

Thesis Master's Program Guidelines

The following guidelines indicate the timetable that should be followed by the full-time student wishing to complete the Thesis Master's degree in four semesters. Starting Fall 2012, this thesis option is available only under special circumstances. Most students will either be in the non-thesis Master's option or will be in the doctoral program if they are doing research. Also consult the Florida Tech catalog, the Graduate Programs Policy Manual (<http://www.fit.edu/grad-programs/policies.php>), and the Florida Tech Thesis Manual and Style Guide.

A student must have a cumulative grade point average of at least 3.0 to initially register for thesis. Students involved in thesis work must register for thesis each semester, including summers, until their thesis is defended successfully. When the thesis is accepted, grades of S are changed to P (ungraded).

I. Qualifying Exams and Program Plan. Entering students are expected to have had a minimum of one year each of undergraduate organic chemistry, physical chemistry, analytical/instrumental analysis, and inorganic chemistry. Departmental qualifying exams may be offered in these fields to entering students. On the basis of these exams or their background, students may be required to take appropriate course work and earn a C or better. The Placement Committee or the research advisor, if chosen, will prepare a [Master's Degree Program Plan](#) which must be on file in the Department before 9 credit hours of graduate work are completed (See the attached example form). This plan can be modified later. Any request for transfer credit evaluation by the Department Head must be made during the first semester. Up to 6 credit hours of 4000-level (3000-level non-chemistry) coursework may be included in the program plan. The [Graduate Request to Study at Another Institution & Transfer Credits](#) form can be submitted to the Graduate Programs office to include these undergraduate courses in the graduate GPA. The student must register for Chemistry Graduate Seminar (CHM 5900) each semester. Once students register for thesis, they must continue each semester until the thesis has been accepted by Graduate Programs.

II. Selection of Advisor, Research Topic, and Advisory Committee. During their first semester, students meet informally with faculty members (minimum of three) to learn about the various research activities. Based on these interviews, a research advisor is generally selected during the first semester with the concurrence of the advisor and the department head. A research topic is chosen that is mutually agreeable to both the student and advisor.

With the assistance of the advisor, the Advisory Committee is nominated. This committee consists of the advisor as chair and at least two additional members, one of whom must be a full-time Graduate Faculty member outside the chemistry department. The department head must approve this committee. An [Establishment of Master's Committee](#) form (attached sample) must be completed with the signatures of all committee members and filed with the Office of Graduate Programs. The committee serves in an advisory capacity throughout the remainder of the student's master's program and is responsible for formally evaluating the student's progress.

III. Thesis Research Proposal. The student must prepare and present the proposed thesis research project to the Advisory Committee. The presentation should occur during the second or third semester (including summer). Although your advisor will give you assistance, the majority of the effort will be yours. You will need to do extensive literature work and become familiar with materials, equipment and techniques, many of which may be new to you.

The proposal serves the purpose of explaining the intended research in sufficient detail for the advisor and advisory committee to evaluate it. This ensures that the proposed thesis research is of suitable content and duration for a master's degree and, if successfully completed, will meet acceptable scientific standards.

A good research proposal can take many forms but in general it should be a well-organized, well-documented statement of a scientific problem and an equally well-supported proposed solution. The proposal should include a thorough literature survey, a clear statement of the problem, the proposed research along with any preliminary results, and a timeline for completion of the project. The techniques and equipment to be used should be described. In addition, if any unusual techniques (e.g., not previously used at Florida Tech) or special items of equipment (e.g., equipment which must be purchased, constructed or borrowed) or special facilities (e.g., located off campus) are required, or if there are any other unusual features of the proposed research, detailed descriptions must be provided. The finished proposal should be an example of your best effort. It should be typed and neat in appearance with numbered pages. (See the attached Guidelines for Thesis Research Proposal for the title page and more details.) Submit a copy of the proposal to each of the committee members at least seven days prior to the meeting.

At the proposal meeting, the committee will either approve the proposal, or require alterations before approval. If the committee approves your proposal they will sign the proposal cover page (see attachment). The signed cover page does not guarantee that you will complete your degree, but it does demonstrate that your proposal was judged to be sound. Keep one copy of the form for your records. The second copy is retained, along with a copy of your proposal, by the department. If the proposal is not acceptable, you will be given instructions as to the proper course of action.

IV. **Research.** This stage begins during the first year and is generally the most enjoyable. See the attached guidelines for maintaining a proper research notebook. Your research advisor may provide you with other guidelines. The advisor will be responsible for guiding both the candidate's research and preparation of the thesis. During the period of research, the advisor will evaluate the student's progress at the end of each semester and place a copy of this evaluation, with the student's signature, in the student's file. A grade of U in thesis research or an unsatisfactory progress notification from a graduate student committee will result in removal from the thesis degree program and placement into the non-thesis option. If the student already has an MS degree they will be removed from the department.

V. **Thesis.** In general the writing of the thesis will require about one semester to complete. Many times the first draft of your thesis can be started while research is still in progress. Under your advisor's direction, prepare at least one copy of your thesis rough draft. (See the attachment and the Florida Tech Thesis Manual and Style Guide and <http://www.fit.edu/grad-programs/thesis.php> for format details.) Although in some cases an advisor may separately approve portions of a thesis draft, it must be clearly noted that the committee members are under no obligation to review anything short of a totally complete thesis. After making revisions as directed by your advisor, submit one corrected copy to each of the remaining committee members for their review. Make additional corrections or changes as required.

