

Graduate Student Handbook

M.S. & Ph.D. Degrees in Chemical Engineering

Chemical Engineering Program

**Department of Chemical & Materials Engineering
University of Cincinnati**

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PREFACE

This Handbook provides a statement of admission practices and the requirements for a graduate degree in Chemical Engineering as approved by the Chemical Engineering faculty and in accordance with College and University guidelines. This handbook does not supersede any provision of the University Graduate Handbook of the Division of Research and Advanced Studies (http://www.grad.uc.edu/file_pdf/handbook.pdf), published by the Office of the University Dean, but is intended to augment and interpret statements of policy as required by the specific needs of the graduate program in Chemical Engineering. All graduate students in Chemical Engineering are expected to thoroughly review the contents of this Handbook and to follow all regulations and requirements fully. No student may receive a graduate degree in Chemical Engineering without satisfying the general rules of the Division of Research and Advanced Studies and the specific requirements of the Chemical Engineering Program as described in this Handbook.

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I. APPLICATION AND ADMISSION TO THE GRADUATE PROGRAM

I.1. Application

Students seeking admission to the graduate program in Chemical Engineering must submit an *electronic UC application* and relevant supporting documents including a non-refundable application fee. The electronic UC application is available at website

<https://apply.uc.edu/OnlineApply/LogIn.iface?applicant=Grad>

It is the applicant's responsibility to provide complete and timely documentation including official transcripts, GRE and TOEFL (as applicable) scores, and two letters of recommendation, preferably from chemical engineering faculty familiar with the applicant's credentials. Applications received by the College of Engineering Graduate Office are reviewed for both an admission decision and for awards of financial aid including tuition scholarships, teaching and research assistantships, and fellowships. Students seeking governmental loans, work-study, and other forms of financial aid, should make an application to the Student Financial Aid Office.

I.2. Admission

Full Graduate Standing:

To be eligible for admission to the graduate program in chemical engineering, a student must possess a minimum of a bachelor's degree in any branch of engineering or physical science. For admission to full graduate standing, a student must have a bachelor's or master's degree in chemical engineering from a recognized university or college with a traditional program in chemical engineering. The student should have at least a "B" grade average or its equivalent in relevant undergraduate course work, or otherwise give evidence of promise satisfactory to the Chemical Engineering program. Such evidence would include official Graduate Record Examination (GRE) General Test scores (verbal, quantitative and Analytical Writing) which are required for all applicants. (Information concerning this examination may be obtained from Graduate Record Examinations (<http://www.ets.org/gre/>). International students must also submit scores on the Test of English as a Foreign Language (TOEFL, <http://www.ets.org/toefl>). The minimum score acceptable for admission to the Chemical Engineering program is 580 (paper based test) or 237 (computer based test) or 92 (Internet based).

Provisional Admission:

Applicants with strong academic records, or otherwise showing promise for successful graduate study, but lacking adequate preparation in chemical engineering, including those holding undergraduate degrees in areas other than chemical engineering, may be offered Provisional Admission and required to either (A) complete a structured program of course work in chemical engineering, without graduate credit, to make up deficiencies, or (B) successfully pass written tests in all or some of the following "core" courses:

Transport I (20-CHE-3022)

Chemical Engineering Thermodynamics (20-CHE-3062)

Transport II (20-CHE-3023)

Chemical Reactor Engineering (20-CHE-4062)

Options A or B must be complete by the end of autumn quarter of first year of graduate studies. Specific make-up courses or tests for these students are decided by the admission committee and indicated in the admission offer letters to the students. Students holding undergraduate degrees in areas other than chemical

engineering must have demonstrated proficiency in chemical engineering by completing the prescribed program with good grades (normally, no grades below C) and having maintained a minimum "B" average overall. At the completion of the prescribed program, the student must submit a written petition for review of his or her status to the Graduate Studies Director.

Unclassified Graduate Status:

Students with a recognized baccalaureate degree may enroll as an Unclassified or Special Graduate Student for graduate courses with credit without admission to the graduate program. An application for regular full-time or part-time admission may be made at a later date; however, the number of graduate credits that will be accepted for a degree program in chemical engineering is normally limited to 9.

Foreign Student Admission:

Foreign students are normally not granted admission on any basis other than full graduate standing. The Test of English as a Foreign Language (TOEFL) is required of all applicants whose native language is other than English. This requirement may be waived for a foreign student who has completed an academic program of two or more years at an accredited American college or university. A minimum TOEFL score of 580 (paper based test) or 237 (computer based test) or 92 (Internet based) is required for graduate admission in chemical engineering.

Before admission is completed, all foreign students must fulfill U.S. Immigration Service requirements and register with the International Student Services Office (ISSO). All foreign students must be certified for their oral English proficiency by passing an Oral English Proficiency test given by the University Dean's Office or by receiving a minimum score of 230 (old-scale) or 50 (new-scale) on the Test of Spoken English (TSE) administered by Educational Testing Service (ETS). Students who are not certified by the end of their second quarter after the initial enrollment may have some financial constraints applied until their oral English proficiency is certified.

All foreign students are required to carry the specified health and accident insurance. An annual fee (reflecting the number of accompanying dependents) will be assessed at the first registration period of each year to meet the cost of this insurance for the subsequent twelve months.

I.3. Financial Aid and Categories of Financial Awards

All awards for financial aid are made in accordance with the Graduate Awards Manual of the Graduate Division of the University. Normally, these are awarded for the initial academic year contingent upon continuing satisfactory performance towards a degree, as judged by the faculty and Director of Graduate Studies in Chemical Engineering. Additional support for the subsequent academic years depends upon satisfactory academic and research accomplishments and upon the availability of funds. The financial aid is given in the following categories.

University Graduate Scholarships (UGS) provide full or partial tuition remission and may include remission of the general fee required for each quarter of enrollment.

Doctoral Graduate Scholarships provide remission of both tuition and the general fee but may be awarded only to students who have completed their Ph.D. qualification, have completed all course work, have accumulated no more than 174 graduate credit hours, and have achieved a minimum "B" average grade point average in their graduate course work. Students awarded a Doctoral Graduate Scholarship must register for 15 credits of Ph.D. Dissertation only.

University Graduate Assistantships (UGA) provide a monthly stipend in addition to remission of tuition and the general fee.

Research Assistantships (RA) provide a monthly stipend for a student to assist in research project sponsored by a corporation or governmental organization. In some cases, restrictions as to eligibility (e.g., U.S. citizenship) may apply. Normally, a RA award would be accompanied by an award of a Graduate or Doctoral Scholarship.

Fellowships sponsored by industry, governmental agencies, or endowment funds may be available. The University sponsors a limited number of Distinguished Doctoral Fellowships open to competition for Ph.D. candidates in their final year of study. Some fellowships may be subject to eligibility restrictions. An award of a University Graduate Scholarship or Doctoral Scholarship would normally accompany a fellowship.

Determinations of the tax status of stipends and scholarships is made by the Internal Revenue Service of the United States and the corresponding authorities for the state of Ohio and the city of Cincinnati. The University maintains a position that all income from whatever source is taxable and subject to withholding. In addition, students, not the University, are responsible for the withholding information which they submit on their W-4 forms at the time of appointment.

