy for your student file before original goes over to the Graduate School) – The 1st mini-Seminar requires SLOs for the oral presentation and the written paper (by your thesis committee members.

- ❑ _____2nd mini-Seminar - work completed so far (3rd semester in program)

- ❑ _____Initiate your Graduation process along the guidelines on the Graduate School's webpage (Make sure to print out copies for your and the department's records)

- ❑ _____Thesis Committee Meeting (at least 2 weeks before term/summer of graduation) This is optional, but recommended. Show your thesis committee members the central data of your thesis with a brief justification and explanation. Can you tell your story?

- ❑ _____Schedule a Thesis formatting appointment with the Graduate School.

- ❑ _____Distribute thesis to committee 2-3 weeks before final defense date.

- ❑ _____Thesis Seminar and Defense (The oral defense requires SLOs by all attending faculty members and the written thesis requires SLOs by all thesis committee members).
    - Bring to Defense:
        - Thesis Final Defense Report form (After form is signed by all your committee members, remember to make a copy for your student file)
        - At least 3 copies of cover sheet on good paper
        - The Final Defense Report Form and signed cover sheet need to be submitted to the Graduate School the day after your defense; don't forget to provide copies to the Graduate Coordinator's assistant.

- ❑ _____ Submission of Thesis to Graduate School & ETD Form

Congratulate Yourself!

UNC Charlotte Chemistry Department
Master's Degree Timetable (Fall Admission)

Item	Semester	Desired Timeframe [Deadline (to remain in good standing)]
Orientation; Placement Exams	1	Week before classes start
Remove deficiencies (if any)	1–3	As soon as possible [Beginning of Semester 4]
Coursework (two 6000-level courses)	1–3	Depends on course offerings [Semester 4 with Advisor's approval]
Individual meetings with three or more potential Research Advisors	1	First six weeks [End of Semester 1]
Select Research Advisor; begin background reading	1	Mid-semester [End of Semester 1]
Begin independent laboratory research	1–2	[Start of Semester 2]
Select Thesis Committee	1–2	[Before first "Mini-Seminar"]
Present first "Mini-Seminar" (research background) to Committee	2	Depends on Committee scheduling [End of Semester 2]
SUMMER RESEARCH!		
Schedule second "Mini-Seminar" with Graduate Coordinator and Seminar Coordinator	2–3	Late Summer [Beginning of Semester 3]
Present second "Mini-Seminar" (research progress) to entire faculty	3	Depends on scheduling [End of Semester 3]
Apply to graduate	3–4	Last month of Semester 3 [See Academic Calendar for exact date]
Meet Committee members individually to discuss Thesis	4	[End of Semester 4]
SUMMER RESEARCH!		
Submit Thesis to Committee	4+	Immediately upon Advisor's approval [Two weeks before final defense]
Final Seminar and Thesis Defense	4+	Mid-July (leave time for revisions before Graduate School deadline)
Submission of approved Thesis to Graduate School & ETD Form	4+	End of July [See Academic Calendar for exact date]

UNC Charlotte Chemistry Department
Master's Degree Timetable (Spring Admission)

Item	Semester	Desired Timeframe [Deadline (to remain in good standing)]
Orientation; Placement Exams	1	Week before classes start
Remove deficiencies (if any)	1–3	As soon as possible [Beginning of Semester 4]
Coursework (two 6000-level courses)	1–3	Depends on course offerings [Semester 4 with Advisor's approval]
Individual meetings with three or more potential Research Advisors	1	First six weeks [End of Semester 1]
Select Research Advisor; begin background reading	1	Mid-semester [End of Semester 1]
Begin independent laboratory research	1+	[Start of Summer]
SUMMER RESEARCH!		
Select Thesis Committee	1–2	[Before first "Mini-Seminar"]
Present first "Mini-Seminar" (research background) to Committee	2	Depends on Committee scheduling [End of Semester 2]
Schedule second "Mini-Seminar" with Graduate Coordinator and Seminar Coordinator	2–3	End of Semester 2 [Beginning of Semester 3]
Present second "Mini-Seminar" (research progress) to entire faculty	3	Depends on scheduling [End of Semester 3]
Apply to graduate	3+	Last month of Semester 3 [See Academic Calendar for exact date]
SUMMER RESEARCH!		
Meet Committee members individually to discuss Thesis	3–4	[First month of Semester 4]
Submit Thesis to Committee	4	Immediately upon Advisor's approval [Two weeks before final defense]
Final Seminar and Thesis Defense	4	Mid-November (leave time for revisions before Graduate School deadline)
Submission of approved Thesis to Graduate School & ETD Form	4	Beginning of December [See Academic Calendar for exact date]