VI. **Thesis Seminar and Defense.** Your thesis research will be presented in a seminar to the department. In the committee meeting you will answer questions related to your research and graduate study. (See the attached seminar guidelines.)

Schedule the seminar, with the approval of your Advisory Committee and the seminar coordinator, followed shortly thereafter by the committee meeting. Note that this meeting must be completed at least two weeks prior to the date of graduation. (See [current deadlines](#).) Schedule a seminar time with the seminar coordinator to present your research to the department prior to the final defense. The exam time (e.g. 6:00pm) is after the public seminar (e.g. 5:00 pm). An [Oral Defense Announcement](#) must be sent to the Office of Graduate Programs at least two weeks in advance of the exam date (see example attachment). Submit to each committee member a copy of your thesis in its final corrected form at least seven days prior to the final defense. Please note that any delays in the completion of the thesis or failure to schedule and complete the final defense by the deadlines established by the University may require the student to delay graduation until the following term.

VII. **Petition to Graduate.** To avoid a late fee, the [Petition to Graduate Form](#) (attached) along with the Master's Degree Program Plan (attached) must be filed with the Registrar before the [deadline](#), generally early in the semester before the semester of graduation.

Guidelines for Thesis Research Proposal

The proposal should provide a clear statement of the proposed research, in sufficient detail to allow a meaningful review by the student's research committee, but not so much detail that it substitutes for the final thesis. The proposal should be 10-15 pages (double-spaced) in length.

The following organization is suggested:

Title Page. See example on next page.

Statement of Proposed Research. Include a clear concise statement of what the specific research is intended to accomplish and its significance. (1 page)

Introduction. A review of what is known about the subject relevant to the proposal, critically evaluating the existing knowledge and identifying the gaps that the project is intended to fill. Use references as appropriate. (4 - 5 pages)

Outline of experimental Approach. Describe the research design and the procedures to be used to accomplish the specific aims of the project. Include the means by which the data will be collected, analyzed, and interpreted. Discuss the potential difficulties and limitations of the proposed procedures, considering alternative approaches. Include any preliminary results. (4 - 6 pages)

Summary. Discuss the expected outcomes and how they relate to the goals of the project. (1 - 2 pages)

Timeline. Itemize the proposed research tasks, including the writing of the dissertation, with estimated dates for each so that you and the committee have a realistic idea of the length of time required to complete your degree. (1 page)

References. List only those cited in the proposal.

Title of Thesis Proposal
in Initial Capitals Only

by

Your Complete Name
Bachelor of Science, University of Florida

A thesis proposal
submitted to the Department of Chemistry and
Florida Institute of Technology
in partial fulfillment of the requirements
for the degree of

Master of Science
in
Chemistry

Approved by

(Name), Ph.D., Committee Chairperson
Associate Professor, Department of Chemistry

Date

(Name), Ph.D.
Assistant Professor, Department of Chemistry

Date

(Name), Ph.D.
Associate Professor, Department of (Name)

Date

Thesis Proposal Title Page

Laboratory Notebook

A laboratory notebook is a permanent record of what transpires in the laboratory. The notebook is considered a legal document and often every page must be witnessed as well as dated. Patent rights on a new discovery depend on establishing the exact time of the discovery. The notebook forms the basis for scientific papers and reports since the first step in the process is the collection of data.

Each student should have a notebook with bound (not spiral), numbered pages for recording all data, observations, comments and notes regarding the experiments. Record all your observations as well as the data. For example, if the laboratory temperature changes significantly or you spill a sample and continue to use it, note this; when you analyze your results you may find that later data differs from earlier data and the notebook record will provide the explanation. Record everything directly into the notebook in ink; this is meant to be a permanent record. If you make a mistake, don't obliterate the mistake; simply put a line through it with a short explanation as to why you think it is incorrect. You may find later that this data was more correct than other data. Don't use scraps of paper with the intent of later transferring the information to the notebook. These scraps may be lost or become scrambled. Don't worry about having a perfectly ordered, neat notebook, as long as it is sufficiently labeled and neat that you can understand the information later. Be certain to include units and an estimate of the uncertainty for each type of data you collect. It is more important that you record everything directly into the notebook. Your notebook is the property of the University and remains with your advisor after you graduate.

Guidelines for Thesis

The thesis is one of the most important parts of a research Master's Degree and as such it should be an example of the student's best ability. In clear understandable language the thesis presents what the research objectives were, why they were established, how they were pursued (the experimental techniques and tools employed), what the results of the investigations are and what the results mean. There is no absolute restriction on the length of the thesis; the appropriate length is that in which all of the above can be accomplished without any filler or padding. In general a research thesis is 50-90 pages.

The thesis should present a consistent clear style of writing. A consistent tense should be used. In general, the past tense should be used to describe what was done or what occurred and the present tense should be used for existing results or facts. As always, care must be exercised to make clear distinctions between facts, observations and suggestions. This is especially true when making reference to the work of others. It is recommended that references be cited by use of the American Chemical Society journal format.

It is recommended that the following format be employed:

Preliminary Pages. These include (in order) Title Page, Approval Page, Abstract, Dedication (optional), Table of Contents, List of Figures, List of Tables and Acknowledgements,.

Introduction. Background information is presented, closely related references are reviewed, and the "what and why" of the research is stated. This section should end with a clear statement of objectives.

Experimental Procedure. A very important section in which clear detailed descriptions of all experimental details are given. All equipment and materials must be included as well as procedures employed. Diagrams and figures should be used for any new or unusual equipment.

