7COLLEGE OF ENGINEERING

DEPARTMENT OF CHEMICAL ENGINEERING

P.O. Box 116005

Gainesville, Florida 32611-6005

Telephone: (352) 392-0881

FAX: (352) 392-9513

E-mail: chemical@che.ufl.edu

http: \\www.che.ufl.edu

GRADUATE PROGRAM REQUIREMENTS

for the degree of

Masters of Science, Thesis Option

Fall 2017

A. INTRODUCTION

These guidelines describe the Program requirements for the degree of Master of Science with Thesis in the Department of Chemical Engineering. It is the student's responsibility to know and take appropriate steps to meet all Program requirements in this document. General requirements for the various degree program as well as descriptions of courses can be found in the University of Florida Graduate Catalog. A student is normally regulated by the rules set forth in the catalog published in the academic year of the student's first term.

B. PROGRAM REQUIREMENTS FOR MASTER OF SCIENCE (M.S.)

Course Requirements.

The Graduate School minimum requirement for the M.S. degree is 30 semester credits including up to a maximum of 6 credits in thesis research work (ECH 6971). ***The students in MS-Thesis program in Chemical Engineering can choose between Fundamental and Applied Track.*** The course requirements for these two tracks are different. ***The Fundamental Track*** is intended for students who may be interested in pursuing a PhD after graduation, while the ***Applied Track*** is suggested for students who consider Masters as the terminal degree and are interested in pursuing industrial jobs after graduation.

Fundamental Track Course Requirements (24 credits out of the required total of 30 credits)

Students on the Fundamental Track are required to take the following five courses: Molecular Basis of Chemical Engineering (ECH 6272), Continuum Basis of Chemical Engineering (ECH 6270), Mathematical Basis of Chemical Engineering (ECH 6847), Chemical Engineering Kinetics (ECH 6506) and Advanced Chemical and Biological Lab (ECH 6937). In addition, three other elective courses, which could be from any department, must be taken.

Applied Track Course Requirements (24 credits out of the total required total of 30 credits)

Students on the Applied Track are required to take the following three courses: Continuum Basis of Chemical Engineering (ECH 6270), Mathematical Basis of Chemical Engineering (ECH 6847), and Advanced Chemical and Biological Lab (ECH 6905). Additionally a course in the general area of kinetics such as reactor design, pharmacokinetics or equivalent is required. Kinetics course can also meet this requirement but Molecular Basis is a prerequisite for that course. The instructor can however waive the requirement of Molecular Basis as a pre-requisite. Four electives, including at least from the chemical engineering department, must be taken.

The remaining requirements described below are identical for both Tracks.

MS Thesis students can take a maximum of 6 credits of Master's Research (ECH 6971). Additional research credits can be taken as Individual Work (ECH 6905). All MS Thesis students must register for at least 3 credits of ECH 6971 in their final term (2 credits if the final term is summer). MS Thesis students can also register for Graduate Seminar (ECH 6926). The aggregate of credits for research and seminar should not exceed 9 credits.

All courses taken in the Chemical Engineering must be numbered 5000 or above. If a minor is chosen, at least six credits of courses must be taken in it. For work outside Chemical Engineering, 6 credits of courses numbered 3000 or above may be taken if part of an approved plan of study. If you are receiving financial support as a Graduate Assistant, you are required to register for a minimum of 9 credits in Fall and Spring, and at least 6 credits in Summer.

An example of the course of study for the M.S. degree for a student on Fundamental Track is given below:

Suggested schedule for a student on Fundamental Track			
	First Year		**Second Year**
Credits	**Fall** (9 credits)	Credits	**Fall** (9 credits)
(3)	ECH 6270 Continuum Basis	(3)	ChE or non ChE Elective
(3)	ECH 6272 Molecular Basis	(3)	ChE or non ChE Elective
(3)	ECH 6847 Mathematical Basis	(3)	ChE or Non ChE Elective or ECH 6971 Thesis Research
	Spring (9 credits)		**Spring** (3 credits)
(3)	ECH 6937 Adv Chem Bio Lab	(3)	ECH 6971 Thesis Research
(3)	ECH 6506 Chemical Engineering Kinetics		
(3)	ChE or Non ChE Elective or ECH 6971 Thesis Research		
	Summer (6 credits)		
(0)	Summer Registration is not required but interested students can take research credits.		