REMEMBER TO MAKE COPIES OF ALL FORMS FOR YOUR DEPARTMENTAL STUDENT FILE BEFORE SUBMITTING TO THE GRADUATE SCHOOL

- **Faculty Research Interests**
- **Selection Committee Form**
- **Student Learning Outcome Rubrics**
- **Milestone Procedures**

Originals of these forms may be obtained from
the Front Office of the Chemistry Department
or from the Graduate School Office or website

To access Graduate School forms please visit:
http://graduateschool.uncc.edu/current students/forms

UNC Charlotte Department of Chemistry

Faculty Research Interests

Kirill A. Afonin
Assistant Professor
Biochemistry
M.S.: Saint Petersburg State University
Ph.D.: Bowling Green State University
Post-doc: (NIH Research Fellow) National Institutes of Health; (Postdoctoral Fellow) University of California Santa Barbara
Awards: Two time recipient of the FARE award-NIH Fellow Award for Research Excellence.
kafonin@uncc.edu

Photochemistry
My research focuses on RNA nanotechnology with potential diagnostic and therapeutic applications. RNA nanotechnology comprises general knowledge of RNA structure, function, and its role in different diseases to tackle specific biomedical problems. Developing biocompatible RNA nanoparticles that act as controlled multifunctional therapeutic, sensing, and targeting agents will advance the field of nanomedicine by increasing the amount of delivered drugs while minimizing drug toxicity. The delivery of RNA nanoparticles in vivo is one of the most challenging tasks due to RNA's negative charge, chemical instability, and stimulation of immune responses.

Christopher M. Bejger
Assistant Professor
Organic Chemistry
B.S.: University of Oregon
Ph.D: The University of Texas at Austin
Post-doc: Columbia University
Cbejger@uncc.edu

Research in the Bejger group is focused on the design, synthesis, and assembly of molecular clusters for energy applications. The chemical and electronic structures of molecular clusters can be modified synthetically; this allows us to tune their physical properties and create new materials with nanoscale control. We synthesize these custom-made cluster building blocks and use them to construct functional materials and devices useful for improving charge transport, energy conversion and storage. Specifically, we are studying crystalline porous frameworks, solar cells, and redox flow batteries prepared from hybrid organic-inorganic, clusters and small molecules.

Brian T. Cooper
Associate Professor
Bioanalytical Chemistry
B.S.: Purdue University
Ph.D.: University of Arizona
Post-doc: (NIH Fellow) Iowa State University
Awards: ORAU Junior Faculty Enhancement Award
NSF Faculty Early Career Development CAREER Award
btcooper@uncc.edu

Bioanalytical Chemistry-protein analysis by; capillary/channel electrophoresis; ultrasensitive fluorescence detection and imaging; electrospray and MALDI mass spectrometry.
My research group primarily uses capillary electrophoresis (CE) to analyze and characterize proteins. CE separations of protein "charge ladders" (otherwise pure proteins with intrinsic or induced charge heterogeneity) allow us to estimate the net charge and hydrodynamic radius of proteins in solution. We also study ligand binding to proteins using "affinity capillary electrophoresis" (ACE), which exploits the accompanying change in protein electrophoretic mobility. Combining charge ladders and ACE allows us to characterize overall conformational changes caused by ligand binding. And

