

## Earning a MS Degree in Chemistry

### General Comments

The closest thing to a legally binding document related to your degree is the Bulletin of the Graduate Division (<http://arweb.sdsu.edu/es/catalog/bulletin/index.html/>). Additional details can be found in this document as well as on the Graduate Division web page. The following is a sequential summary of the requirements for earning a Master of Science degree. The MS degree requires two or more years of research under the supervision of a faculty advisor. Choose your research advisor by the area(s) of your interests. This is perhaps one of the most important professional decisions that you will make. Quoting the 2017-2018 Bulletin of the Graduate Division, page 56: **Students are individually responsible for the information contained in this bulletin. Although the Division of Graduate Affairs attempts to preserve requirements for students subject to this bulletin, information contained herein is subject to change from year to year as university rules, policies, and curricula change. Questions concerning graduate study at San Diego State University should be referred to the Graduate Division.** The Graduate Division office is located in Student Services East 1410. Although the Chemistry Department Graduate Advisor and the Graduate Division will do their best to keep you informed of procedures, etc., ultimately, you are responsible for your schedule and academic progress. Be sure to read the Basic Requirements for Master's Degree that begins on page 72. Rules may change, but in general you should follow the latest edition of the Graduate Division's documents. However, the requirements governing your "Official Program for the Master's Degree" will be those specified in the Graduate Bulletin which are in effect at the time your program of study is approved by the Graduate Division. This usually occurs during your third semester in the graduate program. Many of the forms that you might need are available on-line at: <http://aztecgrad.sdsu.edu/gra/graforms.aspx>.

1. **Interview all research faculty in your area(s) of interest.** You should begin the interview process early in your first semester. The **Faculty Interview** form will be given to you when Chem 695 starts the week before the first day classes. You will also hear short presentations on Faculty research in Chem 695. Make an appointment to talk to each of the faculty in the area(s) of your research interests. The faculty will sign this sheet during your interview. It is possible that your research interests may require you to talk to faculty in more than one of the five areas of chemistry. You may wish to talk with some of them more than once in order to choose your research advisor. Also, talk to other graduate students throughout your division and make an informed decision about your choice of research advisor and research group. At the end of Chem 695 you will submit a listing of groups you would like to join. Take time to make a good decision, but you must complete this step and begin research by November 30 of your first semester of graduate study.

2. **Preliminary Program of Study.** After you have selected a research advisor you will need to complete your **Preliminary Program of Study for the MS Degree**. This worksheet details what classes you intend to take for your MS degree. Discuss this with your research advisor for their recommendations including required courses for your degree. This form also establishes a tentative graduation date and if necessary begins the application process for human subject or animal care or use (see below). This form also needs to be returned to the Graduate Advisor by October 31 in your first semester of graduate study.

If your research involves human subjects, or analyzes existing or secondary data sets, (such as human tissues or samples) and these results are intended for publication in a thesis, dissertation or journals, you are required to

submit an application to the Institutional Review Board (IRB) before beginning research. The IRB website provides review application materials and guidance: <https://newscenter.sdsu.edu/researchaffairs/hrpp.aspx?> **Allow 4-6 weeks for completion of the IRB review process once application materials are submitted.**

**Research involving animals must also be approved by the Institutional Animal Care and Use Committee (IACUC) prior to any research.** IACUC regulations and procedures may be obtained in the Office of Laboratory Animal Care (OLAC). The SDSU web site is: <https://newscenter.sdsu.edu/researchaffairs/animal-care.aspx> or through the Division of Research Affairs located in Gateway Center, Room 3519.

3. **Attain Classified Graduate Standing.** Most everyone begins his or her graduate education with a Conditionally Classified Student status. You must satisfy the following requirements in order to change your status to Classified Graduate Standing. This must be completed within the first year of your graduate study. Otherwise a petition will need to be submitted to give you a semester extension. This basic requirement can be complete by two routes:

A. **Orientation/Qualifier Exams or Courses.** You must pass 3 of the 5 divisional Orientation Exams, at the 50<sup>th</sup> percentile or higher level. These exams are given one to two weeks before the beginning of the Fall and Spring semesters. You have three opportunities to pass these exams before beginning your third semester of study, otherwise you **must** take one of the approved courses listed below, earning a B or higher grade to satisfy this requirement. These courses can also be taken during your first year of study. The approved courses are listed by the 5 divisions:

Analytical	550, 750, 751, 752 and 753	Organic	432, 531, 538 and 730
Biochemistry	560, 562, 563, 564, 761, 763 and 765	Physical	410A or 410B, 510, 711, 712, 713 and 714
Inorganic	520A and 520B		

If you do not meet this requirement within the first year, a registration hold will be placed on you and a petition for an extension must be filed and approved before you can start your third semester of study.

