Graduate Guidebook

Department of Chemical Engineering
Northeastern University

“A Community of Scholars”
2018-2019
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1. Introduction

Welcome to the Northeastern University Chemical Engineering Graduate Program. The goals of our Graduate Program are (1) to create an effective learning environment that provides consistent, high-quality educational opportunities to all students, and (2) to promote scholarly achievement for both faculty and students. This graduate guidebook is a living document to provide guidance to students on policies designed to ensure that the Graduate Program reaches these goals. The guidebook is sent via email to current graduate students at the beginning of each semester. A hard copy of this guidebook is available from the Graduate Student Coordinator in the Department of Chemical Engineering Main Office. Any policy changes will be made based on the assumption that there will be no negative impact on current students. If the guidebook is in conflict with college or university policies, the college or university policy shall be followed.

Professor Tom Webster
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This guidebook contains department policies, and college and department graduation requirements. The guidebook is intended to be a common source for all information students need. It is ultimately the responsibility of each student to verify graduation requirements and necessary deadlines with the Graduate School of Engineering (GSE). Questions or suggestions on the content in this guidebook should be directed to the Graduate Student Coordinator or Associate Chair of Graduate Studies:

Graduate Administration Coordinator:
Ms. Sarah Dosier
313 Snell Engineering Center
(617) 373 3208
s.dosier@northeastern.edu

Associate Chair of Graduate Studies:
Professor Ming Su
341 Mugar Life Science Building
(617) 373 6219
m.su@northeastern.edu

Forms referenced and linked to in this guidebook can be found on the department’s website, or see Sarah in the Main Office for a physical copy. It is the responsibility of the student to complete the forms in a timely manner as explained in the guidebook. The forms are to be
submitted to the Graduate Coordinator at the Department of Chemical Engineering Main Office for record keeping.

1.1. Programs Offered

The Department of Chemical Engineering offers Master of Science (MS) and Doctor of Philosophy (PhD). The Master of Science degree in Chemical Engineering is offered with a thesis (full-time) or a non-thesis (full-time or part-time) option. The Doctor of Philosophy degree in Chemical Engineering may only be pursued on a full-time basis. A full-time MS or PhD student may apply for participation in the Cooperative Education Program [http://www.coe.neu.edu/co-op-advantage/graduate-co-op](http://www.coe.neu.edu/co-op-advantage/graduate-co-op) for requirements and contact information. MS students pursuing the thesis option must first receive the approval of their advisor prior to participating in the Cooperative Education Program. Any deviations from the traditional programs listed above (full-time thesis master, full-time non-thesis master, part-time non-thesis master, full-time dissertation doctorate) must be addressed through petition to the Graduate Committee, and will be considered on a case-by-case basis.

Both full-time Doctoral Candidates and full-time Master of Science degree students pursuing a thesis are able to select thesis topics from a diverse range of faculty research interests. New graduate students can learn about ongoing research topics from individual faculty members, faculty websites, and graduate students’ seminars.

1.2. Other Options

In pursuit of research and career goals, a student may wish to follow an academic path that varies from the standard programs described in this guidebook. Any deviations from the traditional programs (full-time thesis master, full-time non-thesis master, part-time non-thesis master, full-time dissertation doctorate) must be addressed through petition to the Graduate Committee, and will be considered on a case-by-case basis. A petition form is available in the College of Engineering (COE) Graduate Office, 130 SN. The form must be completed by the student, approved by the faculty advisor, and submitted to the Chemical Engineering Graduate Committee through the Department of Chemical Engineering Department Main Office. More option details can be found on the GSE website: [http://www.coe.neu.edu/gse/](http://www.coe.neu.edu/gse/).

1.3. Departmental GPA Requirements

Per COE rules, all students must have a cumulative GPA (Grade Point Average) greater than or equal to 3.0 to graduate. To maintain Departmental and College of Engineering (COE) funding, students must maintain a GPA greater than or equal to 3.0, and must not receive a grade in a Core class below a B. If necessary, provisions to repeat courses to increase the GPA may be
applied for through petition to the Chemical Engineering Graduate Committee. Doctoral students are required to achieve a 3.5 GPA in their core courses before petitioning for doctoral candidacy.
2. Coursework

Online Catalog available here:
https://nextcatalog.northeastern.edu/graduate/engineering/chemical/

Table 1: Core Courses

<table>
<thead>
<tr>
<th>Required core courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHME 7320 Chemical Engineering Mathematics</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7330 Chemical Engineering Thermodynamics (CHME 7235: Statistical Thermodynamics can be substituted for Thermodynamics)</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7340 Chemical Engineering Kinetics</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7350 Transport Phenomena</td>
<td>4SH</td>
</tr>
</tbody>
</table>

Table 2: Required Courses

<table>
<thead>
<tr>
<th>Required courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHME 7390 Seminar</td>
<td>0SH</td>
</tr>
<tr>
<td>CHME 7990 MS Thesis</td>
<td>1-4SH</td>
</tr>
<tr>
<td>CHME 7996 MS Thesis Continuation</td>
<td>0SH</td>
</tr>
<tr>
<td>CHME 8960 Candidacy Prep</td>
<td>0SH</td>
</tr>
<tr>
<td>CHME 9990 PhD Dissertation</td>
<td>0SH</td>
</tr>
<tr>
<td>CHME 9996 PhD Dissertation Continuation</td>
<td>0SH</td>
</tr>
</tbody>
</table>
**Table 3: Elective courses**

Students are allowed and encouraged to take courses outside of Chemical Engineering that they and their advisor feel are related to and diversify their areas of research.