I.4. Conditions of the Financial Aid

Awards of financial aid are contingent upon the following specific regulations adopted by the faculty:

- a. All graduate students have the responsibility to assist in one or more courses per year during their academic residency (see **III.3**)
- b. Graduate students supported from University General Funds are required to be full-time students. Normally, this requires registration for a minimum of 15 graduate credits for the Autumn and Spring Semesters and 12 graduate credits for the Summer session (exclusive of audit credits) for each semester they are supported.
- c. Any full-time graduate student whose semester quality point average falls below 3.0 (B) for any two out of three consecutive semesters, shall either be denied further financial support, or be dismissed as a degree candidate in chemical engineering, at the discretion of the faculty. A graduate student whose financial support has been withdrawn may petition reinstatement of Departmental support.
- d. Financial aid awarded to doctoral students may not exceed four calendar years in duration for those entering the program with an M.S. degree.
- e. The maximum number of months for which a stipend (i.e., a GA, RA, or fellowship) may be provided in any one calendar year is 12.
- f. Since the purpose of stipend support is to enable a graduate student to concentrate on his/her studies and research, no full-time student receiving a stipend award during any semester is allowed to be employed either part-time or full-time in or outside the University or receive stipend support from another program or department within the University. International students may have additional Immigration restrictions governing such activities as defined by the International Student Services Office (ISSO).

- g. It is University policy that any student with more than 174 graduate credits at the beginning of the appropriate Autumn Semester cannot be supported from University General Funds (i.e., University Graduate Scholarship or Graduate Assistantship).

Any graduate student may, at any time, request an exception of these provisions by submitting a written petition to the Graduate Studies Director indicating reasons why he or she believes that circumstances are exceptional.

I.5. Pre-Registration Procedure and Requirements

As soon as the applicant accepts an offer of admission, the student should send the completed Supplementary Information Form directly to the Graduate Office. Not until this form has been received and processed is the student officially admitted to graduate study and eligible to register for courses.

A physical examination is required of each applicant. A tuberculin Tine Test or chest X-ray is required within three months of registration for international students.

Original copies of degree certificates/diplomas must be verified by the Graduate Office within three months of the student's first registration.

II. REGISTRATION AND GRADING PRACTICES

II.1. Registration Procedure

To receive graduate credit, a student must register each quarter by properly submitting the appropriate registration form and making any required payment for tuition and fees as applicable. The registration is on-line and every student can print a sheet (registration form) with the courses he/she is planning to take. The registration forms must be approved and signed by the Graduate Studies Director of Chemical Engineering, student's thesis or dissertation advisor, or Head of the Chemical Engineering Department. During a student's first semester of full-time registration, the Graduate Studies Director would normally sign the registration form. For subsequent semesters, the thesis advisor would approve all registrations subject to all Program requirements. A student may not attend classes until registration is completed.

Registration at the University of Cincinnati takes place in two stages - Priority Registration and Final Registration. Priority Registration begins well in advance of the semester for which registration is sought. The semester publication "Learning Opportunities" and the Registration Form may be obtained from the Department Office or Registrar of the College of Engineering. Students who do not participate in Priority Registration must participate in Final Registration which begins approximately ten days after Priority schedule/bills have been mailed. This form must be approved and signed by the appropriate Department official as in Priority Registration and submitted to the Registration Office. If a student is to register on-line, the student should discuss with the thesis advisor, Graduate Studies Director or Department Head the courses he/she plans to take. An on-line registration printout listing all courses the student registered in the quarter should be given to the student's thesis advisor (or Graduate Studies Director/Department Head) for signature.

Three weeks before the semester starts, all graduate students are required to give to the Graduate Studies Secretary a copy of the registration form or the on-line registration printout listing all courses the student has registered in the semester, with the signature of advisor, Graduate Studies Director or Department Head. Failing to do so may result in removal of UGS support for the student's tuition.

II.2. Registration Change Procedure (Add/Drop)

Once a student has completed registration, the official record can be changed only with a registration change form secured from the College Graduate Office. Courses may be dropped, changed from credit to audit or vice versa, and from undergraduate to graduate credit or vice versa. Section changes and credit hour changes in variable credit hour courses are also accomplished using the add/drop form. Such changes must be approved by the academic advisor or Director of Graduate Studies and processed through the Office of Registration and Scheduling by the twenty-second calendar day of the semester. After the twenty-second calendar day of the quarter, only withdrawals or drops of courses will be accepted. In the case that a class has been closed, the student must obtain an add/drop form and a completed and signed Petition to Enter a Closed Class. This petition must be signed by the instructor and the Department Head, and the assistant or associate dean of the college offering the course.

II.3. Audit Regulations

The audit option is intended for cases in which course work is desired or advised but in which a grade for credit purposes is deemed unnecessary by the student in consultation with the advisor or Department. Admission and conditions for participation in audit courses are at the discretion of the instructor, who is not obligated to accept a student for audit. Audit hours do not count toward the 174 credit limit nor are included in the determination of full-time status. Such hours may be charged to a UGS only if at least 12 graduate credits are taken that same semester and if the total is less than 174 credit hours. A maximum audit registration of one course per semester is recommended. The auditor is expected to withdraw officially if he/she wishes to cease attending. A grade of T is assigned to audited courses except that the instructor may override this by a grade of W in the case that a withdrawal is officially processed or a grade of F if the student has not met the instructor's expectations.

II.4. Pass/Fail and Withdrawals

With the approval of both the advisor and the instructor, a graduate student may take any course on a Pass/Fail basis, but no instructor is obligated to accept a student on this basis. A grade of either P (passing) or F (failing) is assigned to courses taken on a pass/fail basis.

Every withdrawal slip must be signed by the student's academic advisor and by the Associate Dean for Graduate Study and Research, College of Engineering. For withdrawals on or before the third Saturday of the quarter, the grade of "W" is assigned by the Registrar's Office and the course is deleted from the student's official record. For withdrawals after the third Saturday and on or before the eighth Saturday, the grade of "W" is required to be assigned by the instructor. For withdrawals thereafter, the instructor is required to submit a grade of "W" for students whose work has been of passing quality and "F" for students whose work has been of failing quality up to the time of withdrawal. No withdrawals are permitted after the eighth Saturday of the quarter, except for reasons beyond the control of the student, such as sickness or accident.

If a withdrawal lowers the student's total registered credits below that required for full-time study (currently 12 credits exclusive of audit credits), the student jeopardizes any UGS support and becomes

liable for the tuition of the semester. Moreover, international students must maintain full-time status. Students requesting a waiver of this rule must supply detailed and adequate justification, such as a physician's written, dated, and signed statement if a medical reason is claimed.

A student may be withdrawn by the instructor at any time in the semester when excessive absences have been incurred. A student withdrawn because of excessive absences is not eligible for academic credit, refund of fees, or reinstatement as an auditor in that course.