B. **Other requirements.** You may be required to meet other requirements as a stipulation of your admission into our program. It is important that you be aware of these requirements and complete them prior to the deadline date. See the Department of Chemistry & Biochemistry Office or Graduate Advisor for your specific requirements of your admission into our graduate program.

The Graduate Advisor will automatically change your status to Classified Graduate Standing shortly after you have met the above requirements.

4. **Annual Progress Report.** MS, as well as Ph.D., graduate students are required to write annual progress reports in the format of a full paper to the journal where this will be submitted. This draft version of the paper is due June 1<sup>st</sup> to your research advisor for review and approval. Your research advisor will forward their evaluation of your progress report to the Graduate Advisor. This requirement may be subject to Departmental review.

5. **Chem 791 Research Seminar.** By the third semester of study, you should have a well-established research project. At that time you should present your Chem 791 Research Seminar that details the goals of your research, reviews the background literature, summarizes progress to date and finally outlines proposed future research to conclude this project. If significant research problems are encountered, it may be possible to postpone this to the fourth semester. It is highly recommended that you invite tentative thesis committee members to attend your seminar. Your research advisor can suggest potential committee members, one from within the Department of Chemistry and the other outside the Department. Non-faculty or faculty outside the university can be chosen as a 4<sup>th</sup> committee member. As usual, these seminars are announced well in advance and are open to the general public. Chem 790 can be taken the same semester or the following, but should not be taken in your first year of study since you are unlikely to have sufficient background unless you have already earned a master's degree.

6. **Official Program of Study (POS).** After you have passed the qualifier exam requirements and attained Classified Graduate Standing, you can submit an **Official Program of Study and Advancement to Candidacy for an Advanced Degree.** Generally the Official Program of Study is submitted in November or December in your third semester. This document lists all courses that you have taken or plan to take to meet your MS degree. Your preliminary program of study is a good starting point for the Official Program of Study.

**Exchange Classes at UCSD.** You can take classes at UCSD provided they complement those courses offered here. However, they must be part of your program of study for the MS degree. You must be in good academic standing. A 4-unit class at UCSD converts to a 2-unit class at SDSU. The corresponding fees for those four units classes are equivalent to a 3-unit class at SDSU. You need to begin the paperwork to take classes at UCSD at least a month before the start of the quarter at UCSD. See Graduate Advisor to file paperwork. If you wish to take courses at UCSD before you file your program of study, see the graduate advisor in the summer to file an early POS.

Any deviation from the specific master's degree requirements listed in the Graduate Bulletin must be requested on a **Petition for Adjustment of Academic Requirements.** Discuss any changes with the Graduate Advisor prior to submission of your **Official Program of Study and Advancement to Candidacy for an Advanced Degree.**

The basic requirements are:

The student must complete a graduate program of 30 units which includes a major consisting of at least 24 units in chemistry from courses listed in the graduate catalog as acceptable on the master's degree programs. At least 15 of these units must be in 600- and 700-numbered courses. Chemistry 790, 791, 792 and 799A are required. A student must pass a final oral examination on their thesis. Up to 6 units of classes outside the Department of Chemistry can be included in the program of study. These courses must be at the 500 or higher level. In addition, a maximum of 9 units can be transferred from other universities or as open-university classes, providing they meet the basic requirements for the master's degree. Three and four unit quarter credit hours courses are transferred as two semester credit hours. All classes taken outside the Department of Chemistry require prior approval by the Graduate Advisor before submission of your program of study.

Your grade point average must be at least 3.0 (B) in the following:

- Courses listed in the **Official Program of Study.**

- Courses required to complete undergraduate deficiencies.
- All courses taken at the 300-level and above concurrently to the earliest course listed in the **Official Program of Study**, including courses accepted for transfer credit.

Transfer or extension courses may not be used to improve the grade point average of units completed at San Diego State University. None of your program courses can have a grade less than 2.0 (C). Your overall GPA must be at least a 2.85 in order to submit your POS. However, you must have a GPA of 3.0 in order to be advanced to candidacy (see next section).

The set of requirements specified in the Graduate Bulletin at the time your **Official Program of Study** is approved will be in effect for your degree.