<table>
<thead>
<tr>
<th>Elective Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHME 5101  Fundamentals of Chemical Engineering Analysis</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 5137  Computational Modeling in Chemical Engineering</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 5160  Drug Delivery: Engineering Analysis</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 5204  Heterogeneous Catalysis</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 5260  Special Topics in Chemical Engineering</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 5510  Fundamentals in Process Safety Engineering</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 5520  Process Safety Engineering</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 5630  Biochemical Engineering</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 5631  Biomaterials Principles and Applications</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 5632  Advanced Topics in Biomaterials</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 5699  Special Topics in Chemical Engineering</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 5899  Biotechnology</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 6610  Computational Programs in Process Safety Modeling</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7201  Fluid Mechanics</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7202  Chemical Process Heat Transfer</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7203  Separation Processes</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7205  Numerical Techniques in Chemical Engineering</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7210  Advanced Chemical Engineering Calculations</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7220  Electronic Materials Processing</td>
<td>4SH</td>
</tr>
</tbody>
</table>
### Table 3: Elective courses* (Cont.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHME 7221</td>
<td>Thin Film Technology</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7231</td>
<td>Chemical Process Dynamics and Control</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7232</td>
<td>Process Pollution Prevention and Control</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7235</td>
<td>Introduction to Statistical Thermodynamics</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7240</td>
<td>Polymer Science</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7241</td>
<td>Principles of Polymerization</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7250</td>
<td>Advanced Management Techniques</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7260</td>
<td>Special Topics in Chemical Engineering</td>
<td>4SH</td>
</tr>
<tr>
<td>CHME 7261</td>
<td>Special Topics in Chemical Engineering</td>
<td>2SH</td>
</tr>
<tr>
<td>CHME 7262</td>
<td>Special Topics in Process Safety</td>
<td>4SH</td>
</tr>
<tr>
<td>ENGR 5670</td>
<td>Sustainable Energy</td>
<td>4SH</td>
</tr>
<tr>
<td>ENGR 6150</td>
<td>Nanotechnology in Engineering</td>
<td>4SH</td>
</tr>
</tbody>
</table>

CHME 5101 is recommended to incoming Graduate Students. This elective is specifically formulated to help students prepare for the rigorous graduate-level Chemical Engineering core courses at Northeastern University. Students might consider taking this class for example if they either: 1. have an undergraduate background outside of Chemical Engineering 2. haven’t been in school for a while, 3. have any reason for wanting to strengthen your understanding and problem-solving prowess in Chemical Engineering analysis.
Table 4: Certificate Options

<table>
<thead>
<tr>
<th>Certificate Options</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process Safety</td>
<td></td>
</tr>
<tr>
<td>CHME 5510 Fundamentals in Process Safety Engineering</td>
<td>4 SH</td>
</tr>
<tr>
<td>CHME 5520 Process Safety Engineering-- Chemical Reactivity, Reliefs and Hazards Analysis</td>
<td>4 SH</td>
</tr>
<tr>
<td>Relief and Scenario Modeling</td>
<td></td>
</tr>
<tr>
<td>CHME 6610 Computational Programs in Process Safety for Relief and Scenario Modeling</td>
<td>4 SH</td>
</tr>
<tr>
<td>Special Topics</td>
<td></td>
</tr>
<tr>
<td>CHME 7262 Special Topics in Process Safety</td>
<td>4 SH</td>
</tr>
</tbody>
</table>

Program Requirements:
16 total semester hours required
Minimum 3.000 GPA required

The following considerations should be taken into account when seeking graduate credit for courses taken other than the graduate courses offered by the Northeastern University Chemical Engineering Department (CHME) or the College Interdisciplinary Engineering Courses (ENGR).

1. All course credit rules of the College of Engineering must be met in addition to policies described in this Guidebook. The College of Engineering requirements can be found on the Graduate School website: [http://www.coe.neu.edu/gse/apandp.html](http://www.coe.neu.edu/gse/apandp.html).

2. Any CHME or ENGR course at the 5000 level or higher is automatically counted toward degree requirements. Any student wishing to take a 5000 level or higher course in another engineering discipline or in another College must get permission from their faculty advisor and submit a petition form signed by the Associate Chair of Chemical Engineering and approved by the Graduate School of Engineering for the course to count toward their degree. While approval for a course can be gained by petition at any time, a student risks taking a course that will not count toward graduation if the petition form is not submitted and approved prior to the start of the course. The petition form can be found at Graduate School of College of Engineering website.
3. While undergraduate courses may be required for effective matriculation toward a graduate degree, undergraduate courses do not count toward graduate course requirements per University rules.

4. If a graduate student wishes to count a graduate course taken under undergraduate status, a petition should be filed with the Chemical Engineering Graduate Committee. In this case, the petition may be made after the course was taken.

3. Master Of Science Degree

The Master of Science in Chemical Engineering is normally pursued by students with a Bachelor of Science in Chemical Engineering or a closely aligned field. Students wishing to pursue the MS Degree with undergraduate educational backgrounds other than Chemical Engineering may be required to complete supplementary undergraduate coursework. The courses are in addition to the minimum course requirements. The Department of Chemical Engineering Graduate Committee will specify any additional requirements during the admission process.

Course-only Master of Science students are advised by the Chemical Engineering Associate Chair of Graduate Studies and they should work with their faculty advisor to establish the sequence of courses to complete the degree. Master of Science students who undertake thesis research are advised by the Chemical Engineering Associate Chair until they have chosen a mutually-agreed upon faculty research advisor, through the advisor selection process, who will supervise their research.

Students originally admitted to the Chemical Engineering Master’s Program may petition the Chemical Engineering Graduate Committee for admission to the PhD Program, and follow the procedure detailed under the Administrative Procedure Section for the College of Engineering.

Any student who holds a Stipended Graduate Assistantship (TA or RA or Government Stipend) is considered full-time if enrolled in a minimum of 6 semester hours of credit, or Thesis Continuation (0SH), PhD Candidacy Preparation (0SH), etc. The COE Graduate School does not require part-time students to maintain any minimum enrollment.
3.1. Course Requirements

A minimum of 32 credit hours of academic work is required of all full-time students (continuous and cooperative full-time students) to qualify for the Masters in Chemical Engineering.

IF PURSUING A THESIS OPTION, at least 8 semester hours of thesis credit must be included as part of the 32 semester hours credits, and additional semester hours can be thesis credit upon approval of the faculty research advisor. In addition, each student pursuing a thesis option must enroll in the Chemical Engineering Seminar course for each semester (including summer semester) they are matriculating toward their degree. The faculty advisor and student establish the sequence of courses that students take to pursue the Master of Science in Chemical Engineering. Full-time Master of Science degree students who complete the required 8 semester hours of thesis work (CHME 7990) are required to register for CHME 7996 (Thesis Continuation (0SH)) until the thesis is completed, UNLESS they are taking enough classes to be considered full time. Note that although no credits are associated with CHME 7996 (Thesis Continuation), a student registered for this course is considered full-time. This is especially important for international students to maintain their F1 VISA status.