Results and Discussion. These may be two separate sections or may be combined. If separate, results should come first and should be a presentation of the results, in the form of figures, tables and graphs. Then the discussion section should follow and should make reference to, explain and discuss the previously presented results. In many cases it is easier to combine results and discussion into one section. In this format the individual results are presented and then discussed prior to going on to the next result or class or results. The results should be presented in a logical order. The order of presentation should be that which makes the results most easily understood. The chronological order in which the experiments were performed should be of little concern.

Conclusions. This very important section should clearly indicate the conclusions that can be made as a result of the research. The section should be logically consistent with the previously stated objectives and previously presented results. An indication of suggested future study should be made.

Appendices. An appendix is an optional section. Some possible uses of an appendix are: presentation of extensive data tables (summary tables should be used in text); presentation of results which are tangential to the thesis.

Notes: Compounds, especially new ones, should be characterized in a manner that will permit publication in an ACS journal. Tables and Figures should be located as close to the point of reference as possible without leaving an abnormal amount of white space in the text.

Prior to starting the actual writing of the thesis prepare a detailed outline and a complete set of figures and tables. This outline should show all of the points to be made in the thesis. The major advisor should review the outline before the thesis proper is started. The first copy of the thesis submitted for review by the major advisor should be a typed copy including figures and tables. The final copy submitted to the committee must be in completely finished form.

(The following information is adapted from the Graduate Student Handbook prepared by the Department of Biological Sciences. Also refer to the Florida Tech Thesis Manual and Style Guide.)

THESIS PREPARATION.

SELECTION OF A JOURNAL FORMAT. This manual is to be used as a reference in all questions regarding the format and style of proposals and theses. In order to make an easy transition from the thesis to a journal-ready manuscript, the style and format of tables and figures, the system of referencing and the format for the literature cited may follow those of the American Chemical Society journals. In this way, figures and tables will not have to be re-drawn, and your references will already be in the format required by the journal.

If there is a problem in interpreting the journal style, the advisor should be consulted. Conferences with the advisor concerning specific problems of style and format of the thesis should be held well in advance of when you type the final manuscript. In this way, difficulties can be worked out before too much time, effort, frustration, and money have been expended in preparing the thesis for submission.

STANDARDIZING PAGE AND TEXT FORMATS. It is important to emphasize that YOU SHOULD NOT USE ANOTHER THESIS AS AN EXAMPLE ON WHICH TO PATTERN YOUR THESIS. NOT ALL THESES HAVE FOLLOWED THE RULES ADEQUATELY, AND THE RULES HAVE CHANGED OVER THE YEARS.

Word Processor Specifications. Select 12 pt, 10 pitch with a plain-face type (Roman or Square Serif), rather than script, italic, or some other ornamental style when printing your thesis. If there is doubt about the size or style of type, clarify the matter with your advisor before preparing the manuscript. The same type style must be used throughout the paper; do not mix type styles.

Do not justify the right margin; not all word processors do a good job without leaving very irregular spacing within the text line.

Spacing and Indentions. The text should be double-spaced (3 lines per inch). Single spacing (six lines per inch) is used only for specific appropriate purposes, such as blocked inset quotations, itemized or tabular materials, figure and table legends, and literature cited (single space within the citation, double space between citations. Additional instructions on spacing are given in other sections.

The first sentence of each paragraph should be indented five spaces (1/2 inch @ 10 cpi).

Any quotation of six typed lines or fewer should use the same spacing as the narrative text. Quotations longer than six typed lines should be inset and single-spaced. Inset quotations do not require the use of quotation marks.

Margins. All typing must fit within the margins (1½ inches at the left, and 1 inch at the top, bottom, and right) except for the page number that is placed about one inch from the top of the page and even with the right-hand margin.

All computer data, illustrations, and tables that lend themselves to reproduction on 8½ x 11-inch pages must conform to the margin requirements in every way. All illustrations on photographic or other acceptable paper must conform to the margins.

Pagination. Every page in the manuscript EXCEPT the Title page and the Approval page must be numbered. These two pages are considered to be pages i and ii, but no pagination numeral is shown on these two pages.

- Preliminary pages--lower case Roman numerals (iii, iv, v, vi, etc.) are used. The first page on which a number appears is the Abstract page, which is numbered iii and is placed right after the Approval page.
- Text and Supplementary pages--Arabic numerals are used. The first page of the narrative text begins with 1 and the numbering runs consecutively to the end of the manuscript.
- Pages are numbered consecutively, as are tables, figures, and equations.

Begin every major division of a thesis on a new page. These major divisions are: Abstract, Dedication (optional), Table of Contents, List of Tables, List of Figures, Acknowledgments, Introduction, Materials and Methods, Results, Discussions, References, and Appendix.

Subheadings or subdivisions within chapters and sections do not start on a new page but are placed on the page wherever they appear in the development of the text. The only exception is when this produces what is termed an "orphan" (i.e., the last line of the page is the heading itself). In this case, start the heading on the following page.

Placement of Page Numbers. The Roman numerals of the preliminary pages are centered at the bottom margin. All other page numbers are placed in the upper right-hand corner of the page (one inch below the top edge of the paper and just inside the right-hand margin). Title pages that introduce a new section are counted but no page number is printed.

PARTS OF THE MANUSCRIPT. A thesis manuscript ordinarily has three main parts: (1) the preliminary pages, (2) the text, and (3) the supplementary pages.