		with laser-induced fluorescence (LIF) detection, we can study the conformational behavior of fluorescently labeled proteins under simulated intracellular conditions-especially in the presence of high concentrations of other macromolecules. We also have an active collaboration with a group in the Department of Bioinformatics and Genomics. We are using a variant of ACE called "CEMSA" (capillary electrophoretic mobility shift assay) to detect binding of transcription factors (TFs) to synthetic, fluorescently labeled DNA probes. We use this technique to experimentally validate predicted TF binding cite sequences. After screening by CEMSA, we can identify affinity-purified TFs using mass spectrometry.
	**Bernadette T. Donovan-Merkert** *Professor* *Analytical Chemistry* **B.S.:** Duke University **Ph.D.:** The University of Vermont **Post-doc:** Dartmouth College The University of Texas at Austin **Awards:** National Science Foundation Camille and Henry Dreyfus Foundation Petroleum Research Foundation Research Corporation **bdonovan@uncc.edu**	Electron-transfer reactions of organometallic complexes. By oxidizing or reducing these compounds we often generate species that undergo interesting reactions or form complexes in unusual oxidation states. In many cases redox activation of organometallic complexes accelerates known reactions of these compounds, activates otherwise inert complexes, or allows reactions to occur under milder conditions. We study the reactions and their products using electrochemical methods and other instrumental techniques including, but not limited to, NMR, IR, ESR and GC/MS.
	**Markus Etzkorn** *Associate Professor* *Organic Chemistry* **Pre-Diploma:** University of Freiburg (Germany) **Diploma:** University of Freiburg **Dr. rer. Nat:** University of Frieburg **Post-doc:** USC-Loker Hydrocarbon Research Institute **metzkorn@uncc.edu**	Unusual structures (fullerenes, dodecehedrane, fluorinated graphite…) display often extraordinary properties that reward organic chemists for all the effort taken to achieve a challenging synthetic goal. Using contemporary tools of synthetic organic chemistry my group explores the potential of new (functionalized) hydrofluorocarbons as precursors to applied materials. In addition photochemical conversions of suitable hydrofluorocarbons could ultimately lead to highly strained cage systems with unique physiochemical properties.

	**Swarnapali (Pali) De Silva Indrasekara** *Assistant Professor* *Analytical Chemistry* **B.S.:** University of Peradeniya, Sri Lanka **Ph.D.:** Rutgers University, New Brunswick **Post-doc:** Rice University and Duke University **adesilva@uncc.edu**	Nanotechnology/Analytical Chemistry/Materials Chemistry: We are interested in designing new optically active nanomaterials and using them to develop optical spectroscopy-based analytical tools. At the nanometer scale, noble metals such as gold, silver, platinum, and copper exhibit unique, synthetically tunable optical properties. One such property of noble metal nanomaterials is the large optical field enhancement leading to strong absorption and scattering of light. We use the synergy between the enhanced optical properties of noble metal nanomaterials and the intrinsic electronic, optical, and vibrational responses of molecules to develop new functional nanomaterials and analytical methodologies. Techniques combining our light-based analytical approaches with the new functional nanomaterials will allow us (i) to elucidate dynamic interactions between various interfaces of nanoscale materials and biological-chemical systems, (ii) to develop a mechanistic understanding of molecular-level processes significant in medicine and energy applications, and also (iii) to develop field-transferable diagnostics and translational nanotheranostics. The outcomes of our work impact a wide range of fields, including nanomedicine, medical diagnostics, food and agriculture and also energy industry.
	**Daniel S. Jones** *Associate Professor* *Physical Chemistry* **B.S.:** Wake Forest University **Ph.D.:** Harvard University **Post-doc:** State University of NY at Buffalo; Naval Research Laboratory, Washington, D.C. **djones@uncc.edu**	X-ray Crystallography: Determination of molecular structures by X-ray crystallographic methods. Structure determinations are carried out on compounds of interest in a variety of research endeavors; the particular compounds studied often depend on the immediate research interests of faculty colleagues here and elsewhere. Compounds recently studied include those of interest in 1) thin-film microelectronics technology, 2) image enhancement in Magnetic Resonance Imaging, and 3) the search for cancer therapy agents.
	**Joanna K. Krueger** *Associate Professor* *Biochemistry* **B.A. (ACS):** Kalamazoo College **Ph.D.:** Princeton University **Post-doc:** (NIH/NRSA Fellow) U.T. Southwestern Medical Center	Biophysical Chemistry: My laboratory is interested in obtaining structural information on biomolecular associations using the techniques of small-angle X-ray and neutron scattering, chemical cross-linking with peptide analysis by Mass Spec, selected-site mutagenesis and spectroscopy (FTIR, CD, UV-VIS). We will use these data to build molecular models of protein:protein complexes and thus, to provide new insights into the molecular basis of protein interactions. Currently, we are looking at a protein, gelsolin, that when activated, through increases in

RESEARCH ADVISOR SELECTION FORM

Completed form should be given to the chair of the Graduate Committee after completion.