IF PURSUING A NON-THESIS OPTION, students must complete a minimum of 32 SH of coursework, and no enrollment in Chemical Engineering Seminar is required, although it is recommended.

Table 5: Course Requirements for Master of Science Degree (Thesis and Non-Thesis)

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Thesis</th>
<th>Non-Thesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Core Courses</td>
<td>16SH</td>
<td>16 SH</td>
</tr>
<tr>
<td>Master of Science Thesis*</td>
<td>8SH</td>
<td>N/A</td>
</tr>
<tr>
<td>Seminar</td>
<td>0SH</td>
<td>N/A</td>
</tr>
<tr>
<td>Elective Courses**</td>
<td>8SH</td>
<td>16 SH</td>
</tr>
<tr>
<td>Minimum Semester Hours Required***</td>
<td>32SH</td>
<td>32 SH</td>
</tr>
</tbody>
</table>
3.2. Thesis Requirements

Students pursuing a Master of Science in Chemical Engineering with thesis must submit to the Graduate School of Engineering a written thesis that is approved by the Thesis Committee and Department Chair. The graduate school requirements and electronic submittal instructions can be found on the web: http://www.coe.neu.edu/gse. Students are responsible for contacting the Graduate School of Engineering for any updates to thesis requirements and appropriate deadlines. It is recommended that each MS candidate authors from his/her thesis work at least one paper (first author) for publication. The Thesis Committee will have the ultimate authority on the type, number, and quality of these publications. Thesis MS students must complete an oral Master’s Thesis Defense in order to successfully complete the program. The student will be expected to form a Master’s Thesis Committee, composed of a minimum of three members, one who is the faculty advisor, one other faculty member from the Department of Chemical Engineering, and one member from outside of the Department of Chemical Engineering. The primary Thesis Advisor must be a faculty member in the Department of Chemical Engineering. A Thesis Committee Approval form is provided in the Appendix, and must be submitted to the Department of Chemical Engineering Graduate Coordinator at any time, but no later than one month before the thesis defense. The oral presentation will be open to the public, including students, faculty, and the candidate’s committee. The Thesis Committee and any interested faculty may stay after the public is dismissed to further examine the candidate’s work. The committee gives the final approval on the candidate’s oral defense, and the committee decision must be unanimous to approve.

It is the candidate’s responsibility to schedule the oral defense one month ahead of time to ensure full committee attendance. Virtual participation is acceptable as determined by the primary advisor. Two weeks prior to the thesis defense and oral examination, the candidate must submit electronic copies of a complete thesis draft to each thesis committee member. One week prior to the oral defense, the candidate must electronically submit to all Chemical Engineering faculty members and graduate students an abstract that summarizes the original work. The signatures of the committee members, the Department Chair, and the Dean of the Graduate School on the signature page of the final written thesis signifies that the student has passed the thesis defense and final oral examination. The official signature pages, along with COE thesis requirements, can be found on the COE Graduate Office website.

*Master of Science Thesis CHME 7990 (8SH), Master of Science Thesis Continuation CHME 7996 0SH.
**Students may complete a maximum of 8SH (Thesis Option) or 12SH (Non-Thesis Option) of coursework for credit outside of the Chemical Engineering Department under guidance of their faculty advisor and approval of the Graduate Coordinator.
***Exclusive of any preparatory undergraduate courses.
3.3. Part-time Students

Part-time students may progress according to their abilities within the seven-year time limit. A minimum of 32 semester hours of academic coursework is required for part-time students. The thesis and seminar course are not required for part-time students pursuing a course masters. The updated details on the time limit between active enrollment periods can be found at the COE Graduate Office Website: http://www.coe.neu.edu/academics/graduate-school-engineering

Master of Science students wishing to switch their status from part-time to full-time must notify the Graduate Administration Coordinator and the Department of Chemical Engineering and make a formal petition to the Graduate School of Engineering. Refer to the regulations of the Graduate School of Engineering for further information on academic administrative policies.

3.4. Departure Prior to Thesis Completion

Occasionally, full-time graduate students have left the Department prior to completion of all their degree requirements. In such instances, long time intervals have often elapsed before theses or manuscript submission. Accordingly, the Department has adopted the guideline that an MS thesis cannot be submitted for a degree beyond three years after the student is no longer actively pursuing the research. Exceptions may be granted only upon petition to the Departmental Graduate Committee. The petition must demonstrate extenuating circumstances.

4. The Doctor Of Philosophy Degree

The Department of Chemical Engineering offers the degree of Doctor of Philosophy. A Doctoral Student (PhD student) becomes a Doctoral Candidate (PhD Candidate) upon meeting the Qualifications for Doctoral Candidacy. After becoming a Doctoral Candidate, a student must complete the required academic coursework and a dissertation under the direction of a Dissertation Advisor. To be granted the degree of Doctor of Philosophy in Chemical Engineering, a candidate must pass a Dissertation Defense and Final Oral Examination.

Doctoral Candidacy will be effective once the student has successfully completed all four core Chemical Engineering courses (thermodynamics/statistical thermodynamics, kinetics, transport, and mathematics) with a GPA of 3.5 or higher and has successfully presented and defended a PhD Dissertation Proposal. If a student obtained a GPA between 3.0 and 3.5, and wishes to be re-considered for PhD Candidacy, the student must submit a research article on which he/she is the first author by the semester following his/her completion of the four core Chemical
Engineering courses. The student must also request permission from the faculty, for the opportunity to defend a dissertation proposal within 1 year of their completion of the four core Chemical Engineering courses. If the student fails to meet the deadline for paper submission or proposal defense due to extenuating circumstances, he/she must consult with the advisor (for RAs) or the advisor and Chemical Engineering Graduate Committee (for TAs) to determine their eligibility for an extension. The maximum extension is one year, and only one extension will be provided. Doctoral Candidacy will be effective once the paper is accepted and a PhD Dissertation Proposal has been successfully presented and defended. Students failing to meet these requirements for PhD Candidacy can opt to complete a MS degree.