Preliminary Pages. (listed in the order in which they appear in the manuscript) include:

- Title page
- Approval page
- Abstract
- Table of Contents
- List of Figures (if more than one figure is used)
- List of Tables (if more than one table is used)
- Acknowledgments (the Dedication page, if any, is placed directly before or after the Acknowledgments page)

The Text. (listed in the order in which they appear in the manuscript) include:

- Introduction/Review of the Literature
- Body of the thesis with the larger divisions (Materials and Methods, Results, Discussion and/or Conclusion.)

Supplementary Pages. (listed in the order in which they appear in the manuscript) include:

- References (required in all theses, dissertations, or records of study)
- Appendices (if needed).

All preliminary page titles, all chapter designations and titles, and supplementary page titles are centered at the top of the page (within the margins) and are typed in bold with only initial letters capitalized

Examples of some of the major parts of the manuscript are presented in Fig. 1 through 3.

Title Page. The Title page must follow exactly the style, spacing, and form of the example in Fig. 1. Points to note particularly are:

- The title is typed with initial capital letters, single spaced (if the title is more than one line in length) and centered within the margins of the paper.
- There is no page number on the Title page (although it is considered to be page i).
- The full legal name of the author, without initials and without designation of profession, military rank, or marriage is listed as shown.
- The full name of the degree to be awarded is written out with initial capital letters.
- Degrees are awarded only in May and December. The appropriate month and year must be shown on this page.

Approval Page. The Approval page, following exactly the style, spacing, and form of the example shown in Fig. 2, must bear the original signatures of all members of your advisory committee and the Department Head. Care should be taken to assure that they sign in black ink, since other colors do not reproduce well.

The number of members on your advisory committee determines the number of signature spaces on the page. The position (in terms of the committee) of each member of the committee must be indicated under each signature. The committee as listed on this page must include all the names indicated as being committee members on the exam announcement for the defense.

Particular points to note are:

- The title is typed with initial capital letters, single-spaced (if more than one line on length), and centered within the margins of the paper.
- There is no page number on the approval page (though it is considered to be page ii).
- Your full legal name, without initials and without designation of profession, military rank, or marriage is listed as shown.
- If your committee has co-chairpersons, then each is listed by position as "Co-chairperson of Committee".
- If the Department Head serves also as a member or as Chairperson or Co-chairperson of your advisory committee, add a second identifying line under the signature.

Abstract. Your thesis must contain an Abstract placed immediately after the Approval page. Three hundred fifty (350) words should be the maximum length of the Abstract.

The Abstract should contain the following:

- A clear statement of the problem you researched and its significance.
- A brief description of the method of investigation.
- An explanation of data analysis.

A statement of conclusions and how they relate to the original research problem.

A heading following the style of the example in Fig. 3 must appear on the Abstract of your thesis.

Particular points to note are:

- Numbering of pages starts with the Abstract page ('iii').
- The word ABSTRACT is centered at the top of the page within the margins and is typed in capital letters.
- The title of the thesis is typed exactly as on the Title page with initial capital letters (and single spaced if more than one line in length) a triple space below the word ABSTRACT.
- Your full legal name is listed beneath the last line designating the title.
- Your advisory chairperson is listed below the line designating your name. NOTE: When there are co-chairpersons on your advisory committee, both are listed on the Abstract page.

EXAMPLE:

Major Advisors: Dr. Amy Wilson
Dr. Walt Smith

- The text of the Abstract starts a triple space beneath the heading with a five-space (1/2-inch) indentation. The Abstract text is typed double-spaced, and is consistent with the spacing style followed in the text.

Table of Contents. The Table of Contents indicates the major divisions and principal (or first-order) subheadings of the manuscript. It should provide an analytical presentation of the materials in the study and page numbers on which the sections start.

Preliminary page listings in the Table of Contents start with the Abstract (iii) and must include all preliminary pages (inclusion of the Table of Contents page itself is optional).

All divisions of the text (i.e., chapters or sections) and subheadings within each chapter or section must be listed in the Table of Contents. The appropriate spacing, indentation's, and capitalization should show the subordination of the subheadings. All supplementary pages (References and Appendices, if any) must be listed in the Table of Contents.

The numbering, wording, and pagination of titles and headings must be exactly the same in the Table of Contents as they are on the pages of the manuscript.

Title of Thesis
in Initial Capitals Only

by

Your Complete Name

Bachelor of Science, University of Florida

A thesis
submitted to the Department of Chemistry and
Florida Institute of Technology
in partial fulfillment of the requirements
for the degree of

Master of Science
in
Chemistry

Melbourne, Florida
December 2012

Figure 1. Title Page

Title of Thesis
in Initial Capitals Only
a thesis by
Your Complete Name

Approved as to style and content

(Name), Ph.D., Committee Chairperson
Associate Professor, Department of Chemistry

(Name), Ph.D.
Assistant Professor, Department of Chemistry

(Name), Ph.D.
Associate Professor, Department of (Name)

M.W. Babich, Ph.D.
Professor and Head, Department of Chemistry
(A separate block is not provided if the Department Head is a member of the Committee.)

Figure 2. Thesis committee approval page

ABSTRACT

A Study of the Philosophy of Research from the Nineteenth
Century to the Present Time

by

Donald Jay Lee

Major Advisor: Joseph Guy, Ph.D.

The text of the Abstract starts on this line with a 1/2 inch (5 spaces) indentation.

Figure 3. Abstract page

Acknowledgments. It is important and appropriate that you always acknowledge those people and organizations that provided significant contributions to your research and thesis. Also, be sure to acknowledge any financial support that you received for your project. The acknowledgment page should be a separate page with "Acknowledgements" in bold letters centered at the top of the page with the page number shown as a roman numeral centered at the bottom of the page.