Any change for an elective class option to your **Official Program of Study** after it has been approved must be made on a **Petition for Adjustment of Academic Requirements** form. If the change affects a specific degree requirement, Chem 790, 791, 792 or 799A, versus an elective option, it must be made using a **Petition for Adjustment of Academic Requirements**.

At a minimum, your **Official Program of Study** must be approved at least one semester before your anticipated graduation date. Approval of your program of study may require 2-4 weeks.

7. **Advancement to Candidacy.** Generally you will be advanced to candidacy at the same time that your **Official Program of Study** is approved. Any deficiencies that prevent advancement to candidacy at this point will result in the review of your status at the end of each semester by the Graduate Division. Your GPA must be 3.0 or higher to be advanced to candidacy.

You must be advanced to candidacy before you will be allowed to officially form your thesis committee.

**Note.** Well before the beginning of the semester that you intend to graduate, you need to begin writing your MS thesis. **Your annual progress reports and the Chem 791 research seminar will greatly aid you in organizing and writing of your thesis.** Regardless, it may take 3-4 months to write, edit and have a final version approved by your research advisor. **Plan accordingly!** It is strongly recommended that you use the SDSU Dissertation & Thesis Manual. The manual is available from Aztec Shops Bookstore. You may want to consider visiting the Writing Center if you are having difficulties putting your thesis together. Visit the SDSU Writing Center at [www.writingcenter.sdsu.edu](http://www.writingcenter.sdsu.edu) for more information. Discuss organization and details with your research advisor and if necessary, contact the Dissertation and Thesis Reviewer with questions about specific formatting problems encountered as you write your thesis.

8. **Submit Thesis Committee Form.** After you have been advanced to candidacy, obtain the **Appointment of Thesis/Project Committee** form from the Graduate Division. This form is available only through the Graduate Division and may be mailed on request. This form lists the three-committee members. The chair of the committee is your research advisor, with the second member from this department. A third committee member is from any department outside of Chemistry. All three members should be full-time

faculty, although one adjunct or emeritus member is allowed. It is possible to have a fourth committee member as a non-faculty supervisor or faculty outside SDSU upon approval by the Chemistry Department Chair. The Graduate Division can make exceptions for non-tenured faculty to serve as second or third committee members, including lectures when the situation warrants it.

The Appointment of Thesis/Project Committee also requires a signature verifying that research involving humans or animals has been pre-approved by the appropriate committees. Students conducting research involving human subjects are required to apply for review through the Institutional Review Board (IRB) and animals through the Institutional Animal Care and Use Committee (IACUC) **prior** to any research. **Note**, you should have completed IRB or IACUC authorization before beginning your research in your first semester of study.

Also, complete the Rights to Thesis/Dissertation Data and Publication Authorship portion on the second page of this form.

Lastly, the Graduate Advisor must approve and sign this form before you return it to the Graduate Division for approval. Approval may require up to 2 weeks.

**Note.** The important deadlines vary slightly each semester. These dates may be found at the Graduate Division, in the Academic Calendar of the Graduate Bulletin. In order to graduate at your planned date, you must meet the deadlines.

9. **Chemistry 792 Bibliography.** Register for this course the same semester that you enroll in 799 or the previous semester, whichever fits your schedule best.

10. **Register for Chem 799A.** You can only register for Chem 799A after you have completed all of the above requirements and the Graduate Division has approved your Thesis Committee. Register the semester that you plan to submit your thesis and graduate. At that point, your thesis should be in a fairly advanced stage of preparation. Typically a MS thesis takes 3-4 months to complete. The first time, Fall, Spring or Summer, that you register for Chem 799 you must register for 799A through SDSU. Chem 799B, thesis extension, can be taken through Extended Studies for less cost than registering through SDSU. In either case, you must be enrolled in 799A or 799B the semester that your thesis is submitted to Thesis Review and during all semesters that you are consulting with faculty or using campus facilities.

Contact the Graduate Division to obtain the schedule number for Chem 799A or 799B, even if you plan on enrolling through Extended Studies. You must enroll on or before the 10<sup>th</sup> day of the semester. Chem 799A is a 3-unit class, while Chem 799B has 0-units, however, you will be charged for 1 unit for this class. Both 799A and B are considered full time and you don't need to register for additional courses if you have completed your program of study. However, if you are only registering for Chem 799A, you may want to also register for 3 units of 797, since your fees will be the same.