1. After discussing potential research problems with

   Dr. _____ _____
   (Signature)

   Dr. _____ _____
   (Signature)

   Dr. _____ _____
   (Signature)

   has stated that he/she would be willing to serve as my M.S. research advisor. This is my formal notification to the Chemistry Department Graduate Committee that I,

   _____
   Printed Name

   elected to have Dr. _____ serve as my research and thesis advisor.

2. *Proposed research topic:

   _____
   _____

   Date: _____ Initials of Student _____
   Initials of Research Advisor _____

*Note: After the first mini-seminar, the Graduate School requires the Appointment of Master's Thesis Committee and the Proposal Defense Report for Master's Thesis forms.

FIRST MINI-SEMINAR EVALUATION

Student's Name _____

Date of seminar _____

Evaluator's Name _____

Part 1 – Content

Criteria	Highly Competent (4)	Competent (3)	Developing (2)	Needs to Improve (1)	Rating (4-1 scale)
Extent of Literature Review	Includes specific and detailed information from the literature	Includes specific information from the literature	Includes some information from the literature, more information needed	Limited indication a literature review was conducted	
Understanding of work related to the research that has been reported in the literature	Assesses previously reported studies with a high degree of understanding	Assesses previously reported studies with a considerable degree of understanding	Assesses previously reported studies with some degree of understanding	Unable to assess previously reported studies	
Able to identify a research problem	Relates previous work from the literature to a specific research problem with a high degree of understanding	Relates previous work from the literature to a specific research problem with a considerable degree of understanding	Relates previous work from the literature to a specific research problem with some degree of understanding	Unable to relate previous work from the literature to a specific research problem	
Able to plan appropriate research strategies	Able to propose the necessary steps towards solving a research problem with a high degree of understanding	Able to propose the necessary steps towards solving a research problem with a considerable degree of understanding	Able to propose the necessary steps towards solving a research problem with some degree of understanding	Unable to plan appropriate research strategies	
Able to identify the goals of a specific research project	Clearly communicates project goals with a high degree of understanding	Communicates project goals with a considerable degree of understanding	Project goals are stated with some degree of understanding	Unable to clearly communicate project goals	

Part 2 – Oral Communication

Criteria	Highly Competent (4)	Competent (3)	Developing (2)	Needs to Improve (1)	Rating (4-1 scale)
Presents a specific research problem in a concise, well-organized manner	Presents information in a logical sequence; smooth transitions; successfully achieves the objectives of the seminar	Presents most of the information in a logical sequence; a few rough transitions; somewhat achieves the objectives of the seminar	Presents information in a confusing manner; difficult to follow the presentation; the objectives of the seminar are vague	Presents information in a disjointed manner; no logical order; cannot understand the presentation; does not achieve the objectives of the seminar	
Presents information with an appropriate level of detail	Information presented is accurate; key concepts and theories are based on a significant literature review	Information presented is somewhat accurate; a few key concepts and theories are inconsistent with the literature	Information presented is incomplete and inaccurate; little attempt is made to connect key concepts and theories to the literature	Information presented is highly inaccurate; no references are made to the literature that support key concepts and theories	
Uses visual aids that enhance the seminar (i.e. PowerPoint, videos, handouts, etc.)	Visual aids are prepared in a professional manner; slides contain information that maximizes the audience's understanding	Visual aids are prepared appropriately. Some information is not supported by visual aids and some slides are not well connected to the content of the seminar	Visual aids are poorly prepared and used inappropriately. Some slides focus on unimportant material that does not support the presentation	Visual aids detract from the presentation.	
Able to use the English language appropriately	Sentences are complete and are spoken using correct grammar. The speaker has the proper volume and is comfortable in front of a group.	Most sentences are complete and many are spoken using the correct grammar. The speaker is heard by most but appears uncomfortable in front of a group.	Some sentences are incomplete and some contain grammatical errors. The speaker is difficult to hear and is uncomfortable in front of a group	Because of the difficulties in grammar and vocabulary, the audience cannot focus on the presentation. The speaker is obviously uncomfortable and cannot be heard.	
Able to answer questions posed by the audience.	Demonstrates extensive knowledge of the topic by answering questions appropriately and precisely with confidence	Demonstrates knowledge of the topic by answering questions appropriately; however the speaker does not fully elaborate	Demonstrates some knowledge of the topic by responding to questions but does so reluctantly	Demonstrates a lack of knowledge of the topic by responding to questions inaccurately or by not responding to questions	