To maintain full-time status, funded PhD students or candidates (TAs, RAs or students on Government Stipends) must be registered for a minimum of 6 semester hours (SH) of credit or Dissertation (0SH) or Dissertation Continuation (0SH) or Candidacy Prep (0SH) per continuous fall, spring, and summer semesters.

An unfunded Ph.D. student or candidate whose primary language is English is considered full-time if registered for a minimum of 12 semester hours of credit or Dissertation (0SH) or Dissertation Continuation (0SH) per continuous fall, spring, and summer semesters. An unfunded Ph.D. student or candidate for whom English is a second language is considered full-time if registered for a minimum of 8 semester hours of credit or Dissertation (0SH) or Dissertation Continuation (0SH) per continuous fall, spring, and summer semesters.

Maintaining a full-time status during fall and spring semesters is a legal requirement for international students to keep their visa status.

### 4.1. Course Requirements

A minimum of 24 semester hours of academic course work, **not including any independent study credits**, beyond the Bachelor Degree is required. The 24 semester hours must include at least 16 semester hours of academic coursework (exclusive of thesis or dissertation) taken at Northeastern University. All four of the core courses must be included in the student’s academic graduate coursework.

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Core Courses</td>
<td>16 SH</td>
</tr>
<tr>
<td>CHME 7390 Seminar</td>
<td>0 SH</td>
</tr>
</tbody>
</table>

Table 6: Course Requirements for Doctor of Philosophy Degree
Effective: March 1st 2018

<table>
<thead>
<tr>
<th>Elective Courses</th>
<th>8 SH</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHME 9990 Dissertation</td>
<td>0 SH</td>
</tr>
<tr>
<td>CHME 9996 Dissertation Continuation</td>
<td>0 SH</td>
</tr>
<tr>
<td>Minimum Semester hours required*</td>
<td>24 SH</td>
</tr>
</tbody>
</table>

*Exclusive of any preparatory undergraduate courses, or independent study courses

Once a student is no longer taking a full-time course load, the student is required to register for CHME 8960 until they successfully pass their proposal defense, then they are required to register for Dissertation followed by CHME 9996 Dissertation Continuation. Note that he or she must register for two (2) consecutive semesters of Dissertation (CHME 9990) before registering for Dissertation Continuation (CHME 9996). Students then register for Dissertation Continuation every semester until the dissertation is defended, and approved by the Dean of the Graduate School. Students successfully making progress toward their degree will earn a grade of “I/P” (In-Progress) for CHME 9990 Dissertation until the dissertation is defended and the grade is changed to “S” or “U” prior to graduation. CHME 9996 Dissertation Continuation is graded with either an “S” or a “U” and is not changed prior to graduation. **Note: no credits are awarded for Dissertation (CHME 9990) or Dissertation Continuation (CHME 9996), however a student is considered full-time if registered for this course.** This is especially important for international students to maintain their F1 VISA status. All students pursuing a Doctoral Degree must enroll in the Department’s seminar course (CHME 7390) for each Fall and Spring semester they are matriculating toward their degree.

If a student who was working on a Master’s Thesis is pursuing a PhD without first completing their Master’s Thesis, the Master’s Thesis credit earned during the first years of study (up to 6SH) can be transferred to independent study credits, but not counted toward the 24 SH minimum course requirements for the PhD degree. If a student completes the MS degree, then the credits stay as recorded for their MS degree requirements, but the thesis credits do not count toward the PhD degree.

Students will be advised on their courses for the first semester by the Associate Chair for Graduate Studies during orientation. After the first semester, students will work with their faculty research advisor to determine appropriate courses and course schedule to meet their educational needs and aspirations. Upon consultation with the advisor, a student may take any number of course credits without additional financial penalty. Students and Advisors should keep in mind that the requirements for Doctoral Candidacy include all four core courses and the proposal defense, and that the residency requirement requires a minimum of 1 full year of academic studies **after** becoming a Doctoral Candidate.
4.2. Language Requirement

There is no foreign language requirement for the Doctor of Philosophy Degree. The candidate must be proficient in technical writing and oral presentation in the English language. The Chemical Engineering Graduate Committee may require additional coursework to increase a student's English proficiency.

4.3. Qualifications for Doctoral Candidacy

To qualify for doctoral candidacy, the student must demonstrate mastery of four core areas of chemical engineering (Thermodynamics, Kinetics, Transport and Mathematics) by earning a 3.5 GPA. In addition, the student must demonstrate critical thinking, analysis, and experimental planning skills related to their dissertation research topic, as determined by the student's dissertation committee, by passing an oral defense of the dissertation research proposal. The student earns the classification of Doctoral Candidate upon successful completion of these requirements.

If a student obtained a GPA between 3.0 and 3.5, and wishes to be considered for PhD Candidacy, the student must submit a research article on which he/she is the first author by the semester following his/her completion of the four core Chemical Engineering courses. The student must also request permission from the faculty (through their research advisor) for the opportunity to defend a dissertation proposal within 1 year of completion of the four core Chemical Engineering courses. If the student fails to meet the deadline for paper submission or proposal defense due to extenuating circumstances, he or she must consult with the advisor (for RAs) or the advisor and graduate committee (for TAs) to determine their eligibility for an extension. The maximum extension is one year, and only one extension will be provided. Doctoral candidacy will be effective once the paper is accepted and a PhD dissertation proposal has been successfully presented and defended. Students failing to meet these requirements for PhD Candidacy and can opt to complete a MS degree.

The Proposal Defense consists of a written dissertation proposal and an oral defense of that proposal, usually presented in the fall or spring of the second year. The student wishing to pursue a doctoral degree must prepare a Dissertation Proposal. This will include the problem definition, a critical review of the literature, the research goals, a proposed experimental plan, and a methodology for analysis of results. Note that the Dissertation Proposal DOES NOT REQUIRE ANY RESULTS collected by the student. So, a student's proposal may or may not include preliminary results. The format of the document should match the format (Appendix A) of the final dissertation as much as feasible. One month prior to the Oral Proposal Defense, the student must arrange for the time and location of the defense in order to ensure their faculty advisor and a minimum of 3 other committee members can attend, for a total of 4 committee members. Two weeks prior to the Oral Proposal Defense, the student must:
(1) Submit electronically a PDF of the Dissertation Proposal to all Chemical Engineering faculty (see appendix A for format). (Please note a physical copy to the department is no longer a requirement).