Dedication. A dedication (to parents, spouse, etc.) is optional. If included, it should be on a separate page, untitled, single spaced, with the page number shown as a roman numeral centered at the bottom.

Text. Chapters are designated by upper case Roman numerals used consecutively throughout the narrative. The chapter designation (e.g., Chapter I) in bold letters should be centered within the margins at the top of the page. The chapter title also is in bold and is centered a double space below the chapter designation. All chapter titles of more than one line in length should be single-spaced. Each chapter begins on a new page. Chapter titles are separated from the text by either three or four spaces.

Each chapter begins on a new page. Subdivisions within these chapters do not begin on a new page.

Space and economic considerations of journals used as patterns for style and format often demand brevity in articles. The more expanded presentation of a thesis may require a more elaborate system for development and division than a journal employs. If this is necessary, you could use a system of subdivisions within the chapters.

Tables and Figures. Tables and figures must be able to stand alone without benefit of the text. The table titles, figure captions, legends, and symbols must be sufficiently complete so that a reader can understand the data without the need to refer to the text for explanation. However, avoid excessively long captions; interpretation of the data belongs in the text. No part of a table or figure can encroach into a margin, including captions, labels, etc. . If two or more titles or captions would otherwise be identically worded, then you should incorporate some differentiating word or phrase into each. The title usually is above the table while the caption is below the figure.

Tables and figures should be placed as close as possible after the first reference made to them in the text. For a short table or small figure, this may be on the text page itself, in which case it should be separated from the text by triple spacing at the top and bottom. A full-page table or figure should be placed on the page following the first reference to it.

Each table or figure in the main body of the thesis must have a number and a title. The numbering should be consecutive from the beginning through to the end of the thesis. In this regard, you have two basic choices of format: (1) number the tables or figures consecutively (i.e., Table 1, Table 2, Table 3, etc.) throughout the entire document; or (2) use a dual number system in which tables are numbered consecutively within each chapter and in which each number is preceded by the chapter number (i.e., Table 1.1, Table 1.2, Table 1.3, etc. in Chapter 1, and then Table 2.1, Table 2.2, Table 2.3, etc. for Chapter 2). When there are tables and figures in the appendix, they should be numbered Table A-1, Table A-2, etc. in Appendix A and Table B-1, Table B-2, etc. in Appendix B.

If tables (or illustrations) must be placed sideways on the page, then the top of the table (or illustration) should be at the binding side of the paper.

Tables longer than one page should repeat at the top of the following page(s): the table number, the complete title, and the word (continued), and the necessary column headings for ease in reading the table.

List of Tables and List of Figures. The titles of all tables and figures must be transcribed exactly (with their numbers) and in order on the List of Tables and List of Figures, respectively. When a title is exceptionally long, you may transcribe only the first line in the List of Tables or Figures providing that the first line clearly indicates the content of the table or figure and adequately differentiates between it and other tables or figures.

A List of Figures or List of Tables page is not necessary when the paper contains only one table or figure.

Figures. Care and some forethought should be given to preparing the illustrations for your dissertation. If necessary, color may be used, but unless absolutely necessary, its use is discouraged since the colors will not be duplicated by most copiers. Different line styles and/or symbols can be more effective at distinguishing data.

Computer graphics are encouraged if they are of sufficiently high quality and fonts and styles are the same as the rest of the thesis. Most chemical structures look better and can be drawn more quickly using a computer instead of templates.

To make your figures as effective as possible, try to refrain from packing too much information into one graph. Usually only about nine symbols for different curves can be distinguished (X's, and open and closed circles, squares, triangles, and inverted triangles) on one graph.

If a figure is too large to fit within the margins, it may be photographically reduced. Be wary of using a copier to make successive reductions of a draft graph from which to draw a final figure. Each time a graph is copied, it becomes progressively distorted until the axes are at anything but a 90° angle!

Ideally, figure legends should be on the same page as the figures. Legend orientation must agree with the orientation (portrait or landscape) of the figure. The page on which the figure appears is numbered consecutively, with the page number placed in its usual position. On the List of Figures page, the number of the page on which the figure appears is the page number that is to be recorded opposite the figure number and title.

References. The system of referencing the sources of information used in the thesis must follow the method used by the American Chemical Society journals. Bibliographical entries should include only those sources of materials cited directly in the text of the thesis.

If you wish to list general references consulted and used as background study, then these may be listed as subdivision to the References section. Some subheading title such as "Supplemental Sources Consulted" should be added at the conclusion of the sources cited directly, and the background materials may be listed alphabetically by author and should include the pertinent information for proper documentation.

EDITING YOUR MANUSCRIPT. At the risk of overstating the obvious, if you are at all unsure of the spelling of a word, USE A DICTIONARY or a spelling checker on a computer/word processor. Also, be careful to use words correctly. An excellent source book in this regard is Morton S. Freeman's A Treasury for Word Lovers, ISI Press, Philadelphia, 1983.

In editing your manuscript, you should check especially that your spelling is consistent (standard American) in all words that have alternative spellings; in geographical, trade, and people's names; in abbreviations; and in units. The same holds true with regard to spacing.

In proof-reading your thesis, many mistakes may be caught if, after reading it front to back, you read your thesis from back to front. Too often the tendency is to read what should be there rather than what is there.