II.5. Graduate Credit in Dual-Level Courses

A graduate student who is registered in 500, 600, or 700 level courses carrying both undergraduate and graduate credit may be required to complete a certain amount of academic work in addition to that required of undergraduates in the same course, such as the instructor in charge of the course deems advisable. It is important for graduate students taking these dual-level courses to indicate "G" in the registration form.

II.6. Grading Practices

At the end of each quarter, the Office of Student Records mails to each student an official report of academic achievement. Reports are rendered in the form of grades which should be interpreted as follows:

- A** Outstanding work (quality point: 4.00)
- A-** Excellent work (quality point: 3.67)
- B+** Work of good quality, closed to outstanding (quality point: 3.33)
- B** Work of good quality, commendable but not outstanding (quality point: 3.00)
- B-** Work of good quality, but not outstanding (quality point: 2.67)
- C+** Work of acceptable but not distinguished quality (quality point: 2.33)
- C** Work of acceptable (quality point: 2.00)
- P** Pass
- F** Fail. Graduation with F on the transcript will be permitted only if:
 1. The student meets all Departmental standards for the degree program
 2. A grade of F in a required course is superseded by a grade of C or better in the same course retaken by the student
- U** Unsatisfactory work for non-credit graduate course.
- I** Incomplete
 1. The I grade is awarded only when the student fails to complete one or more course requirements, such as the final examination or a paper or project.
 2. Conversion of I grades:
 - a. A grade of I will automatically be converted to an F one calendar year after the initial grade was given. Normal appeal channels are open to students documenting hardships cases.
 - b. Graduation will not be permitted if a student has a grade of I on the transcript. Course work must be completed or the grade will be changed to an F.
- W** Official withdrawal: indicates that the student or instructor processed a drop or official withdrawal. See Section II.
- T** The audit option is intended for the student who desires, or is advised, to do work in a course in which a grade is deemed unnecessary by the student in consultation with the advisor or Department.
- IP** In progress. An IP grade may be assigned only to a few previously approved courses, such as thesis, dissertation, seminar and research in which no basis of evaluation existed or was required by the time grades were due for that quarter. The last course taken before graduation should carry a normal grade and no grade conversion is required for all the previous IP grades.

III. GENERAL REQUIREMENTS

III.1. Full/Part-Time Students (Full/Part-Time Course Load)

All students enrolled in a full-time program of graduate study must be registered for 10 or more graduate credits each quarter. Foreign students, under terms of their visas, must be enrolled as full-time students for Autumn and Spring semesters.

Students with outside work, or those who for other reasons devote less than full time to graduate study, will be allowed to register for the number of graduate credits judged by the Graduate Studies Director or thesis advisor to represent the appropriate fraction of a full-time load. Part-time graduate students are not eligible for UGS or GA awards.

Graduate Assistants and UGS Recipients must carry 12 credits or more each semester, exclusive of audit credits. Furthermore, students receiving support from University General Funds (e.g., UGS and GA) are required to register for a minimum of 15 credits during the Autumn and Spring semesters. Note: For any given semester, the minimum number will be determined by the Graduate Director and the faculty.

In order to maintain status as a graduate student and thus be eligible for a graduate degree, a student must register for at least one (1) credit each academic year during the Autumn semester after having met minimum degree course requirements as specified in Sections V and VI for M.S. and Ph.D. students, respectively.

III.2. Residency, Credit Transfer and Total Credit Hour Requirements

All graduate students, regardless whether he/she has received credit transfer, must satisfy all degree requirements including minimum residency as determined by the Graduate School of the University. These are one year's full-time graduate study or its equivalent for an M.S. degree with a minimum of forty-five (30) graduate credits being completed while in residence at the University of Cincinnati. For the Ph.D. degree, the residency requirement is three years of full-time graduate study or its equivalent, of which the last year must be in residence in the University of Cincinnati or under the University's direction. Eligibility for graduation requires a minimum of 90 graduate credits, 30 of which, exclusive of research credits, must be completed at the University of Cincinnati.

A limited number of graduate credits obtained at another approved college or university may be transferred to satisfy degree requirements, as determined by the Graduate Student Director and faculty of the Chemical Engineering Program. Due to the residency requirements, the maximum credits that are allowed to transfer for Ph.D. students are 30. No credits are allowed to transfer for the M.S. students.

III.3. Teaching Assistant Assignments

One of the important educational goals of the Department is for every student in the graduate program to achieve competence in both teaching and research. Therefore, each full-time graduate student must satisfy both a teaching and a research requirement as part of the graduate training. For this reason, all full time graduate students have the responsibility to assist in various courses during their academic residency.

Students who are non-native speakers of English must be certified for their oral English proficiency during the first semester registered for classes. Those who continue to fail to be certified may have some

financial constraints applied until their oral proficiency is certified. Cases of prolonged failure will be subject to review by the faculty and immediate termination of UGS, UGA or other form(s) of stipend. It must be noted that those who have not had their oral English proficiency certified cannot legally be assigned duties of a Teaching Assistant. Instead, they will be assigned to “Grading Only” duties for one or more classes. A “Grading Only” designation means that the individual will be given grading tasks by the class professor and/or Teaching Assistant .

There are two methods to have the oral English proficiency certified.

- (1) Take the Oral English Proficiency Test (OEPT) test given by the University Dean's office and receive a passing score.
- (2) Take the TSE test administered by Educational Testing Service (ETS) four times a year. Application forms may be obtained from: TSE, P.O. Box 6157, Princeton, NJ 08541-6157. Have the scores sent to The Center for ESL, 505 Teachers College, Mail Location 2, University of Cincinnati, Cincinnati, Ohio 45221. A score of 230 (old-scale) or 50 (new-scale) is required for certification.

For those who take the English as a Second Language (ESL) courses according to the recommendations of the testing board and perform up to the instructors' satisfaction, the instructors' written statement would satisfy the departmental requirement until the next available OEP test or ETS test. If the student fails to receive a passing score, the financial constraint will be reinstated.

III.4. Graduate Seminars

All graduate students are required to register and attend the department graduate seminars (20-CHE-8070) for each semester of full-time residence (see **III.1** for its definition). One credit is assigned for each registration.

IV. ADVISOR AND COMMITTEE ASSIGNMENT

IV.1. Advisor Assignments for New Students

Academic (thesis/dissertation) advisors will be assigned to all full time graduate students. A series of mini-seminars are given in the Autumn Semester by the faculty on their current research interests. During this period of the seminars, it is expected that those new students will select thesis topics of interest from (at least) three different professors and arrange meetings to discuss them on an individual basis. Only full-time University of Cincinnati chemical engineering faculty can serve as academic advisors. The purpose of such meetings is twofold. First, it serves to identify areas of mutual interest, and secondly, it provides both the professor and student a chance to assess and gauge their respective abilities to collaborate with one another and to perform synergistically to solve a problem which will constitute the thesis. This is clearly a matter of utmost importance and therefore more than one meeting may be desirable on any one topic.