(2) Submit electronically the Dissertation Proposal to the Dissertation Committee.
The oral presentation will be open to students, faculty, and the student’s committee. The Dissertation Committee and any interested faculty may stay after the general audience is dismissed to further examine the student’s proposed work. In the oral presentation the student must present a clear argument for the proposed work, present a critical literature analysis, defend an experimental plan, and show knowledge of the research topic. The committee gives the final approval on the student’s oral defense, and will sign a proposal approval sheet upon successful completion of the Oral Proposal Defense. This indicates approval of the dissertation topic and its plan of execution. The student thus earns the classification of Doctoral Candidate. The signed approval form should be turned in to the Administrator in the Department of Chemical Engineering main office, 313 SN, or the Graduate Administration Coordinator, in room 316 SN. The Graduate School of Engineering will be notified to update the status of the student.

In the event that the student does not pass the Oral Proposal Defense, he or she can choose to petition the faculty. Students may be eligible to retry their defense up to one time. This is at the discretion of the Committee, and will decide on a case-by-case basis. The student should first contact the Graduate Coordinator to redo the proposal document and oral defense. The student may have the option to graduate with a Masters Degree.

4.4. Residence Requirement

The residence requirement is satisfied by completing one academic year of full-time graduate studies after successfully becoming a doctoral candidate. Additional academic course work (exclusive of thesis and seminars) may be required during this period.

4.5. Dissertation Committee Selection

The student is responsible for proposing a dissertation committee to be approved by the Dissertation Advisor at least one month prior to the Oral Proposal Defense. The committee must have a minimum of 4 members. The primary Dissertation Advisor must be a faculty member in the Chemical Engineering Department. One of the committee members must be external to the department. The Committee membership is not limited to faculty at Northeastern University, nor to engineering faculty. The student is encouraged to consider experts in the dissertation topic, and to work with the Dissertation Advisor to create a meaningful and helpful committee. The committee approval form is given in Appendix C. An approved form will be filed in the Chemical Engineering Office. Committee membership may be changed, with approval of the Dissertation Advisor, up to 1 semester prior to the dissertation defense. The dissertation committee shall be kept informed of the progress of the student and meetings will be held as needed and as
determined by the student and the advisor. The committee is required to attend the dissertation defense (virtual participation is acceptable as determined by the primary advisor) and will approve the dissertation in its final form. As much as is feasible, the full committee should attend the Oral Proposal Presentation and all must sign the prospectus approval sheet declaring the student a Doctoral Candidate.

4.6. Change in Dissertation Advisor

Typically, students choose research topics and primary advisors in the first semester as a graduate student. In the rare case that necessitates a change of Dissertation Advisor, the consequences likely include an extended stay for the student and additional funding, and may impact department resources. So, all advisor changes must be approved by the advisor of record, the Associate Chair for Graduate Studies and the Department Chair.

4.7. Dissertation

After degree candidacy has been established, a candidate must complete original, publishable research. In order to be granted the PhD, a candidate must complete a written dissertation, which embodies the results of original research and includes material suitable for publication. The graduate school requirements and electronic submittal instructions can be found on the web: http://www.coe.neu.edu/student-services/dissertation/thesis-instructions. Students are responsible for contacting the Graduate School of Engineering for any updates to dissertation requirements and deadlines. It is recommended that each Doctoral Candidate should have 4-6 archival papers as first authors from their dissertation research (with one published before dissertation defense). The PhD dissertation committee will have ultimate authority on the type, number, and quality of these publications.

4.8. Dissertation Defense and Final Oral Examination

This comprehensive examination includes the oral public dissertation defense as well as a final oral examination to include the subject matter of the doctoral dissertation and significant developments in the field of the dissertation work. The oral presentation will be open to the public, including students, faculty, and the student's committee. The final oral examination is open only to faculty and the student's dissertation committee. One month prior to the Dissertation Defense, the candidate must arrange for the time and location of the defense in order to ensure the full committee to present.

Two weeks prior to Dissertation Defense and oral examination, the candidate must:
(1) Submit electronically to all Chemical Engineering faculty a 25-page dissertation digest that summarizes the original work.
(2) Place one copy of the full dissertation (after dissertation is approved by the primary advisor) in the Chemical Engineering main office to be available to faculty.

(3) Submit electronic copies of the full dissertation to each Dissertation Committee member.

(4) Announce the agreed upon defense date and time to the public through emails. The announcement to the public (including all faculty, students, and committee members) must include a 1-page abstract of the dissertation.

The Dissertation Committee makes the decision on approval of the Dissertation Defense, and approval requires a unanimous decision. The signatures of the committee members and the Department Head on the signature page of the final written dissertation signifies that the student has passed the dissertation defense and final oral examination.

In order to walk in the Spring graduation ceremony, prior to defending the dissertation, the student must submit a complete draft of the dissertation to their advisor and obtain their advisor’s signature on the “Permission to Walk without Defense” form in the Appendix.

4.9. Departure Prior to Dissertation Completion

Occasionally, graduate students have left the Department prior to completion of all their degree requirements. In such instances, long time intervals have often elapsed before theses or manuscript submission. Accordingly, the Department has adopted the guideline that a PhD dissertation cannot be submitted for a degree beyond three years after the student is no longer actively pursuing the research. Exceptions may be granted only upon petition to the Department Graduate Committee which a) demonstrates extenuating circumstances, and b) proves that the research is still of value to the profession.

4.10. MS along the way

Some PhD candidates who entered without an MS degree may want to obtain a MS degree along the way to their PhD. This is possible, as long as the student meets the requirements for the MS degree, including 32 SH of coursework. Students wishing to pursue this option should meet with the Associate Chair for Graduate Studies to discuss the details. This action is possible upon approval of the Graduate Committee.

5. Advisor Selection (Full-Time Graduate)
5.1. Student Responsibilities

In order to equitably distribute graduate students to faculty members conducting research, the Chemical Engineering Department has established a policy regarding research advisor selection. New or currently unassigned PhD and thesis-MS students are required to follow the procedure described below in choosing an advisor. No thesis students will be accepted by the faculty unless they abide by the Department rules for advisor selection. Note: Students entering the program after accepting a direct Research Assistant (RA) offer from a Thesis Advisor have already made their commitment and are exempt from this procedure. In addition to satisfying equitable student distribution, this procedure is designed to allow students to become familiar with department faculty members and their research interests and for faculty to meet new students.