References. References require careful, albeit tedious, checking. Some aspects to check in particular are:

- Similar references should be cited in the same way with respect to information given, capitalization, and spacing.
- The dates should agree with those given in the text.
- The spelling and order of names (when there is more than one author) should agree with those cited in the text.
- When more than one reference is cited, the order of citations should be done consistently (i.e., by date, alphabetically, or whatever).
- The references in the reference section(s) should be in a consistent alphabetical style.
- The reference must include the complete abbreviated title and beginning and ending pages.

Figures. Figures also should be standardized. Some aspects to check in particular are:

- Similar figures should be set up in the same format, especially with regard to axis labels, capitalization, and symbols.
- Maps must have latitude and longitude indications or, if the area under consideration is small (less than a few square kilometers), they should have a north arrow and a scale.
- All symbols should be defined.
- Any accessory scales should be clear as to what they mean.

Table of Contents, Figure Legends, and Tables. Again, consistency is of key importance. Some aspects to check in particular are:

- All headings, table titles, and figure legends should correspond exactly to those indicated in the Table of Contents, List of Figures, and List of Tables (exceptions: if symbols are defined or if a scale is given in a figure legend, they need not be included in the List of Figures).
- A table or figure number cited in the text should correspond to the correct table or figure.
- All tables should have the same format as far as capitalization, both in the table titles and table bodies.
- All footnotes in tables and references in both tables and figures should be formatted consistently. For example, if one table references T. Doe as "Doe (1984)", then all tables use the same format, as opposed to "Doe, 1984" or "Source: Doe (1984)".

Acronyms and Abbreviations. All acronyms and abbreviations (except for standard units) should be defined the first time that they are used in the Abstract and then again the first time that they are used in the text.

Units. Units should be displayed in a consistent manner (only one system is used, e.g., mg/L and mm/hr or mg L⁻¹ and mm hr⁻¹, not mg/L and mm hr⁻¹) according to the style used by the ACS journals. If metric units are used, then all measurements should be metric, unless special custom dictates otherwise. This applies to all parts of the thesis--text, tables, and figures.

Statistics. Consideration of accuracy and precision in measured or calculated values is most important. Without such information, your results will have limited application. Be sure that you use the appropriate number of significant figures consistently. Likewise, you should always state the number of replicates, means, and standard deviations, if applicable.

The use of advanced statistics has enabled scientists to uncover a wide range of correlation's and to test for significance. Each statistical test cited in your thesis should be fully referenced and conform to standard nomenclature and procedure. There are many textbooks and reference books available providing discussions of error and uncertainty in the measurement of properties.

SUGGESTED STYLE MANUALS. No one should assume that these pages answer the many questions of style arising during the course of preparing a thesis or dissertation. Again, refer to the Florida Tech Thesis Manual and Style Guide, available in the Department and at the campus bookstore. The ACS Style Guide (Washington, 1988) is another useful resource.

DEADLINES At least seven weeks prior to anticipated graduation, you should present your dissertation to your advisor for review. The dissertation must be successfully defended before the final examination week (one week prior to commencement). You must turn at least five copies of your dissertation into the Office of Graduate Programs no later than the Monday before commencement.

All other university deadlines are listed online <http://www.fit.edu/grad-programs/deadlines.php> . In addition, you should coordinate closely with your advisor on deadlines that they may require.

COPYING AND BINDING The current Thesis/Dissertation Binding Instructions describe the details, costs and deadlines. These are sent to graduate students registered for dissertation. Students can obtain additional copies at the Office of Graduate Programs.

In addition to the copies of your dissertation, several other forms must be turned into the Office of Graduate Programs. You must bring along your copy of the completed [Petition to Graduate form](#), showing that the binding fee has been paid, or a separate receipt for the paid binding charges (especially if you wish to have more than five copies bound).

When It's Your Turn To Give A Seminar:
Some Do's and Don'ts

1. Set up a plan for the talk. Ensure that:
 - (i) You Make the aim of the work clear at the beginning.
 - (ii) You present results clearly.
 - (iii) You interpret the results so that the audience can see how the work done leads to the understanding (or new methodology) sought.
2. If you decide to include non-technical material (e.g. photos of equipment, co-workers, etc.), it should go at the end of the talk. Non-technical material is not required.
3. Slides/overheads should be clearly legible. Typed lettering on artwork should be avoided because it is usually illegible on slides prepared from the artwork.
4. "Mixed media" presentations are harder to follow. Generally a seminar is best given entirely from transparencies or entirely from slides.
5. Do not make slides or overheads of typescript and then read that to the audience.
6. Time the talk. It should be 45-50 minutes. If you are significantly over or under that length of time (i.e. > 10 minutes) you will make a negative impression on the audience.
7. Make it clear to the audience when you have finished the talk. Offer to answer questions.
8. **REHEARSE THE TALK BEFOREHAND.** Have the slides/transparencies ready before rehearsals and go over the talk just as you plan to give it. Recruit an audience - other students in your group or in the department and your supervisor.
9. Do not present excessive data. It simply serves to add confusion. Negative results can be meaningful and may be included where appropriate.

**THESIS STUDY PROGRAM
 MASTER OF SCIENCE IN CHEMISTRY
 8031**

NAME: _____

UNDERGRADUATE	DEFICIENCIES (C or better)	DATE	GRADE	CREDIT
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
<u>CORE CHEMISTRY</u>				
CHM 5500	ADVANCED ORGANIC CHEMISTRY	_____	_____	3
CHM 5304	ADVANCED ANALYTICAL CHEMISTRY	_____	_____	3
CHM 5111	ADVANCED PHYSICAL CHEMISTRY	_____	_____	3
CHM 5002	ADVANCED INORGANIC CHEMISTRY	_____	_____	3
<u>ELECTIVE COURSES</u> (one course maximum may be non-chemistry)				
_____	_____	_____	_____	3
_____	_____	_____	_____	3
_____	_____	_____	_____	3
CHM 5999	THESIS	_____	_____	3
CHM 5999	THESIS	_____	_____	3
CHM 5999	THESIS	_____	_____	3
CREDIT TOTAL				30

PLACEMENT EXAMS:

ANALYTICAL _____

INORGANIC _____

ORGANIC _____

PHYSICAL _____

As required by graduate policy (1.5 - 1.5.3), the following advisory committee is established for the student named on this form.