In the Autumn semester, all unassigned graduate students will be asked to submit a list of three topics (each with a different professor) in order of preference. A form for this purpose is available in the Department office or from the Director of Graduate Studies. The faculty will consider these lists and provide a final assignment of topics by November 1 of the Autumn Semester. The Department will strive to match up students and advisors based upon first choices. In some cases, when there is competition for a

particular topic, this may not always be feasible. As soon as the student is notified to which topic (and professor) he or she has been assigned, the student must meet with that professor to begin planning the thesis proposal. This professor will also become the student's academic (thesis/dissertation) advisor from that time on.

IV.2. Advisor Change

Graduate students are strongly discouraged to change advisors. If an advisor change is absolute needed, such a change requires the written consent of the student and his or her current advisor. Requests for advisor changes will be reviewed by the entire Chemical Engineering Faculty. In the case of first year graduate students requesting advisor reassignment, following approval for a change of advisor by the faculty, a new advisor will be appointed by the Department Head. Any subsequent request for reassignment will not be considered unless the student has completed their initial, specified degree objective. All reassignments must have written consent of the new advisor before the matter is finalized.

Faculty members having available research assistantships for funded projects may submit their requests to the Director of Graduate Studies who will then advertise the openings to all students and faculty members in the Department. However, students already committed to other projects will not be allowed to change to the new project until the terms of their existing contracts are fulfilled. Students committed to a GA may be allowed to change to a new funded project at the end of a semester.

IV.3. Thesis/Dissertation Committee

The M.S. thesis committee for an M.S. student should be composed of at least three persons appointed by the Graduate Studies Director. At least half of the committee (e.g. two of the three) must be members of the faculty holding full-time appointment in chemical engineering. The Chairman of the Committee will be the student's research advisor. The M.S. thesis committee could be formed as soon as the student has been assigned an academic advisor.

Ph.D. students must submit a dissertation proposal to the Ph.D. Qualifying Committee as described in section **VI.4 Candidacy Examination**. The Qualifying Committee will be appointed by the Graduate Studies Director after consultation with the dissertation advisor. The Qualifying Committee will normally become the Ph.D. dissertation committee upon approval of the research proposal (see section **VI.4**). A formal appointment of the dissertation committee shall be made by the University Dean. This committee shall consist of at least four persons, of whom at least three shall be members of the faculty holding full-time appointment in chemical engineering, and at least one of whom should be outside the chemical engineering program. The Chairman of the Committee will be the student's dissertation advisor.

The thesis/dissertation committee is responsible for approval of the M.S. or Ph.D. research proposal and thesis/dissertation. If the Committee does not approve the proposal or thesis/dissertation, it shall be returned to the student for revision and resubmission to the Committee. At least 3/4 of the voting members of a thesis/dissertation committee must approve a proposal of thesis/dissertation. The Graduate Faculty of the University has interpreted the "at least 3/4" rule to require 3 out of a committee of 3, 3 out of 4, 4 out of 5, 5 out of 6, 6 out of 7, and 6 out of 8. If a committee does not give approval to a proposal or thesis/dissertation, the research advisor has the privilege of referring the question of approval to the entire ChE Faculty for a decision. A decision to override the committee must be a 3/4 vote of the entire ChE Faculty.

V. MASTER'S DEGREE PROGRAM

V.1. Course and Credit Hour Requirements

All candidates for an M.S. degree in Chemical Engineering must fulfill a minimum of thirty (30) graduate credits which must include six (6) credits of M.S. Thesis and twenty-four (24) credits of graduate courses in each of the following categories:

Required Chemical Engineering Courses (12 credits)

Advanced Thermodynamics, 20-CHE-7041, 3 credits

Transport Phenomenon I, 20-CHE-6043, 3 credits

Transport Phenomenon II, 20-CHE-6044, 3 credits

Chemical Reactor Design, 20-CHE-7077, 3 credits

(registered for the first Autumn semester of full-time residence.)

Chemical Engineering and Other Technical Electives and Graduate Seminar (6 credits)

Any dual-level (normally 6000 level) or graduate level Chemical Engineering (20-CHE-XXXX) courses and other technical electives; graduate seminars (1 credit each semester, required for each semester of full-time residence); but excluding Thesis/Dissertation (20-CHE-9071), Graduate Research (20-CHE-9000), Special Projects (20-CHE-9072), and Readings (20-CHE-9073).

M.S. Research, Special Projects in Chemical Engineering and Readings (9 credits)

V.2. M.S. Thesis and Special Project

All full-time students enrolled in the M.S. program in Chemical Engineering are required to complete and defend a satisfactory master's thesis. The minimum number of credits of thesis required is nine (6). Students should therefore enroll in Thesis/Dissertation (20-CHE-9071) for a minimum of nine (6) credits. If additional credits are required to finish the thesis, the student should enroll in Graduate Research (20-CHE-9000). The M.S. students should not enroll in Thesis/Dissertation (20-CHE-9071) and Graduate Research (20-CHE-9000) until approval of their M.S. research proposals by their thesis committees (see V.3).

Only part-time students may indicate their intention for a non-thesis option for an M.S. degree at the time of admission. Full-time students are not allowed to switch to this option. To elect this option, the student must have completed a minimum of 10 credit hours of required course work in the M.S. program and have a cumulative grade point average of 3.0 (B) or better. Qualified applicants should apply in writing to the Graduate Studies Director indicating their intent to elect the non-thesis option program. To be awarded the M.S. degree, the non-thesis candidate must have satisfied the above minimum course requirements and also must satisfy the following two additional requirements:

- a. a minimum of 34 credits of graduate course work with a cumulative quality point average of 3.0 (B) or better
- b. completion of six (6) credits of special project work with a written report summarizing the work. The special project will be supervised and evaluated by a faculty member.

V.3. M.S. Research Proposal and Thesis Defense

For students admitted in September, a formal, written M.S. thesis proposal prepared in coordination with his/her advisor must be submitted before the end of the first academic year and be approved by the student's thesis committee (see **IV.3.** for committee assignment) before the end of the Spring semester. (For students admitted at other times, a corresponding deadline will be determined by the Graduate Studies Director.) If the student fails to meet the established deadline, it will be necessary for him/her to submit to the ChE Faculty a petition for permission to continue in the Program.

The proposal shall be a written statement of the proposed thesis in some detail. It should outline the work the student proposes to do. It need not be extensive but should contain: (a) a statement of the problem; (b) a short background of the topic of interest; (c) the plan of approach in the research; (d) a specific statement of the objectives to be accomplished during the research on the thesis; and (e) an estimate of the timeline for the proposed work. In addition, a bibliography of pertinent literature should accompany the thesis proposal as an appendix. The proposal should be written in such a manner as to convince those reading it, of the desirability for doing the work and of the adequacy of the student's preparation for the research.

Copies of the proposal are then presented to the members of the student's thesis committee for their review. The Committee will meet with the student and evaluate the written proposal. Questions may be asked concerning the proposal and other material in the major field. When this evaluation is considered satisfactory by the Committee, the proposal is approved and the student is permitted to continue with the thesis project. If the Committee does not approve the statement, it shall be returned to the student for revision and resubmission to the Committee.