AVERAGE _____

FIRST MINI-SEMINAR PAPER EVALUATION

Student's Name _____

Date paper submitted _____

Evaluator's Name _____

Part 1 – Content

	Criteria	Highly Competent (4)	Competent (3)	Developing (2)	Needs to Improve (1)	Rating (4-1 scale)
Introduction	Paper includes a literature review	Includes specific and detailed information from the literature	Includes specific information from the literature	Includes some information from the literature, more information needed	Limited indication a literature review was conducted	
	Paper reflects an understanding of previously reported work	Describes previously reported studies with a high degree of understanding	Describes previously reported studies with a considerable degree of understanding	Describes previously reported studies with some degree of understanding	Does not describe previously reported studies	
Hypothesis or Research Problem	Paper identifies a research problem based on the literature review	Relates previous work from the literature to a specific research problem with a high degree of detail	Relates previous work from the literature to a specific research problem with a considerable degree of detail	Relates previous work from the literature to a specific research problem with some detail	Unable to relate previous work from the literature to a specific research problem	
Goals	Paper identifies the goals of a specific research problem	Clearly communicates project goals with a high degree of understanding	Communicates project goals with a considerable degree of understanding	Project goals are stated with some degree of understanding	Unable to clearly communicate project goals	
Methods and Procedures	Paper proposes appropriate research methods using appropriate strategies	Proposes a logical sequence of steps towards solving a research problem with a high level of detail	Proposes a sequence of steps towards solving a research problem with considerable detail. Some steps lack detail.	Proposes a sequence of steps towards solving a research problem. Most are without detail and are not in a logical sequence.	Unable to propose appropriate research strategies. Proposed sequence of steps is confusing. Inappropriate methods are proposed.	

Part 2 – Written Communication

Criteria	Highly Competent (4)	Competent (3)	Developing (2)	Needs to Improve (1)	Rating (4-1 scale)
Paper presents a specific research problem in a concise, well-organized manner	Presents information in a logical sequence; smooth transitions; successfully achieves the objectives of the seminar paper	Presents most of the information in a logical sequence; a few rough transitions; somewhat achieves the objectives of the seminar paper	Presents information in a confusing manner; difficult to understand the goals of the project	Presents information in an unorganized manner; no clear research goals are evident	
Grammar, Vocabulary and Spelling	Sentences are complete and use the correct grammar and vocabulary. No spelling errors.	Most sentences are complete and many use the correct grammar and vocabulary. Only one or two spelling errors.	Some sentences are incomplete and some contain grammatical errors and vocabulary errors. More than two spelling errors.	Because of the difficulties in grammar, vocabulary, and spelling, the paper could not be read.	
Uses tables, charts, and figures that enhance the understanding of the paper	Tables, charts, and/or figures are presented in a professional manner; visuals contain information that maximizes the reader's understanding	Some information in the paper is not supported by tables, charts, and/or figures. Some visuals are not well connected to the content of the paper	Tables, charts, and/or figures are poorly prepared and are used inappropriately. Some focus on unimportant material that does not support the paper	No tables, charts, and/or figures are included to enhance the understanding of the paper	
Paper is presented in an appropriate format	The paper is written entirely in the thesis format required by the Graduate School or according to the guidelines of the *American Chemical Society Style Guide*	The paper contains a few formatting mistakes, especially in the bibliography section.	The paper contains frequent formatting errors and references are cited incorrectly.	Inappropriate formatting is used	