1. The faculty will create a forum that provides the students with the opportunity to learn about research in the department. Each student must attend this event and make an appointment to discuss research interests with at least four of the Chemical Engineering Faculty on the interview list provided by the department on the Advisor Selection Form.

2. Following the interview, faculty should initial the form next to their name.

3. After seeing at least four of the faculty on the list, students must submit the Advisor selection Form to the Chemical Engineering Office with the name of the professor with whom they would most like to work, and a second and third choice.

4. This procedure, including notification of official advisor assignments, will be completed early in the first semester (typically before October).

5. If a student wishes to change advisors (such as between completion of the MS Degree and start of the PhD Degree), the same procedure must be followed.

6. Graduate Performance Evaluation

The Chemical Engineering Department requires that all graduate students be evaluated annually. The evaluation documents constitute a narrative documentation of a student's progress, in addition to official transcripts, and will be used to assess graduate award evaluations and other opportunities. The evaluation form can be found in the appendix. The evaluation will be done before the end of each spring semester. An evaluation will include 1) a self-assessment of annual performance, and 2) a face-to-face meeting with the faculty advisor to discuss the performance evaluation.
Coursework only Master’s students are not required to complete a self evaluation, but are encouraged to do so.

The student should feel free to make comments on the evaluation. The student signature is required on each evaluation, but the signature does not indicate agreement with the evaluation, only that a conversation has been held.

Overall performance ratings include outstanding, excellent, good, satisfactory and unsatisfactory. While student support is never guaranteed, a satisfactory rating on file is necessary for future support and registration to be approved.

7. Financial Support For Graduate Students

It is the goal of the Chemical Engineering Department and its faculty to provide financial support for full-time graduate students maintaining satisfactory progress for the duration of their degree program. However, this goal can never be fully guaranteed. The maintenance of this funding is complex and variable. Sources of funding change, and the responsibilities associated with different funding sources are different. The Department has, therefore, established some guidelines for the most common situations.

7.1. Students Pursuing Master’s Degrees

1. Full-time students who are receiving support from faculty external research grants are required to complete an MS Degree with a thesis.
2. Students pursuing the Course MS Degree (non-thesis option) cannot receive departmental or COE financial support.

7.2. Students Pursuing the PhD Degree

Candidates for the PhD Degree funded from external sources may see this funding source ends prior to completion of the degree. In order to provide for this event, the Department has adopted the following policies:

1. Students who have successfully earned Doctoral Candidate Status and have their external funding source terminated will be considered for a teaching assistantship (TA). The level of this funding shall be determined by the Graduate Committee and Department Chair based upon the following: a) The availability of departmental funds. b) The student’s progress toward degree. c)
The recommendations of the departmental faculty familiar with the student’s work. d) The PhD advisor making a continuing effort to secure funding for that student from external sources.

7.3. Departmentally Supported Students

First year graduate student support will be specified in their admissions letter. Continuation of departmental support is not automatic. To provide for equity in its distribution, the Department has adopted the following policy:

All department-supported TA’s and non-supported students will be reviewed near the end of each academic year. The Graduate Committee will then recommend support or not, and the level of support, to the Department Chair. If the Graduate Committee and the Department Chair have a difference of opinion they will bring the issue before the entire Chemical Engineering Department. The faculty will be informed of funding decisions prior to student notification. The Faculty Advisor of a student who has lost department support has the right to appeal the decision to the faculty.

Departmental support for the PhD is generally for 3 years beyond the Master’s Degree, or 5 years beyond the Bachelor’s Degree, and is subject to annual approval by the Graduate Committee and Department Chair. Extension of the general time period must be justified to the Graduate Committee and the Department Chair.

8. Guidelines For Supported Students

General

1. All students are entitled to 10 days of vacation a year. Planned vacation must be approved one month in advance by the Faculty Research Advisor for RAs, and by the Faculty Research Advisor and Department Chair/Vice Chair for Undergraduate Education for TAs. Any decisions about when vacation is taken and if more vacation is allowed for extenuating circumstances are made by the Faculty Research Advisor for RAs, and by the Faculty Research Advisor and Department Chair/Vice Chair for Undergraduate Education for TAs.

2. All funded students (TA, RA, Fellowship, etc.) are expected to be present during undergraduate school vacations and semester breaks to work on their research. Absences will be handled by the Department Chair and Graduate Coordinator for unassigned TAs and by the specific research Faculty Advisors for RAs and TAs.
3. Continuation of support for all funded students is dependent upon the satisfactory progression toward their degree, as determined by their Faculty Research Advisor and the Department Chair.

4. Continuation of support for all funded students additionally depends upon the satisfactory performance of their assigned duties as well as their academic work. TAs are evaluated on a semester basis via the Graduate Student and TA Evaluation forms (pg 32-36) completed by the professor to whom they are assigned. RA’s are evaluated by their Faculty Research Advisor using the Graduate Student Evaluation forms (pg 32-35).

5. All graduate students are required to attend safety-training and waste management sessions as required by Northeastern University regulations. Training information may be found on the Office of Environmental Health and Safety website: https://www.northeastern.edu/ehs/training/online-training/.

6. Graduate students are expected to do their part in creating a community of scholar where the environment enhances effective learning and professional growth. Example actions include but are not limited to:
   a) taking responsibility for laboratory safety, maintenance, and training of new personnel, b) academically challenging and stretching fellow graduate students and faculty by sharing their own work and questioning other’s work for the personal growth of themselves and others, c) seeking expertise within and beyond the Department to achieve research goals, d) continuously pursuing research goals and a deep understanding of both general chemical engineering principles and their specific research area, e) writing conference papers and peer-reviewed publications. For the MS student at least one publication is expected. For a Doctoral Candidate, a minimum of 4 to 6 archival papers are recommended.

8.1. Teaching Assistants (TAs)

1. TAs will be assigned to specific undergraduate courses on a semester-by-semester basis.

2. The TA should report to the professor in charge of their assigned course one week before university classes begin. For Fall of 2017 that date is, Tuesday August 29th. For Spring of 2018, that date is Tuesday January 2nd.