NAME _____ DATE _____
Last First Middle

FIELD OF STUDY _____ STUDENT ID NO. _____

DEGREE PROGRAM _____ MAJOR CODE _____

OPTION (select one) Thesis Nonthesis

TITLE OF THESIS _____

COMMITTEE MEMBER NAME	COMMITTEE MEMBER DEPARTMENT	COMMITTEE MEMBER SIGNATURE
Major Adviser _____ <small>Type / Print Clearly</small>	Academic Unit _____	Signature _____
Outside Member _____ <small>Type / Print Clearly</small>	Academic Unit _____	Signature _____
Other Member _____ <small>Type / Print Clearly</small>	Academic Unit _____	Signature _____
Other Member _____ <small>Type / Print Clearly</small>	Academic Unit _____	Signature _____
Other Member _____ <small>Type / Print Clearly</small>	Academic Unit _____	Signature _____

STUDENT SIGNATURE _____ DATE _____

APPROVALS / CONFIRMATION

APPROVED _____ DATE _____
Academic Unit Head

Document Reviewed _____ DATE _____
Office of Graduate Programs

APPROVED _____ DATE _____
Director, Graduate Programs

This form is used to request study at another institution and record those courses, and to request the transfer of credits taken at another institution. Fill and print before submitting to the appropriate academic unit head for signature.

STUDENT ID NO. _____ MAJOR CODE _____ CAMPUS _____
Use student number assigned by Florida Tech, not Social Security number

NAME _____ LOCAL PHONE NUMBER _____
Last First Middle

ADDRESS _____
Street/Apt No.

_____ City State ZIP

ESTIMATED GRADUATION SEMESTER _____ Include only courses less than seven years old at time of graduation

CREDIT IS REQUESTED FOR THE FOLLOWING GRADUATE COURSES Taken To be taken During _____ Term(s)

COURSE NUMBER	CREDITS	QUARTER/ SEMESTER	GRADE	TITLE/DESCRIPTION	INSTITUTION WHERE TAKEN	APPROVED YES / NO

I understand that I must earn / have earned a grade of B or better in each course for which I am requesting transfer credit and that I must have OFFICIAL transcripts covering the requested courses on file with the Florida Tech Office of Graduate Admissions.

Student Signature _____ Date _____

COURSE NUMBER (From above)	FLORIDA INSTITUTE OF TECHNOLOGY EQUIVALENT		TRANSFER CREDIT GRANTED
	COURSE NUMBER	TITLE	
TOTAL TRANSFER CREDIT GRANTED			

APPROVED:

Academic Unit Head Date

Director, Graduate Programs Date

Records Unit Process Date

NAME _____ STUDENT ID NUMBER _____
Last First Middle

MAILING ADDRESS _____
Apt. No. Street City State ZIP Code

DEGREE PROGRAM _____ ACADEMIC UNIT _____

TERM GRADUATION EXPECTED _____ CATALOG YEAR REQUIREMENTS USED FOR PROGRAM PLAN _____

MAJOR CODE _____ *Any change to this plan must be submitted and approved by the academic adviser before approval to graduate will be granted.*

For transfer credit(s), list Florida Tech equivalent with School Attended in parentheses; indicate "T" in Grade column. Approval of this program plan does not imply approval of transfer credits.

DEFICIENCIES	FLORIDA TECH COURSE NO.	FLORIDA TECH COURSE TITLE	SEMESTER CREDITS	GRADE	
	1.				
	2.				
	3.				
	4.				
	5.				
	6.				

REQUIRED	1.			
	2.			
	3.			
	4.			
	5.			
	6.			
	7.			
	8.			
	9.			
	10.			
	11.			
	12.			

ELECTIVES	1.			
	2.			
	3.			
	4.			
	5.			
	6.			

Student _____ Date _____ Academic Unit Head _____ Date _____

Academic Adviser _____ Date _____

At least one box in each column below MUST be selected

<input type="checkbox"/> SEGS	<input type="checkbox"/> Ph.D.	<input type="checkbox"/> Written	<input type="checkbox"/> Dissertation	<input type="checkbox"/> Passed	<input type="checkbox"/> First
<input type="checkbox"/> Main	<input type="checkbox"/> Ed.D.	<input type="checkbox"/> Oral*	<input type="checkbox"/> Language‡	<input type="checkbox"/> Failed	<input type="checkbox"/> Second
	<input type="checkbox"/> Psy.D.	<input type="checkbox"/> Both*	<input type="checkbox"/> Thesis		<input type="checkbox"/> Third
	<input type="checkbox"/> Ed.S.		<input type="checkbox"/> Research or Design Project		
	<input type="checkbox"/> M.S.		<input type="checkbox"/> Comprehensive or Final (Max: MS 3, Ph.D. 2)		
			<input type="checkbox"/> Preliminary		

*Oral Exam was announced the week of _____

_____ Date of Examination

EXAMINATION REPORT

Current (not anticipated) OVERALL GPA from Banner _____ ‡ Language Examined N/A

Current (not anticipated) PROGRAM GPA (Calculated if different. Banner does not show.) _____
 (Graduate Policy 1.6.2 requires that MS students have BOTH Overall and Program GPA's of ≥ 3.0 AT THE TIME the examination is administered.)