AVERAGE _____

MS Thesis Defense EVALUATION

Student's Name _____

Date of defense _____

Evaluator's Name _____

Part 1 – Content

Criteria	Highly Competent (4)	Competent (3)	Developing (2)	Needs to Improve (1)	Rating (4-1 scale)
Demonstrates an understanding of previously reported work from the literature	Reports detailed and specific information from the literature with a high degree of understanding	Reports specific information from the literature with a considerable degree of understanding	Reports some information from the literature with limited understanding; more information is needed	Does not include information from the literature; demonstrates a lack of understanding of previously reported work	
Able to identify their own research problem based on previously reported work (i.e. preliminary results of the research group or previously published work)	Relates previously reported work to their specific research problem with a high degree of understanding	Relates previously reported work to their specific research problem with a considerable degree of understanding	Relates previously reported work to their specific research problem with some degree of understanding	Unable to relate previously reported work to their specific research problem	
Able to perform laboratory work and obtain results towards solving a research problem	Demonstrates an ability to successfully perform pertinent laboratory experiments; significant results which lead to solving the research problem are reported	Demonstrates an ability to conduct laboratory experiments; some results reported may lead to solving the research problem	Is currently being trained to conduct laboratory experiments; a few preliminary results are reported	No attempts have been made to conduct laboratory experiments; no preliminary results are reported	
Able to draw conclusions from laboratory data	Has successfully interpreted the collected data; conclusions are drawn which contribute to understanding a research problem	Is collecting, organizing, and analyzing laboratory data; some inferences towards understanding the research problem are made	Has attempted to collect, organize, and analyze data but cannot provide conclusive results	No laboratory data has been presented nor interpreted	
Able to propose future research activities related to a new or existing research problem	Able to propose future research strategies based on the laboratory results obtained to date and the projected research goals	Able to propose future research strategies but has little understanding of how it relates to the research goals	Unable to make connections between research results and future research strategies	Not knowledgeable of any future research activities that should be taken	

Part 2 – Oral Communication

Criteria	Highly Competent (4)	Competent (3)	Developing (2)	Needs to Improve (1)	Rating (4-1 scale)
Presents a specific research problem in a concise, well-organized manner	Presents information in a logical sequence; smooth transitions; successfully achieves the objectives of the seminar	Presents most of the information in a logical sequence; a few rough transitions; somewhat achieves the objectives of the seminar	Presents information in a confusing manner; difficult to follow the presentation; the objectives of the seminar are vague	Presents information in a disjointed manner; no logical order; cannot understand the presentation; does not achieve the objectives of the seminar	
Presents information with an appropriate level of detail	Information presented is accurate; all conclusions drawn are based on experimental evidence and interpretation of data	Information presented is somewhat accurate; a few conclusions drawn are inconsistent with the experimental data	Information presented is incomplete and inaccurate; little attempt is made to connect it to the data collected	Information presented is highly inaccurate; contains a misinterpretation of data	
Uses visual aids that enhance the seminar (i.e. PowerPoint, videos, handouts, etc.)	Visual aids are prepared in a professional manner; slides contain information that maximizes the audience's understanding	Visual aids are prepared appropriately. Some information is not supported by visual aids and some slides are not well connected to the content of the seminar	Visual aids are poorly prepared and used inappropriately. Some slides focus on unimportant material that does not support the presentation	Visual aids detract from the presentation.	
Able to use the English language appropriately	Sentences are complete and are spoken using correct grammar. The speaker has the proper volume and is comfortable in front of a group.	Most sentences are complete and many are spoken using the correct grammar. The speaker is heard by most but appears uncomfortable in front of a group.	Some sentences are incomplete and some contain grammatical errors. The speaker is difficult to hear and is uncomfortable in front of a group	Because of the difficulties in grammar and vocabulary, the audience cannot focus on the presentation. The speaker is obviously uncomfortable and cannot be heard.	
Able to answer questions posed by the audience.	Demonstrates extensive knowledge of the topic by answering questions appropriately and precisely with confidence	Demonstrates knowledge of the topic by answering questions appropriately; however the speaker does not fully elaborate	Demonstrates some knowledge of the topic by responding to questions but does so reluctantly	Demonstrates a lack of knowledge of the topic by responding to questions inaccurately or by not responding to questions	

AVERAGE _____

Written Thesis EVALUATION

Student's Name _____

Thesis submitted _____

Evaluator's Name _____

Part 1 – Content

	Criteria	Highly Competent (4)	Competent (3)	Developing (2)	Needs to Improve (1)	Rating (4-1 scale)
Introduction	Thesis includes a literature review	Includes specific and detailed information from the literature	Includes specific information from the literature	Includes some information from the literature, more information needed	Limited indication a literature review was conducted	
	Thesis identifies a specific research problem based on previously reported work	Relates previously reported work to their specific research problem with a high degree of understanding	Relates previously reported work to their specific research problem with a considerable degree of understanding	Relates previously reported work to their specific research problem with some degree of understanding	Unable to relate previously reported work to their specific research problem	
Experimental	Thesis describes specific laboratory experiments	Gives full details of specific laboratory experiments that were conducted and that are appropriate for the research problem	Gives details of some laboratory experiments that were conducted. More experimentation is needed.	Gives a description of laboratory experiments that were conducted. Most experiments were not directed towards solving the research problem	Paper lacks experimental detail. All experiments conducted were inappropriate	
Results	Thesis describes the results of pertinent laboratory experiments that are relevant towards solving the research problem	Indicates pertinent laboratory experiments were performed successfully and significant results lead to solving the research problem	Indicates an ability to conduct laboratory experiments. Some results lead to solving the research problem	A few preliminary results are described. More laboratory experiments must be conducted.	No attempts have been made to describe the results of any laboratory experiments conducted	
Discussion	Thesis includes an interpretation of the data collected and draws conclusions from the laboratory results	Successfully analyzes all data in a manner that contributes to solving a research problem	Some data is analyzed and related to solving a research problem	Has attempted to analyze the data but cannot provide conclusive results	No data has been analyzed nor interpreted	