3. TA duties will include such tasks as: assisting the faculty in the conduction of laboratory courses; grading laboratory reports, homework assignments, and exams; and running recitation sessions. Occasionally TA’s may be asked to conduct a lecture in the absence of the faculty member in charge. It is a Department practice that TA’s will not be used on a regular basis to teach classes.
4. It is the responsibility of the TA to be familiar with the course material and with the operation of the course. This will, at a minimum, require close communication with the professor in charge, and may require that the TA attend some or all of the lectures/problem sessions. It is the responsibility of the faculty to inform the TA of their specific duties in a timely fashion so that they may be adequately prepared.

5. All TAs are expected to be available to students of the class to which they are assigned as a TA. Establishing office hours is recommended.

6. A TAs load is 20 hours/week maximum over the course of the semester spent assisting classroom learning. Some courses will require significant preparation when school is not in session.

7. All TA's are expected to work on their thesis research during semester breaks unless given the time off by their research advisors. Time off requests should be submitted in writing to advisors one month prior to time off.

8.2. Research Assistants (RAs)

1. RAs will report to their faculty advisors on the first day of their assignment.

2. RAs will be responsible for conducting research related to the project to which they are assigned. The specifics of these duties will be communicated to the student by the faculty advisor.

3. RAs may be required to work up to 20 hours/week on average on responsibilities not directly related to their dissertation research.

4. All RA's are expected to work on their thesis research during semester breaks unless given the time off by their research advisors. Time off requests should be submitted in writing to advisors one month prior to time off.
9. Expectations of the Faculty

Students should expect the faculty to be committed to creating a community of scholars where the environment enhances effective learning and professional growth. Actions toward this goal include but are not limited to the following:

1. Providing opportunities in core courses for students to develop a graduate-level understanding of chemical engineering principles.

2. Challenging and stretching students and each other to achieve high standards of excellence.

3. Encouraging students to broaden their knowledge of chemical engineering as well as to develop expertise in an area of research by learning new technology areas in elective and core courses.

9.1. Patents and Confidentiality of Research

New and innovative research may result in patent and secrecy issues. Students should discuss with their faculty advisor issues of confidentiality related to their research area in accordance with the policies of the University. The official Northeastern University patent and intellectual property policy is available in a separate document, which may be obtained from the Office of Research Management:

Appendix A

Format of Dissertation Proposal for Doctoral Candidacy

The dissertation proposal will comprise two main sections. The first section is a literature review, and the second section is a scientific program proposal.

Section 1.

The first section will review the scientific and engineering literature of the discipline relating to the proposal in the second section. The specific discipline and scope of the review will be approved by the research advisor.

The purposes of the review include: developing your skills at critically evaluating technical publications in historical context, developing scientific writing skills, developing expertise in the discipline, and understanding how to contribute new progress to the discipline. The review creates an understanding of the topic for the readers (committee members), summarizes recent progress in the particular discipline, and summarizes the current state of knowledge as well as any controversies or gaps in knowledge.

The review comprises of a title and four parts.
1. Introduction
   The introduction motivates the reader’s interest, provides an overall “big picture” view of the review, and defines the scope.
2. Body
   The body concentrates on the primary literature and provides both experimental and theoretical results that shape the current state of the discipline. The results are critically reviewed, controversies or gaps in knowledge are identified. Use figures and/or tables from the original data to support your positions.
3. Conclusion and Future Directions
   Succinctly summarize your main points. Identify what new work would make progress in the discipline and why such progress is important.
4. Literature Cited
   Use a minimum of ten sources. Format the literature citations to match the requirements of the proposal section or use a citation style determined by the research advisor.

The first three parts of the review will comprise at least 5 pages of written text (not including figures, tables, equations, and literature cited) but no more than 30 pages total (not including literature cited). Each page will be single-spaced with 1-inch margins to all borders. Text will be in 12 point font in either Arial, Helvetica, Calibri, Times, or Times New Roman.

Suggested Resources
Section 2

The second section will comprise a scientific program proposal. The format and content of the proposal will be that required by a United States government funding agency, such as the National Institutes of Health, the National Science Foundation, the Department of Commerce, the Department of Energy, or the Department of Defense. The selection of the funding agency used to compose the proposal will be decided by the research advisor. Refer to the government agency proposal specifications to fulfill the requirements of the proposal. If the funding agency does not already indicate a page limit, then the page limit of this Section will be 30 pages of written text (not including literature cited). If the funding agency does not already indicate formatting requirements, then the same formatting used in Section 1 will be used in Section 2.
NEW STUDENT CHECK-IN FORM
NORTHEASTERN UNIVERSITY
Department of Chemical Engineering

Student Information

Student Name: ________________________________________________________________

First                                M.I.                                Last

Degree Sought: (circle one):   M.S. Thesis         M.S. Non-Thesis         Ph.D.

NU E-Mail: _________________________________________________________________

NUID#: ____________________________________________________________________

Phone: ______________________________________________________________________

Local Mailing Address:
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________

Orientation

New Student Orientation is held at the beginning of every semester. If you are unable to attend, it is your responsibility to schedule a meeting with the Chemical Engineering Graduate Coordinator to discuss program details.

After completing the form, please deliver it to the main office of the Department of Chemical Engineering, 313 SN.

Received by Administrative Assistant:

Administrative Assistant: ___________________________ Date: __________

Graduate Coordinator: ___________________________ Date: __________

The fully signed form will be maintained by the Department of Chemical Engineering and an electronic copy will be sent to the student.
## Faculty-Graduate Student Interviews

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<tr>
<th>Faculty</th>
<th>Office #</th>
<th>Interview Day and Time</th>
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<tbody>
<tr>
<td>Annabi, Nasim</td>
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<td>Asthagiri, Anand</td>
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### Faculty-Graduate Student Interviews, Cont’d

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Student Name: ____________________________________________

First                          M.I.                  Last

NUID#: ________________________________
Advisor Selection Form

NORTHEASTERN UNIVERSITY
Department of Chemical Engineering

Date: ____________________
Student Name: ____________________________________________

First M.I. Last

MS or PhD: ____________________ NUID#: ________________________

Faculty Advisor Choice and Project:
1. ____________________________________________________________

2. ____________________________________________________________

3. ____________________________________________________________

Complete and submit form to the main office of the Department of Chemical Engineering, 313 SN, no later than 12pm on January 24th 2018.