Once all work for the thesis has been satisfactorily completed and with approval of the thesis advisor, the student will prepare a draft of his or her thesis. Copies of the rough draft of the thesis should then be submitted to all members of the thesis committee in a timely manner (see **VII** for graduation timeline). The Committee will evaluate the thesis and, if deemed necessary, suggest appropriate changes, which may include changes in grammar and writing. It is the student's responsibility to insure that the written thesis is technically sound and also written in a clear, concise manner and free of all spelling and grammatical errors. The thesis is accepted when at least 3/4 voting members of the committee recommend its acceptance (see **IV.3** for the interpretation of the "3/4" rule).

A candidate for the master's degree will be examined orally by his/her thesis committee and by other members of the faculty at the time of the final thesis defense. This examination will be limited to questions covering the thesis and "immediate related fields" as defined by the thesis committee at the time of the original proposal. This examination is open to other students and faculty. Public notice of it must be posted at least one week in advance of the defense date. In order to meet this deadline, the student must inform the graduate office seven working days prior to the examination when it is to be scheduled. The office staff will then prepare the formal notice for posting.

On the basis of this oral examination and such further investigations or examinations as it finds necessary, the committee will recommend to the Graduate Studies Director (assuming that all other requirements for the degree have been satisfied) whether awarding of the degree should be recommended to the Graduate Division. In passing upon the committee's endorsement, the Graduate Studies Director may also arrange such additional examinations to the chemical engineering faculty as the case requires.

V.4. Minimum Academic Performance, Residency and Time Limitation

A minimum grade of C or P must be earned on all course work in order to obtain graduate credit. It is a University requirement that in order to obtain a master's degree, a student must maintain a B (3.0) average. In addition, at least 2/3 of the minimum graduate credits necessary for the degree must be at a level of B or higher. (This applies to formal course work which carries a letter grade other than P.) Furthermore, the Chemical Engineering program requires a minimum of a B average in all chemical engineering courses.

Any student with Regular Admission either full-time or part-time, who fails to maintain a semester QPA of at least 3.0 in all graduate and ChE courses taken in each of two semesters (whether consecutive or not), may be dismissed from the Program at any time by a simple majority vote of the full-time Chemical Engineering Faculty. In addition, any student with Provisional Admission, who in the judgment of the Head of the Department or the Graduate Studies Director, fails to maintain an adequate academic performance may also be dismissed from the program at any time by a majority vote of the Chemical Engineering Faculty.

Students are not required to submit formal applications for master's candidacy. A student becomes a candidate for the master's degree upon matriculation in the master's program. The minimum requirement for the master's degree is the equivalent of one academic year of full-time graduate study, consisting of at least 30 credits, while enrolled in the Chemical Engineering program. All requirements must be completed no later than seven (7) years from the date of first registration in the program. Under extenuating circumstances, a student may petition the University Dean, through the Department and College, for extension of the time limit. Petitions shall be submitted on the approved form.

VI. DOCTORAL DEGREE PROGRAM

VI.1. Doctoral Students

Graduate students (with or without an M.S.) admitted to our graduate program who intend to obtain a Doctor of Philosophy degree in Chemical Engineering are considered as doctoral students. These doctoral students must satisfy the basic University requirements for the Doctoral Degree as given in the "Handbook of the Division of Graduate Studies and Research." To receive a Ph.D. degree in Chemical Engineering the doctoral students need to be admitted to Ph.D. Candidacy (see VI.4), and fulfill the course, dissertation and residency requirements described below.

VI.2. Course and Credit Hour Requirements

Credit hour requirements for the doctoral degree include the equivalent of three years of full-time graduate study, that is, a minimum of 90 graduate credits (60 credits exclusive of research/dissertation). Doctoral students are required to satisfy the course requirement described below for two difference cases. Most of the courses described below can be taken any time while the doctoral student is enrolled in the graduate program. However, only doctoral students who have officially been admitted into Candidacy are permitted to register for Ph.D. Dissertation (20-CHE-9071) or Graduate Research (20-CHE-9000). Any Dissertation or Graduate Research credits taken before the official candidacy will not be considered as a part of the credit hour requirements.

Case I (for Students without a M.S. Degree or with a M.S. Degree from UC)

Students without an M.S. degree are required to take a minimum of ninety (90) credits including twenty-four (24) credits listed in Section V (excluding M.S. Thesis) and a minimum of sixty-six (66) credits listed below. Students holding an M.S. degree in Chemical Engineering from the University of Cincinnati are required to take a minimum of sixty-six (66) additional credits in the following categories as approved by his/her dissertation advisor:

- a. Twelve (12) credits of required graduate level Chemical Engineering courses (20-CHE-XXXX) but excluding Ph.D. Dissertation (20-CHE-9071), Ph.D. Research (20-CHE-9000), Special Projects (20-CHE-9072), Readings in ChE (20-CHE-9073), and Graduate Seminar (20-CHE-8070).
- b. Three (3) additional credits selected from graduate level math/statistics or equivalent courses (15-MATH-XXXX, 20-XXX-XXXX).
- c. Twenty-three (16) credits including: Graduate Seminar (20-CHE-8070) required for each quarter of full-time residence, and courses selected from graduate level Chemical Engineering courses and Technical Electives (20-CHE-XXXX) (see Section IV, Course of Study) but excluding Ph.D. Dissertation (20-CHE-9071) and Ph.D. Research (20-CHE-9000).
- d. Thirty (30) credits of Ph.D. Dissertation (20-CHE-9071).
- e. The balance of required 90 credits may be taken from Technical Electives, Special Projects and Readings in consultation with student's advisor.

Case II (for Students with a M.S. Degree in ChE from Outside UC)

A student holding an M.S. degree from a Chemical Engineering program which holds an ABET accreditation for its undergraduate degree, other than the University of Cincinnati, will be allowed to transfer a maximum of the equivalence of thirty (30) semester credit hours excluding M.S. thesis

research credits upon approval of the Graduate Studies Director (see **VI.3**). With a full thirty credits transferred, the minimum credit requirements as approved by her/his dissertation advisor would be the same as in Case I except for the courses replaced by the transferred credits. Note: Transfer of graduate credits from any other Institution or Degree Program will be at the discretion of the Graduate Studies Director, following review of submitted materials, such as, detailed course descriptions, grades, syllabi, and faculty input.

VI.3. Transfer of Credits

A limited number of graduate credits obtained at another approved college or university may be transferred to satisfy degree requirements, as determined by the Graduate Studies Director and the faculty in Chemical Engineering. It is the responsibility of the student to initiate a petition, using the standard credit transfer form available from the graduate office, to the Graduate Studies Director for a transfer of credits. The student should also provide all documentation required for a decision on acceptable credits. Such documentation would include complete and official academic transcripts and a detailed outline or course description of all courses for which transfer credit is desired.

Normally, credit hours allowed for a transfer course will not exceed the semester credit hours of any U.C. course(s) which covers equivalent material. In addition, courses eligible for transfer credit should have been taken within the five years prior to the application. Credits may be transferred at any time during the academic program; however, an entering student is advised to discuss his or her particular situation with the Graduate Studies Director prior to initial registration in the program. Due to the residency requirements (see **VI.7**), the maximum credits that are allowed to transfer for Ph.D. students are 30.