An example of the course of study for the M.S. degree for a student on Applied Track is given below:

Sample schedule for a student on Applied Track			
	First Year		**Second Year**
Credits	**Fall** (9 credits)	Credits	**Fall** (9 credits)
(3)	ECH 6270 Continuum Basis	(3)	ChE or Non ChE Elective
(3)	ECH 6937 Adv Chem Bio Lab	(3)	ChE or Non ChE Elective
(3)	ECH 6847 Mathematical Basis	(3)	ChE or Non ChE Elective or ECH 6971 Thesis Research
	Spring (9 credits)		**Spring** (3 credits)
(3)	ECH 6526 Reactor Design and Optimization or BME 6644 Pharmacokinetic or Equivalent	(3)	ECH 6971 Thesis Research
(3)	ChE or Non ChE Elective		
(3)	ChE or Non ChE Elective or ECH 6971 Thesis Research		
	Summer (0 credits)		

It is the student's responsibility to ensure that the course schedule meets all requirements of the program and also the requirements for maintaining their visa status (for International Students only). International students are required to register for at least 9 credits in both Fall and Spring, except in the last semester of their program in which they need to only for the number of credits required to meet the graduation requirements. Also if you have finished all your course requirements and are left with only Research credits, you can register for only 3 Research credits. All students need to register for at least 3 credits in the semester in which they graduate. For Thesis based programs, you need to register for at least 3 Research credits in the last semester. International students should consult the advisors in UFIC if any clarification is required.

Please seek guidance from your research advisor and the Graduate Coordinator to choose the most suitable schedule for you.

Research and Thesis - Near the end of the first semester after enrolling in the program, the student will choose a research adviser. By the end of the first semester, the student must also, with the advice and consent of the research adviser, nominate a Supervisory Committee. The Supervisory Committee must have at least two members, one of whom must be Graduate Faculty member of the Chemical Engineering Department. If a minor is chosen, at least one member of the supervisory committee must be from the minor department. The supervisory committee is very important and should be chosen carefully. The supervisory committee advises the student, monitors the student's progress, supervises the preparation of the thesis, and conducts the final examination.

In Chemical Engineering, a candidate for the M.S. degree must prepare and present a thesis acceptable to the Supervisory Committee and the Graduate School. The candidate should consult the Graduate School Editorial Office for instructions about the form of the thesis. The University Calendar specifies final dates for submitting three copies of the abstract to the Dean of the Graduate School and for submitting the original copy of the thesis bound with an abstract. The college copy should be submitted to the college or department by the specified date. After the thesis is accepted, it will be available electronically from the University Libraries.

When the student's course work is substantially completed and the thesis is in final form, the supervisory committee is required to examine the student orally or in writing on (1) the thesis, (2) the major subjects, (3) the minor or minors, and (4) matters of a general nature pertaining to the field of study. A written announcement of the examination must be sent to the Dean of the Graduate School. This exam may not be scheduled earlier than the term preceding the semester in which the degree is to be conferred. **The thesis should be submitted to the committee members at least 15 days before the oral defense.**

The supervisory committee (2 faculty members) and any other appropriate faculty members and the candidate must be present at the final examination. The oral exam may be conducted using video and/or telecommunications. However, the student and chair or co-chair must be in the same physical location. All other members may participate from remote sites via technological means. At the time of the examination, all committee members may sign the thesis signature page and the Final Examination Report, although these can be retained by the supervisory committee chair until acceptable completion of corrections.

Converting from Thesis to Non-Thesis: If you choose to covert from the Thesis to the Non-Thesis option, a maximum of 3 credits earned with a grade of S in 6971 (Research for Master's Thesis) can be counted toward the degree requirements only if converted to credit as A, A-, B+, or B in Individual Work. The supervisory committee must indicate that the work was productive in and by itself and that the work warrants credit as a special problem or special topic course.

Other Remarks - Graduate level work, totaling no more than 9 credits with a grade of "B" or higher, may be transferred from an institution approved by the Graduate School or 15 semester hours from post-baccalaureate work at the University of Florida. These credits will be applied toward the degree, but the grades will not be computed in the student's grade point average. Transfer of credit requires approval of the student's Supervisory Committee, the Chemical Engineering Department, and the Dean of the Graduate School. Petitions for transfer of credit for the M.S. degree must be made during the first semester of study and, if approved, transfer of credits must be included in the program of coursework.

Students have historically needed 16 to 20 months (4 to 5 *academic-year* semesters) to complete the degree requirements. Financial support may be provided to the student by the thesis adviser through the completion of his/her degree program (as defined by submission of the final thesis to the graduate school). Of course, continued support depends on satisfactory progress by the student and availability of funds. Satisfactory progress is determined by a student's thesis research adviser. Students are strongly encouraged to register for required courses at the earliest possible opportunity.