Student Name _____ Student Number _____ Major Code _____

Degree Program _____ Academic Unit _____

Title of Dissertation / Thesis / Research or Design Project _____

Dissertation / Thesis / Research or Design Project Course Number _____ Number of hours of P to be credited per Program Plan _____

COMMITTEE
ADMINISTERING
EXAMINATION
AND / OR
APPROVING
DISSERTATION /
THESIS /
RESEARCH OR
DESIGN PROJECT

Major Advisor's Typed Name	Academic Unit	Signature
Outside Member's Typed Name	Academic Unit	Signature
Other Member's Typed Name	Academic Unit	Signature
Other Member's Typed Name	Academic Unit	Signature
Other Member's Typed Name	Academic Unit	Signature
Other Member's Typed Name	Academic Unit	Signature

Comments/Weak Areas/Additional Coursework: _____

APPROVED Academic Unit Head _____ [Typed Name] Date: _____

DOCUMENT ACCEPTED Office of Graduate Programs _____ Date: _____

COMPLIES WITH POLICY Director of Graduate Programs _____ Date: _____
Antoniet Mortara

Dissertation/Thesis/Research or Design Project ONLY Waivers Attached No Waivers on File NA

TO: OFFICE OF GRADUATE PROGRAMS, Crawford 302. 674-8137

Submit NO LATER THAN 14 days before defense/exam

FROM: _____
Department/Program *Approval Signature of Department Head/Program Chair (REQUIRED)*

Student's Name _____ Student's Number _____ Major Code _____ GPA _____

Student's Phone _____ Student's E-mail _____

Do NOT Announce Proposal Conferences or WRITTEN Preliminary, M.S. Final Program or Ph.D. Comprehensive Examinations

<input type="checkbox"/> Ph.D. or DRP Defense	<input type="checkbox"/> M.S. Thesis/Design Project/Portfolio	<input type="checkbox"/> M.S. Oral Final Program Exam	<input type="checkbox"/> Ph.D. Oral Comp	<input type="checkbox"/> Ed.S. Final Program
---	---	---	--	--

Title of Document *(Please use initial capitalization so acronyms are easy to spot. Underline words to be italicized.)*

Please schedule during normal business hours: Date _____ Time _____ Place _____

Below, **TYPE/PRINT** committee members' names, using correct title (Dr., Mr., Ms., etc.). Signatures are **not** necessary.

Committee Members: _____ Major Adviser _____ Dept./Prog. _____

Outside Member _____ Dept./Prog. _____

Other Committee Member _____ Dept./Prog. _____

Dept./Prog. _____

Dept./Prog. _____

Dept./Prog. _____

FOR OFFICE USE ONLY

Prep by _____

Wk of _____

SHADEGR _____ EM

STUDENTS MUST PASS DEFENSE/EXAM BY THE NEXT-TO-LAST MONDAY IN ORDER TO GRADUATE CURRENT TERM

PETITION TO GRADUATE

FIRST PETITION RE-PETITION (originally petitioned for _____ term)

Attach FLOW CHART (undergraduate major and minor),
 PROGRAM PLAN (graduate) or PROGRAM OF STUDY (doctoral).

CAMPUS _____ STUDENT ID NO. _____ DATE _____

Name below **MUST appear as listed in Florida Tech student database**. NOTE: Candidate's name will be printed on the diploma as it appears in the Florida Tech student database.

NAME _____
First Middle Last

LOCAL MAILING ADDRESS _____
Street/Apt. No. City State ZIP

LOCAL TELEPHONE _____ HOME TELEPHONE _____ WORK TELEPHONE _____

I AM PETITIONING FOR GRADUATION AT THE END OF _____ *Semester/Year*. *University Catalog year* _____ applies for major.

I EXPECT TO COMPLETE THE REQUIREMENTS FOR THE (Check one)

A.S. B.A. B.S. E.M.B.A. M.A. M.A.T. M.Ed. M.P.A. M.S. M.S.A. M.S.M. P.M.B.A. Ed.S. Ed.D. Ph.D. Psy.D.

DEGREE* IN _____
*May be Graduate Certificate Major/Title Major Code Academic Major Adviser/Off-Campus Site Representative Signature Date

_____ Minor/Title Minor Code Academic Minor Adviser Signature Date

Student Signature** Date

****By signing this petition form, I agree to my name, degree awarded and honors information appearing in all public graduation lists.**

In the event my diploma must be mailed to an address different from that shown above, please mail my diploma to:

Street/Apt. No. City State ZIP Country

- Check one I will participate in commencement exercises:
- at the main campus. **Summer candidates may participate in FALL COMMENCEMENT ONLY.**
 - at the off-campus site listed at the top of this form.
- I will NOT participate in the commencement exercises.

It is the student's responsibility to order regalia directly from the university bookstore located on the Melbourne campus. For additional information, contact the bookstore at (321) 674-8042 or visit <http://fit.bkstore.com>.

GRADUATE STUDENT INFORMATION (Required)

Previous Degree(s):

Undergraduate _____
Name of Degree and Major Name of School, State/Country where earned

Graduate _____
Name of Degree and Major Name of School, State/Country where earned

PAYMENTS

Late Fee _____ Paid-Date _____ Receipt No. _____ Amount _____