VI.4. Candidacy Examination

The Ph.D. Candidacy (or qualifying) examination consists of the defense of a dissertation proposal. To be eligible to take the Ph.D. Candidacy Examination, a student must have achieved at least a 3.0 average in graduate level chemical engineering courses (exclusive of Graduate Seminar, Special Projects and Readings) and a 3.0 average in all other doctoral course work and petition the Graduate Studies Director for admission to this examination. Students admitted to the Ph.D. program are expected to begin the qualification procedure during their first year of residence and to select a dissertation advisor during the first half of the Autumn semester of residency (see **IV.3**). The Ph.D. Candidacy examination is outlined below:

The students admitted to full graduate standing will be required to submit their Ph.D. dissertation proposal to the Qualifying Committee by the end of autumn semester of their second year of graduate study. The composition of the Qualifying Committee consisting of at least four persons, of whom at least three shall be members of the University of Cincinnati faculty holding full-time appointment in chemical engineering, and at least one of whom should be outside the chemical engineering program, will be recommended by the dissertation advisor to the Graduate Studies Director after consultation with student. The Qualifying Committee will normally become the student's Ph.D. dissertation committee upon approval of the Ph.D. dissertation proposal (see section **IV.3**).

The Ph.D. dissertation proposal should strictly adhere to format described in the National Science Foundation Grant Proposal Guide (e.g., http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg) and include the following: (a) **1-page Project Summary**; (b) **Project Description** containing general background and a concise review of the literature work; problem statement and the significance of addressing the problem; proposed ideas, goals, methodology and approach to solving the problem; evidence (preferably student's own work, combined with work published in the literature) to support the feasibility of

the proposed work and the student's ability to finish the proposed research; proposed research activities; timeline (NOTE: **total 15 page limit for section (b)**); (c) **References**; and (d) **Budget and Budget Justification** using the templates located at <http://www.srs.uc.edu/index.cfm?fuseaction=home.srsBudgetSheets>. The proposal should emphasize proposed (future) work, not the work that has been accomplished. The student will be required to present and defend the proposal before the committee. The student is expected to present original work in the proposal including an organized literature search and answer general questions from core chemical engineering curriculum related to proposed research. The committee will make a recommendation whether the student is qualified to proceed to Ph.D. research. The Chemical Engineering Faculty will then decide if the student has passed or failed the entire PhD Candidacy examination.

Retaking Candidacy Examinations: A student who fails the Ph.D. Candidacy examination may petition to retake this examination.

VI.5. Candidacy

Formal admission to Candidacy for the Ph.D. in Chemical Engineering is by a majority vote of the Chemical Engineering faculty. The decision is based on the student's total academic performance (including GRE scores), and especially with respect to the results of the Candidacy Examination outlined above. Students who fail to complete candidacy examination within the period outlined will no longer be considered as "qualified" for the Ph.D. program. To be reinstated in the Ph.D. program, such a student must either successfully repeat the qualifying procedure, or successfully petition the Department (through the Graduate Studies Director) stating the exceptional circumstances of his/her case. Candidacy for the Doctorate automatically terminates if the student fails to register during the academic year.

The date of the admission to the Candidacy will be the date of the letter from Graduate Studies Director informing the student of the approval of the Candidacy by the faculty. Immediately after being admitted to candidacy, the student must submit the candidacy form to the graduate office. The student will receive a letter from the University Dean's Office to confirm his/her Candidacy and the dissertation committee composition. These two letters are important in order to graduate with a Ph.D. degree, and the students are required to keep these letters until graduation.

Students who have officially been admitted into Candidacy are permitted to register for Ph.D. Dissertation (20-CHE-9071) and Ph.D. Research (20-CHE-9000). During the course of the candidate's research, it is the responsibility of the student to keep the committee (not just his or her research advisor) informed of his/her progress. Each committee member is expected to maintain an active interest in the student's work. To maintain this necessary communication, it is required that dissertation committees meet formally with their student at least once each academic year to review progress and to re-evaluate "direction" and "objectives. An Annual Progress Review Form (see Appendices) must be signed by the dissertation committee which will become part of the student's file.

Departmental Seminar: All candidates for the doctorate are required to give a seminar in the departmental graduate seminar series, preferably in the final year of the residence. The audience at these seminars is composed primarily of chemical and materials engineering graduate students and faculty. These seminars usually consist of a ~45 minute research presentation and a 15 minute question-and-answer period. After a student consults with his/her research advisor about presenting in a departmental graduate seminar series, the advisor should inform both Graduate Studies Director and seminar coordinator(s) about the student's intention to give a seminar approximately 3 months before intended seminar date in order to accommodate it in a seminar schedule. Students will be given priority over invited speakers. A documented

evidence of an oral presentation by a student at a national or international technical meeting may be used instead to satisfy this requirement. This evidence should be provided to Graduate Studies Director.

VI.6. Final Defense of Dissertation

All candidates for the doctorate will be examined on their research work and other topics by their committee and other faculty members during the final oral examination required for that degree. The dissertation examination should be scheduled at least seven (7) months after the candidate successfully defended his/her research proposal. It is a University requirement that this examination will take the format of an open seminar which all members of the University Community may attend. Public notice of this Ph.D. Dissertation Seminar must be posted at least two weeks in advance. In order to meet this deadline, the student must inform the graduate office two working weeks prior to the examination when it is to be scheduled. The office staff will then prepare the formal notice for posting. At this examination, the candidate is expected to defend successfully the work embodied in his/her submitted dissertation. The candidate may be questioned to determine his/her command of specialized topics related to the dissertation and competency in his/her major and related fields.

VI.7. Residency and Other Requirements

Residency: All doctoral students must remain enrolled for at least twelve (12) graduate credits during each of two semesters within a span of four consecutive semester, so long as they register for each semester involved. (Note: This would permit a residence pattern of in-out-in-out-in during four consecutive semesters excluding summer sessions.)

Minimum Academic Performance: In order to be awarded the degree of Doctor of Philosophy, the candidate must complete his/her graduate course work with an overall average of 3.0 or better (exclusive of thesis and dissertation-related credits) and an overall average of 3.0 or better in ChE courses and Technical Electives.

Time Limitations: The doctoral degree will be granted for no less than the equivalent of three years of full-time graduate study. The period of time from the first enrollment into the doctoral program (normally the initial enrollment to our graduate program) to candidacy will not exceed five (5) years. A period of seven (7) months must elapse between the successful defense of the Ph.D. research proposal (after admission to doctoral candidacy) and receipt of the degree. Candidacy for the Doctorate automatically terminates after four (4) consecutive calendar years from the time the student has been admitted to the Ph.D. candidacy.

Maximum Credit Hours for UGS Support: It is University policy that any student with more than 174 graduate credits at the beginning of the appropriate Autumn Quarter cannot be supported from University General Funds (i.e., University Graduate Scholarship for tuition and Graduate Assistantship for stipend).