Students who intend to apply for the PhD must (without exception) complete the MS requirements before they receive funding for the PhD and begin their doctoral program. Such students are strongly advised to adhere to the suggested program of study given above and to communicate their interest in applying for the PhD to the Director of the Graduate Program and the Director of the Admissions Committee.

To be considered for entry starting in Fall semester, students are encouraged to apply before February 15, but after completion of the three Basis courses (Molecular, Continuum, Mathematical). Applications will be considered against those of the other new PhD applicants and decisions will be made based on student credentials and the projected number of available projects. In addition to the typical credentials for admission (undergraduate GPA, GRE, etc.), the graduate recruitment committee will consider performance in the MS program and recommendations from UF faculty.

C. ACADEMIC ACHIEVEMENT AWARD

The Academic Achievement Award is given to qualified students at the time of the admission. If you were not considered to be qualified for the award at the time of the admission, you are not eligible for this award after joining the program irrespective of your academic performance.

To maintain the AA Award you must keep a GPA of 3.0 or higher. If a student that has the AA award fails to maintain the 3.0 GPA after the first semester, the award may discontinue. The student can request the Graduate Coordinator to submit a petition on behalf of the student for continuation of the award if extenuating circumstances led to the poor performance.

In each case, a petition has to be submitted by the Graduate Advisor to the College of Engineering so please contact him/her well in advance of registration if you require a petition.

D. GENERAL Policies and Requirements

Safety: The Department of Chemical Engineering considers chemical laboratory safety to be both an educational objective and a laboratory imperative. All laboratory personnel (including graduate and undergraduate students, post docs, volunteers, hosted minors, and technicians) are required to take the on-line course EHS861: Chemical Hygiene Plan for Laboratory Staff. Subsequent training, based on the laboratory-specific Chemical Hygiene Program created for your research activities, will be provided by your research director. Annual training is required for all employees who generate or manage hazardous waste. Additional one-time or annual training may be required for researchers working in special-risk areas.

Florida State Residency Requirement - For tuition purposes, all eligible students (i.e. those who receive tuition waivers and who are U.S. citizens, permanent resident aliens, or legal aliens granted indefinite stay by the Immigration and Naturalization Service) must take appropriate actions to become in-state residents by the end of their first year. Failure to do so may result in loss of the tuition waiver.

Course Registration Procedures - Graduate students must get the approval of their adviser for registration of courses, prior to registration.

Concurrent Degrees Graduate students who wish to enroll in a concurrent degree program must obtain the appropriate forms from the graduate school. The graduate coordinator will sign these forms *only after consulting the chair and after the student's graduate adviser has given written approval for the student to enroll in the concurrent degree program*. A copy of all communications regarding the application for the program will be maintained in the student's graduate folder with the Graduate Program Assistant (Shirley Kelly).

Minor is a block of course work completed in any academic unit outside the major, if approved for master's or doctoral programs listed in this catalog. *Minor work must be in an academic unit other than the major. If a student earns more than one course from an academic unit contributing to the major of another, the student is not eligible to earn a minor from the contributing academic unit*. If a minor is chosen, the supervisory committee must include a representative from the minor field. If a minor is chosen, at least 6 credits of work are required in the minor field. Two 6-credit minors may be taken with the major academic unit's permission. A 3.00 (truncated) GPA is required for minor credit. The minor appears on the student's transcript along with the program name and the degree awarded. The minor department may have other specific requirements in addition to those above so please contact the department if you are considering getting a minor.

Academic Honesty and Ethical Conduct in Research - All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. Students are expected to produce their own work in homework, projects, and exams. Unauthorized collaboration in take-home exams, projects, and individual assignments is a serious violation of the university honor code and could lead to a grade decrease, course failure, and loss of degree status.

Students are expected to maintain high ethical standards in the conduct and reporting of scientific and scholarly research. Students are responsible for ethical research conduct to the University, to the academic community, to those sponsoring the research, and. to the community at large. Research Misconduct, including fabrication or falsification of data, or plagiarism in proposing, performing, or reviewing research or reporting of results, is a most serious offense that can greatly damage the welfare and reputation of the students, faculty, and the University. For more information regarding Research Misconduct, see http://www.admin.ufl.edu/DDD/attach06-07/R10101-0704.pdf

From the UF Student Handbook: "Plagiarism is not tolerated at the University of Florida. Plagiarism in a thesis or dissertation is punishable by expulsion. If the plagiarism is detected after the degree has been awarded, the degree may be rescinded. For a thorough discussion and the law, see www.rbs2.com/plag.htm. A briefer discussion and some tips for avoiding it are provided at www.indiana.edu/~wts/pamphlets/plagiarism.shtml.