Part 2 – Written Communication

Criteria	Highly Competent (4)	Competent (3)	Developing (2)	Needs to Improve (1)	Rating (4-1 scale)
Thesis presents a specific research problem in a concise, well-organized manner	Presents information in a logical sequence; smooth transitions; successfully achieves the objectives of the seminar paper	Presents most of the information in a logical sequence; a few rough transitions; somewhat achieves the objectives of the seminar paper	Presents information in a confusing manner; difficult to understand the goals of the project	Presents information in an unorganized manner; no clear research goals are evident	
Grammar, Vocabulary and Spelling	Sentences are complete and use the correct grammar and vocabulary. No spelling errors.	Most sentences are complete and many use the correct grammar and vocabulary. Only one or two spelling errors.	Some sentences are incomplete and some contain grammatical errors and vocabulary errors. More than two spelling errors.	Because of the difficulties in grammar, vocabulary, and spelling, the paper could not be read.	
Uses tables, charts, graphs, and/or figures that enhance the understanding of the experimental data	Tables, charts, graphs, and/or figures are presented in a professional manner. Visuals appropriately display key experimental data that contribute to solving the research problem	All of the key experimental data in the paper is not supported by tables, charts, graphs, and/or figures. Some visuals are not well connected to the experimental data	Tables, charts, graphs, and/or figures are poorly prepared and are used inappropriately. Some focus on unimportant material that does not support the data analysis	No tables, charts, graphs, and/or figures are included to enhance the understanding of the research results	
Thesis is presented in an appropriate format	The paper is written entirely in the thesis format required by the Graduate School or according to the guidelines of the *American Chemical Society Style Guide*	The paper contains a few formatting mistakes, especially in the bibliography section.	The paper contains frequent formatting errors and references are cited incorrectly.	Inappropriate formatting is used	

AVERAGE _____

UNC CHARLOTTE

Department of Chemistry

Procedures for MS Students
Department of Chemistry

CHEMISTRY MS MILESTONES:

The MS program in chemistry has four milestones that should be met by the student / advisor team, as listed in the table below. Procedures for each event are listed subsequently.

Milestone	Timeline	Registration - Credits	SLO	Forms
Thesis advisor selection	Semester 1			yes
1st Mini-Seminar	Semester 2	CHEM 6681 – 1CR	oral - SLO paper SLO	yes
2nd Mini-Seminar	Semester 3	CHEM 6682 – 1CR		no
Thesis Defense	Semester 4 or summer		oral – SLO thesis SLO	Yes

PROCEDURES:

1. **Thesis Advisor Selection**
   At the beginning of the first semester (for on-sequence students) faculty research presentations will introduce the new MS student to the research carried out by faculty members in the department. These short presentations will be followed up by at least three faculty-student meetings, based on the student's interest. By the middle of the first semester beginning MS students are expected to have chosen a research advisor, completed the research advisor selection form and handed this form in to the Assistant Student Coordinator for the MS program. No form to the Graduate School is required.

2. **First Mini-Seminar – CHEM 6681** (1 CR)
   By the beginning of the second semester, MS students should discuss the scheduling with their research advisor and thesis committee.
   a. Student make room reservations with the Administrative Assistant (14 days in advance).
   b. Student submit title and abstract to the Assistant Student Coordinator for the MS Program (14 days in advance).
   c. Student pickup SLO Rubrics for presentation and paper from the Assistant Student Coordinator (5 days in advance).