Foreign Language Requirement: The Chemical Engineering program has no language requirement for the Ph.D. degree.

VII. GRADUATION

VII.1. Application for Graduation

After having met minimum degree course requirements as specified in Sections V and VI respectively for M.S. and Ph.D. students, the student should be prepared for graduation while trying to fulfill the thesis/dissertation requirements. In order to maintain status as a graduate student and thus be eligible for a graduate degree, a student must register for at least one (1) credit each academic year during the Autumn Semester (see III.1) before graduation. Failing to follow this minimum credit hour requirement will result in a termination of the status as a graduate student in the ChE program.

The University of Cincinnati has four graduation dates each year, usually around the end of each semester (important dates and deadlines can be found at <http://www.grad.uc.edu/index.cfm?fuseaction=home.graduationInfo>). The students who intend to graduate on a specific date need to apply for graduation before the deadline which usually is about three (3) months before the graduation date. () The students should inform the college graduate secretary of their intention to graduate after they have submitted their online graduation application.

VII.2. Graduation Procedure and Requirements

The prospective graduate who wishes to graduate should follow the procedure listed below in order to graduate on the intended date (dates in parenthesis are various deadlines for graduation):

- a. The student should complete the online graduation application which is available at website, <http://www.grad.uc.edu/index.cfm?fuseaction=home.graduationInfo> about three months before the graduation date.
- b. The student should send the form (go to the College Web address for the form: <http://www.eng.uc.edu/graduatestudies/currentstudents/forms/>) to apply for final defense of dissertation to the Graduate Studies Office (701 ERC) at least 6 weeks before the graduation date.
- c. The student should defend the dissertation/thesis at least 3 weeks before the graduation date.
- d. All the I, F grades are changed and removed by the instructors at least 3 weeks before the graduation date.
- e. The graduation checklist indicating that the student has completed all the course credit hours, seminar presentation, dissertation/thesis and residence requirement is submitted to the Office of the University Dean's Office by the Graduate Studies Director at least 2 weeks before the graduation date.
- f. Complete the Departmental Exit Check List and provide the evidence that a bound copy of his/her dissertation/thesis will be sent to the department (such as receipt from the outside binder) at least 2 days before the graduation date.

VII.3. Thesis/Dissertation

The website at the Office of the University Dean contains details about the format required for the dissertation/thesis, including preparation of electronic dissertation/thesis.

All approved dissertations/theses will be published in the form of a master microfilm negative that will remain on deposit with University Microfilms (Ann Arbor, Michigan). Microfilm copies will be available from University Microfilms at a nominal charge. In addition, a 350-word abstract of the

dissertation will be published in Dissertation Abstracts and listed in its cumulative and annual indexes. One microfilm copy of the complete dissertation will also be deposited with the Library of Congress and listed in its subject and author catalogs. After a dissertation has been approved, a candidate will be required to:

- a. Submit to the Office of the University Dean two typewritten copies of the approved dissertation in final form along with an abstract of the dissertation. The abstract must be approved by the Thesis/Dissertation Committee and shall consist of not more than 350 words. A fee is charged for the binding of the dissertation. Each candidate is required to deposit two copies of the dissertation, one copy of the abstract and the Dissertation Approval Form with the University Dean. The dissertation and the abstract shall be submitted to the Graduate Division not later than ten days before the graduation date (see VIII).
- b. The electronic dissertation must be submitted to the Office of the University Dean. The electronic copies will be kept in the College Library.
- c. Pay the Cashier of the University a Publication Fee and bring the receipt to the Office of the Graduate Division.
- d. Complete and sign a publication agreement with University Microfilms. Blank agreements are available in the offices of the Graduate Division.

The Department requires one bound copy of the thesis. This, and any additional copies (typically, for the student, and advisor), should be submitted directly by the student to an outside binder. The Department office will provide the necessary information concerning this procedure. The student will not be certified for graduation until the Department has received its copy of the bound thesis.

VIII. SPECIAL RULES AND PROVISIONS

VIII.1. Non-Discrimination Policy

The University of Cincinnati reaffirms its policy that discrimination on the basis of race, color, religion, national origin, sex, sex orientation, handicap or age will not be practiced in any of its activities. Complaints involving the abridgement of this policy should be addressed to the Affirmative Action Coordinator.

VIII.2. Right to Review Records

Students, once enrolled, have the right to review their educational records, except where certain restrictions by law may apply, such as records maintained by a physician. Requests should be made of the appropriate University office, such as the Office of Student Records, the College Dean's office, and the Department office. Copies of any portion of the record will be provided at cost, except transcripts of student's permanent academic records for which the University's transcript policy will apply.

VIII.3. Grievance Procedures

A graduate student may initiate a grievance procedure for any of the following allegations:

- a. improper dismissal or suspension from a graduate program for disciplinary, administrative, or procedural reasons, as opposed to academic reasons.
- b. improper dismissal or suspension from a graduate program for academic reasons, or the improper withholding or termination of financial support of any kind.
- c. any other improper treatment by a faculty member or university agency such as allegations of discriminatory treatment.

Grievances alleging only improper evaluation of academic work or a prejudicial recommendation for employment or further graduate study are explicitly excluded from consideration under these circumstances.

Procedures for the filing of a grievance are detailed in the "Graduate Students Grievance Procedures" pamphlet on file in the Department office or available from the Graduate Studies Director.

VIII.4. Academic Honesty

Academic dishonesty in any form is a serious offense and cannot be tolerated in an academic community. Dishonesty in any form, including cheating, plagiarism, deception of effort, or unauthorized assistance, may result in a failing grade in a course and/or suspension or dismissal from the Program.

Summary of Graduate Coursework Requirement

	Non-thesis M.S.	M.S. Ph.D.	Ph.D.	
			Additional	Total
<i>ChE Required:</i>				
Adv. Thermodynamics	3	3		3
Chem. Reactor Design	3	3		3
Transport Phenomena I	3	3		3
Transport Phenomena II	3	3		3
ChE, Technical Electives and Seminar	14	6	9	18
Advanced Math/Statistics			3	3
Research, Special Projects, Readings and Electives	8*	6	24	27
TOTAL COURSEWORK	34	24	36	60
M.S. Thesis		6**		
Ph.D. Dissertation			30	30
TOTAL	34	30	66	90

* includes 6 credits of special project and no M.S. research credits

** for M.S. student only

List of Forms Used for Graduate Study
in the Chemical Engineering Program
University of Cincinnati

Request for Advisor

Date: ****
To: New ChE Graduate Students
From: **** Director of Graduate Studies

Please fill in the following table with your first three choices of research advisors, and return it to me no later than ***.