11. **File Application for Graduation.** You must apply for graduation, since this is not automatic. It is recommended that you submit your application for graduation at the beginning of the semester that you plan to graduate. The deadline for this is listed in the Academic Calendar of the Graduate Bulletin or on the Division of Graduate Affairs web page, <http://aztecgrad.sdsu.edu/gra/>. File for an application via Web Portal. The completed application must be filed with the appropriate fee at the Cashier's Office. Late applications are not accepted! Students who do not complete all degree requirements during the semester they apply for graduation are required to reapply and pay the application fee again. You will receive an Evaluation for Graduation from the Graduate Division as a result of the Application for Graduation form. This mid-semester evaluation lists the deadlines and requirements not yet completed. It is imperative that you take immediate action to complete these in order to graduate that semester. However, you may "walk" in the Spring Commencement, even though you do not plan to graduate until Summer or have completed your degree the previous Fall semester. You will need to apply for graduation by the second week of the semester. Also, attend the GradFest to get all of the graduation necessities, caps/gowns, tickets, announcements and etc., in preparation of attending the Spring Commencement. This is usually held about the same time that at-risk begins in early April.

12. **Oral Defense of Thesis.** An oral presentation of your thesis work must be presented after you have finished writing your thesis and your research advisor has approved it. This oral presentation must be announced and posted the week prior to your presentation and is open to all. Before your defense can be scheduled, check with all committee members for their dates of availability. They should be given a copy of your thesis approximately two weeks in advance of the defense date. See the Department of Chemistry Graduate Student Handbook for guidelines on your oral defense. It is a good idea to have several copies of the signature page prepared for signing after your successful defense. You need this signature page and having additional copies save you much time and aggravation if the first copy gets damaged. After a successful oral defense, minor editing may be required per suggestions of your committee. This must be completed before your thesis can be submitted for Thesis Review. It is important that your thesis be as error free as possible. Note, you must meet the deadlines in order to graduate on schedule, pay attention!

13. **Thesis Clearance Sheet.** After your thesis has been edited from your oral defense, insert the signed signature page. Take your completed thesis to the Montezuma Publishing. Your enrollment in Chem 799A or 799B will be verified, and a comparison of signatures to the Appointment of Thesis Committee Form will be made. You will need to submit your thesis for format review.

14. **Submit Final Version of Thesis to Thesis Review** You can format your thesis yourself, hire a professional editor or use Montezuma Publishing to do the editing. Regardless, you are responsible to meet the policies outlined in the SDSU Dissertation & Thesis Manual. Additional details on the Chemistry Style Sheet can be found in Appendix A of the Chemistry Graduate Student Handbook and in the SDSU Dissertation & Thesis Manual. In addition, Appendix B in the Graduate Student Handbook gives the thesis review procedures and Appendix C is a pre-screening intake form for the thesis review service. Students are encouraged to contact Thesis Review at any point while writing the thesis with questions about formatting. You must be enrolled in Chem 799A or 799B when you submit the thesis for review. Also, be aware of deadlines. These dates are also printed on the application for graduation. If you submit your thesis before "at risk" begins (approximately 10<sup>th</sup> week of the semester) you should be able to graduate that semester. It is important that you submit your thesis to Thesis Review before the last day of the semester error free or at worst case with only moderate errors. This

will result in you not needing to register for Chem 799 A or B again, but you will need to file another application for graduation and pay the fees again. If your thesis is returned because of major errors and you do not get these fixed before the last day, you will need to register for Chem 799 B and file an application for graduation the following semester. The quality of your thesis and when it is submitted for review will determine how long the review and approval takes.

### Other Important Information

It is very important that you make suitable progress towards your master's degree if you are supported at a teaching assistantship or are awarded a nonresident tuition waiver (NRTW). You must be registered for 6 units of classes each semester that are included in your program of study. Whenever possible, take the 700 level graduate classes, they are offered in a less frequent basis than 500 level courses. The Graduate Advisor must approve all courses taken outside the Department of Chemistry & Biochemistry in advance. Also, maintain your GPA for all courses at the 300 and higher level  $\geq 3.0$ . Failure to make suitable academic progress or maintain a 3.0 GPA may result in the loss of your TAship and NRTW. NRTW are limited to 5 semesters. You are responsible for your fees beyond these time limits. Also, your TA appointments will be renewed annually and is limited to a maximum of 3 years. Renewals are based on part on your evaluations as a teaching assistant.

It is highly recommended that you are enrolled and taking classes each semester until you have completed **all** degree requirements and filed for graduation. Occasionally, students need to take time off from their studies. This is more frequently after all of major requirements have been met and there isn't a major push to register for classes. You must apply for a leave of absence from your WebPortal account.

8/21/17