The Chemical Engineering Graduate Coordinator will obtain approval from the Associate Chair of Graduate Studies.

Received by Graduate Coordinator:

Graduate Coordinator: ____________________________
Date: __________

Associate Chair of Graduate Studies: ____________________________
Date: __________
Bi-Annual Graduate Self Evaluation Form

Graduate Self Evaluation Forms are available online, and will be emailed out at the end of every semester. These are the questions you will be asked about:

**Technical Skills**
(skills in lab: ability to set up experiments carefully and reproducibly, ability to reproduce experiments from literature descriptions, skill at purifying products, ability to interpret data)

**Presentation Skills**
(ability to effectively communicate your research results in an oral presentation; ability to effectively communicate your research results in writing)

**Depth of Technical Knowledge**
(knowledge of your specific project and area, familiarity with relevant literature)

**Breadth of Technical Knowledge**
(knowledge of areas outside your project, familiarity with general literature)

**Creativity**
(developing new ways to solve specific problems in the lab, developing new project ideas, combining your chemistry with other group members in a collaborative way, pushing science forward)

**Work Ethic**
(hours in lab; hr/wk: <40 40-45 45-55 55-65 65+ hours thinking about data or the scientific literature, priority of graduate school)

**Efficiency/Productivity**
(efficient use of time in lab, ability to multi-task, time management)

**Independence**
(thinking critically for yourself and solving problems on your own; knowing when to ask for help)

**Leadership**
(helping other group members; taking charge of things that need to be done without being asked; setting a good example for undergraduate researchers)

**Teamwork**
(good group citizen, helping and supporting others)
Bi-Annual Evaluation of Graduate Student Performance

The evaluations are now online, and will be sent out at the end of each semester. Here are the metrics you will be reviewed on:

- If you are a PhD student, you must complete your dissertation proposal within one year of completing your Core Classes. Are you on track with this timeline?
- Coursework (including required seminar)
- Awards and honors
- Papers in progress, submitted and/or published
- Conferences attended where student presented research results.
- Specific target areas for improvement in next 6 months:
- Goals for the next year (specific project based goals as well as personal development goals). If you plan to graduate this year – state your graduation plan:
- What are your long-term career goals?
- Suggestions
- Student Comments
TA Evaluation Form
NORTHEASTERN UNIVERSITY
Department of Chemical Engineering

Student Name: ___________________________ NUID#: ______________________

Course Assignment: _______________________________________________________

Faculty Member: _________________________ Semester & Year: _________

Description of Assigned Duties:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Description of TA’s Performance of Duties:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Recommended for Continued Support?

☑ Yes
☑ No

Recommendations for Student Improvement:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Faculty please email this form to Sarah Dosier in Chemical Engineering Office at s.dosier@northeastern.edu
NORTHEASTERN UNIVERSITY  
Department of Chemical Engineering 
MS Thesis Committee Approval Form

Author: _______________________________ NUID __________________

Research Topic: ______________________________

Thesis Approval: (A minimum of three committee members, at least two from ChemE and one from outside the department)

Committee Member: Name ______________________________
Signature: ___________________________ Date: __________

Committee Member: Name ______________________________
Signature: ___________________________ Date: __________

Committee Member: Name ______________________________
Signature: ___________________________ Date: __________

Committee Member: Name ______________________________
Signature: ___________________________ Date: __________

Thesis Advisor: Name ______________________________
Signature: ___________________________ Date: __________

Received by Administrative Assistant in the Chemical Engineering Main Office:

Administrative Assistant: ______________________________ Date: __________
Chemical Engineering Main Office

Graduate Coordinator Approval: __________________________ Date: __________

Student must submit the fully signed form to the Chemical Engineering Main Office to be eligible to graduate.

Page 1 of 2
NORTHEASTERN UNIVERSITY
Department of Chemical Engineering
MS Thesis Approval

**Thesis Title:**
____________________________________________
____________________________________________
____________________________________________

Student Name: ______________________________________________

**Thesis Approval:** (A minimum of four committee members, at least two from ChemE and one from outside the department)

Committee Member: ______________________________  Date: _________

Committee Member: ______________________________  Date: _________

Committee Member: ______________________________  Date: _________

Committee Member: ______________________________  Date: _________

Committee Member: ______________________________  Date: _________

Dissertation Advisor:______________________________  Date: _________

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NORTHEASTERN UNIVERSITY
Department of Chemical Engineering
PhD Dissertation Proposal Committee Approval Form

Author: _______________________________________________ NUID: ____________________

Research Topic: _____________________________________________

Proposal Approval: (A minimum of four committee members, at least two from ChemE and one from outside the department)

Committee Member: Name______________________________
Signature: ___________________________ Date: __________

Committee Member: Name______________________________
Signature: ___________________________ Date: __________

Committee Member: Name______________________________
Signature: ___________________________ Date: __________

Committee Member: Name______________________________
Signature: ___________________________ Date: __________

Thesis Advisor: Name______________________________
Signature: ___________________________ Date: __________

Student’s Cumulative GPA in Core Classes: __________

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Document 1 of 4
NORTHEASTERN UNIVERSITY
Department of Chemical Engineering
PhD Dissertation Proposal Approval

Dissertation Proposal Title: ______________________________________
________________________________________________________________
________________________________________________________________

Student Name: __________________________________________________

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Committee Member: ____________________________ Date: ____________

Committee Member: ____________________________ Date: ____________

Committee Member: ____________________________ Date: ____________

Committee Member: ____________________________ Date: ____________

Committee Member: ____________________________ Date: ____________

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Author: ______________________________________________

NUID:________________________________________________

Research Topic: ______________________________________

Thesis Approval: (A minimum of four committee members, at least two from ChemE and one from outside the department)

Committee Member: Name ______________________________
Signature: ___________________________ Date: ____________

Committee Member: Name ______________________________
Signature: ___________________________ Date: ____________

Committee Member: Name ______________________________
Signature: ___________________________ Date: ____________

Committee Member: Name ______________________________
Signature: ___________________________ Date: ____________

Thesis Advisor: Name ______________________________
Signature: ___________________________ Date: ____________

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