d. After the non-public oral presentation and subsequent discussion with the MS thesis Committee, the student will submit the two completed forms (see below) to the Assistant Student Coordinator to obtain copies for internal files; the Assistant Student Coordinator will ensure that copies are send to the Graduate School.
    i. Proposal Defense Report for Dissertation/Master's Thesis Form
    ii. Appointment of Master's Thesis Committee Form
e. Each MS Thesis Committee member will fill out a SLO Rubric for the oral presentation and subsequent discussion.
f. Committee Chair will collect all SLO Rubrics for the presentation from Committee members and hand in the original form to the Assistant Student Coordinator (within 5 days of presentation).
g. Student will be required to complete the final version of the first mini-seminar paper within 21 days of presentation. The MS Thesis Committee Chair e-mails the final version of the mini-seminar paper to the Master's Program Coordinator (Assistant Student Coordinator cc-ed to that e-mail).
h. Committee Chair ensures that the completed SLO Rubrics from all MS Thesis Committee members for the written paper are collected and delivered to the Assistant Student Coordinator (within 30 days).
i. At that time the Thesis Committee Chair communicates the grade first mini seminar grade to the Master's Program Committee Chair.

If the first mini-seminar is not given by the end of the second semester the student is not making timely progress in the MS program, potentially resulting in no further tuition and / or TA-support.

3. **Second Mini-Seminar – CHEM 6682** (1CR)
   By the beginning of the students third semester, MS students should discuss the scheduling the second mini-seminar with their research advisor and thesis committee.
    a. Student make room reservations with the Administrative Assistant (21 days in advance).
    b. Student submit title and abstract to the Assistant Student Coordinator (18 days in advance) with date, time and location of the presentation.
    c. The Assistant Student Coordinator will post flyer and email faculty and grad students at least 14 days in advance.
    d. Student presents a public seminar that should not exceed 30 minutes, including the public discussion. The attendance of all MS Thesis Committee members is required; in the case of one committee member being absent, a separate meeting between this MS Thesis Committee member and the student will be required. The second mini-seminar does not SLO Rubrics are needed.
    e. Student submits the final version of the second mini-seminar paper to the Assistant Student Coordinator (within 21 days of presentation). The MS Thesis Committee Chair e-mails the final version of the mini-seminar paper to the Master's Program Coordinator (Assistant Student Coordinator cc-ed to that e-mail).
    f. Thesis Committee Chair communicates the second mini-seminar grade to the Master's Program Committee Chair.

If the second mini-seminar is not given by the end of the third semester the student is not making timely progress in the MS program, potentially resulting in no further tuition and / or TA-support.

4. **Thesis Defense**

Student should discuss the scheduling of their Thesis Defense with their research advisor and Thesis Committee at the beginning of the semester, keeping University deadlines in mind. While e-mail reminders of the latter will be sent out, all official deadlines are listed on the academic calendar.

a. Students should submit intend to graduate to the Master's Program Committee Chair and the Assistant Student Coordinator after approval by their mentor and prior to the deadline for application to graduate.
b. Student initiates process by application for graduation along the Graduate School's procedure guidelines along the published Master's Thesis Checklist.
c. Student make room reservations with the Administrative Assistant (21 days in advance).
d. Student submit title and abstract to Assistant Student Coordinator (18 days in advance) with date, time and location of presentation.
e. Assistant Student Coordinator will post flyer and email to faculty and grad students at least 14 days in advance.
f. Student pickup SLO rubrics for presentation and thesis from Assistant Student Coordinator (5 days in advance)
g. Attending faculty complete the SLO Rubrics for oral defense and deliver completed SLO rubrics to the thesis advisor within 2 days of the defense.
h. After the oral defense and subsequent discussion, the MS Thesis Committee Chair collects the committee's SLO rubrics for oral defense and hands in ALL SLO rubrics to the Assistant Student Coordinator within 4 days.
i. After the oral defense and subsequent discussion, the completed Thesis Final Defense Report and the title page of the thesis with ALL committee signatures will be due at the Graduate School within 24 business hours. These forms do NOT complete the student's graduation.
j. Thesis Committee members complete SLO rubrics for the written thesis upon completion of the final written version. Signature on the ETD form by the Thesis Committee Chair indicates the fulfillment of all requirements for MS graduation. The Committee Chair returns the collected SLO rubrics to the Assistant Student Coordinator after signing the ETD form.

Staff Information – Fall 2020:

- Administrative Assistant: Chelsea Burchett (Burson 200)
- Assistant Student Coordinator for the MS Program: Clarissa Ramos (Burson 200)

For detailed, updated and deadline information on forms:
http//graduateschool.uncc.edu/current-students