Your Name _____, Your Degree Objective _____

Signature _____

Choice	Professor Name	Project title
First		
Second		
Third		

Request for Credit Transfer

Chemical Engineering Program
Department of Chemical and Materials Engineering
University of Cincinnati

Date:

To: Graduate Studies Director

From: Enrollment Year:

I would like to request the transfer of the following credits:

From (university):

Equivalent UC Courses

Course Title	Year Taken	Credit Hour	Grade Received	Course Title	Course Number	Credit Hour	Yes/ No *

* This column to be filled by the Graduate Studies Director

Graduate Studies Director Recommendation _____, Signature _____

Date _____

ChE MS Student Credit Hour Checklist/Program of Study

Name: _____

BS Degree: School _____ Year _____

Date Admitted: _____

Thesis Topic Approval Date: _____ Thesis Final Defense Date: _____

Required Credit Hours: Course Work (A+B) _____ Thesis _____

Advisor Signature _____ Date: _____

GSD Signature _____ Date: _____

**A. ChE Required Courses and Technical Electives – Minimum 18 hours
(20-CHE-XXXX excluding -8000, -8071, -9000, -9071, -9072, -9073)**

Course No.	Title	Tm/Yr	Grade	Hrs	Course No.	Title	Tm/Yr	Grade	Hrs
20-CHE-7041	Adv. Thermodynamics				20-CHE-				
20-CHE-6043	Transport I				20-CHE-				
20-CHE-7043	Transport II				20-CHE-				
20-CHE-7077	Chem. Reactor Design				20-CHE-				
20-CHE-					20-CHE-				
20-CHE-					20-CHE-				
20-CHE-					20-CHE-				
20-CHE-					Total Hours				

**B. Seminar and Technical Electives – Minimum 6 hours
(Excluding 20-CHE-XXXX) 20-CHE-9072, -9073 are allowed**

Course No.	Title	Tm/Yr	Grade	Hrs	Course No.	Title	Tm/Yr	Grade	Hrs
					Total Hours including Seminar				

**C. Seminar (20-CHE-8070)
(Continuous registration required)**

Tm/Yr													
Grade													

D. M.S. Thesis – Minimum 6 hours

Course No.	Title	Tm/Yr	Grade	Hrs	Course No.	Title	Tm/Yr	Grade	Hrs
20-CHE-8071	M.S. Thesis				20-CHE-8071	M.S. Thesis			
20-CHE-8071	M.S. Thesis				20-CHE-8071	M.S. Thesis			
20-CHE-8071	M.S. Thesis				20-CHE-8071	M.S. Thesis			
20-CHE-8071	M.S. Thesis				20-CHE-8071	M.S. Thesis			

E. OTHER

(These courses DO NOT Count Towards your Degree Earned, for Example ESL classes)

Tm/Yr														
Grade														
Tm/Yr														
Grade														
Tm/Yr														
Grade														
Tm/Yr														
Grade														
Tm/Yr														
Grade														
Tm/Yr														
Grade														

ChE Ph.D. Credit Hour Check List/Program of Study

Name: _____

BS Degree: School _____ Year: _____

MS Degree: School _____ Year: _____

Date Admitted: _____

PhD Qualification Date: Oral _____ Propositions: _____

Candidacy Approval Date: _____

Dissertation Final Defense Date: _____

Required Credit Hours: Course Work (A+B+C+D) _____ Dissertation _____

Advisor Signature _____ Date: _____

GSD Signature _____ Date: _____

**F. ChE Required Courses and Technical Electives
(20-CHE-XXXX excluding -8000, -8071, -9000, -9071, -9072, -9073)**

Course No.	Title	Tm/Yr	Grade	Hrs	Course No.	Title	Tm/Yr	Grade	Hrs
20-CHE-7041	Adv. Thermodynamics				20-CHE-				
20-CHE-6043	Transport I				20-CHE-				
20-CHE-7043	Transport II				20-CHE-				
20-CHE-7077	Chem. Reactor Design				20-CHE-				
20-CHE-					20-CHE-				
20-CHE-					20-CHE-				
20-CHE-					20-CHE-				
20-CHE-					Total Hours				

G. Advanced Math/Statistics

Course No.	Title	Tm/Yr	Grade	Hrs	Course No.	Title	Tm/Yr	Grade	Hrs
					Total Hours				

**H. Seminar and Technical Electives
(Excluding 20-CHE-8000, -8071, -9000)**

Course No.	Title	Tm/Yr	Grade	Hrs	Course No.	Title	Tm/Yr	Grade	Hrs
					Total Hours				

Student's Name: _____

**Committee Report: Ph.D. Proposal Qualifying Procedure
Chemical Engineering Program
Department of Chemical and Materials Engineering
University of Cincinnati**

Date: _____

Title of Proposal: _____

Letter grade of Proposal

Letter grade for Readings credit

<u>Committee</u>		
#1	#2	#3

Additional Remarks

Committee: (1) _____

(2) _____

(3) _____

(4) _____

(5) _____

THIS FORM TO BE PLACED IN STUDENT'S FILE

CHEMICAL ENGINEERING PROGRAM – UNIVERSITY OF CINCINNATI

ANNUAL PROGRESS REVIEW FORM

Name of Student:

Date of Report:

Student Phone #:

Email address:

Program:

Candidate for the degree of:

Chairperson of Dissertation Committee:

We testify that the candidate was examined by us and

Passed

Did not Pass

Annual Progress Review

Thesis or Dissertation Title:

Thesis or Dissertation Advisor:

Examiners: _____

Print Name

Signature

Print Name

Signature

Print Name

Signature

Print Name

Signature

Print Name

Signature

APPROVED BY GRADUATE DIRECTOR: _____

COLLEGE OF ENGINEERING – UNIVERSITY OF CINCINNATI

RECORD OF ORAL/DEFENSE FORM

Name of Student:

Date of Defense:

Student Phone #:

Email address:

Program:

Candidate for the degree of:

Chairperson of Examining Committee:

We testify that the candidate was examined by us and			
Passed <input type="checkbox"/>		Did not Pass <input type="checkbox"/>	
Proposal: <input type="checkbox"/>		Final: <input type="checkbox"/>	
MS Thesis <input type="checkbox"/>	Non-Thesis <input type="checkbox"/>	PhD Dissertation <input type="checkbox"/>	

Thesis or Dissertation Title:

Thesis or Dissertation Advisor:

Examiners:

Print Name	Signature
Print Name	Signature
Print Name	Signature
Print Name	Signature
Print Name	Signature

Program of Study in File? Yes No

Student will not be certified to graduate without a Program of Study.

Baccalaureate Degree Checked? Yes No

Continuing to PHD? Please see Graduate Coordinator for appropriate application form.

APPROVED BY GRADUATE DIRECTOR: _____

M.S. Non-Thesis Special Project Form
Chemical Engineering Program
Department of Chemical and Chemical Engineering
University of Cincinnati

Name of Student: _____

Non-Thesis Special Project Title: _____

Total Credit Hours _____

Date of Written Report Received _____

Grade Received for the Project _____

Faculty Advisor Name, Signature and Date _____

Ph.D. Student Departmental Seminar Checklist
Chemical Engineering Program
Department of Chemical and Materials Engineering
University of Cincinnati

Student Name _____

Department Seminar Title _____

Department Seminar Date _____

Name of Faculty Responsible for Seminar _____

Signature of the Faculty _____

Date of Signature _____