



University at Buffalo

Department of Civil, Structural
and Environmental Engineering

School of Engineering and Applied Sciences

Graduate Studies Manual

Academic Year 2022-2023



Structural Engineering,
Mechanics and Materials



Environmental and Water
Resources Engineering



Geosystems Engineering



Transportation Engineering

University at Buffalo

**Department of Civil, Structural and
Environmental Engineering (CSEE)**

Graduate Studies Manual

**Policies and Procedures for
Graduate Students and Advisors**

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Preface

The policies and procedures summarized in this manual are applicable to all graduate students in the Department of Civil, Structural and Environmental Engineering (CSEE), effective August 29, 2022. Exceptions to these policies and procedures must be approved by the CSEE Department Chair or Director of Graduate Studies. The Department reserves the right to modify the procedures and requirements described herein. Unless otherwise noted, policy changes will not apply retroactively to students who matriculated in a CSEE graduate degree program prior to the effective date of the Graduate Studies Manual.

In accordance with federal and state laws, no person in whatever relationship with the State University of New York at Buffalo shall be subject to discrimination based on age, religion or creed, color, disability, national origin, race, ethnicity, sex or sexual orientation, marital, or veteran status.

TABLE OF CONTENTS

1.	General Information.....	1
1.1	Introduction.....	1
1.2	Initial Advisement and Course Registration	2
2.	Graduate Programs and Degree Requirements	3
2.1	Degree Options and Program Concentrations	3
2.2	Master of Science Program	3
2.2.1	<i>Coursework</i>	3
2.2.2	<i>Culminating Experience</i>	11
2.2.3	<i>Faculty Advisors for M.S. Project and Thesis</i>	12
2.2.4	<i>Graduation and Degree Conferral</i>	13
2.3	Doctor of Philosophy Program	13
2.3.1	<i>Coursework</i>	13
2.3.2	<i>Qualifying Examination</i>	14
2.3.3	<i>Application to Candidacy</i>	15
2.3.4	<i>Dissertation Committee</i>	16
2.3.5	<i>Dissertation Proposal</i>	16
2.3.6	<i>Dissertation and Defense</i>	17
2.3.7	<i>Mid-program Evaluations</i>	17
2.3.8	<i>Degree Conferral</i>	17
2.4	Advanced Certificate in Bridge Engineering.....	18
3.	Additional Graduate Policies and Procedures	19
3.1	Continuous Registration, Full-time Status, and Residency.....	19
3.2	Transfer of Credits Taken at Other Universities	19
3.3	Minimum Grades in Required Courses	20
3.4	Informal Coursework: Internships	20
3.5	Informal Coursework: Individual Problems.....	22
3.6	Undergraduate Courses for Graduate Credit	22
3.7	Undergraduate Student Enrollment in Graduate Courses	22
3.8	Inapplicable Credits	23
3.9	Grading Policy	23
3.10	Resigning from Courses	23
3.11	Repeating Courses	23
3.12	Non-Matriculated Students	23
3.13	Distance Learning.....	24
3.14	GPA Requirement for Good Academic Standing	24
3.15	Academic Probation.....	24
3.16	Academic Dismissal.....	25
3.17	Time Limits for Degree	25
3.18	Leave of Absence	25
3.19	Academic Integrity	26
3.20	Computing Lab	26
3.21	Publication Policy	27
3.22	Changing Program Area or Degree	27
	APPENDIX: GRADUATE STUDENT FORMS	28

1. General Information

1.1 Introduction

This manual is a reference for students pursuing graduate degrees in the Department of Civil, Structural and Environmental Engineering (CSEE) and for their faculty advisors. Different degree programs in CSEE and their requirements are described in Chapter 2. Additional policies and procedures applicable to all CSEE graduate students are described in Chapter 3.

Some of the requirements given in this manual may be different (likely more rigorous) than those given in other University at Buffalo (UB), School of Engineering and Applied Sciences (SEAS), and/or Graduate School documents. Students are encouraged to review those documents as well. However, in case of conflicting requirements, the most rigorous requirements must be satisfied. A student who wishes to petition for a waiver from any of the policies and procedures presented in this manual should consult with their advisor first and then get an approval for the waiver from the Director of Graduate Studies (DGS).

Additional information of interest to graduate students can be found at the following weblinks in Table 1.1.

Table 1.1: Useful weblinks

Title	URL
UB Homepage	https://www.buffalo.edu
SEAS: Graduate Education	https://engineering.buffalo.edu/home/academics/grad.html
Graduate School: Homepage	https://www.grad.buffalo.edu
Graduate School: Policy Library	https://grad.buffalo.edu/succeed/current-students/policy-library.html
Graduate School: Fellowships & Scholarships	https://grad.buffalo.edu/explore/funding/fellowships.html
CSEE graduate courses	https://engineering.buffalo.edu/civil-structural-environmental/graduate/courses.html
Student Code of Conduct	https://www.buffalo.edu/studentlife/life-on-campus/community/rules.html#studentcode
Student Life Gateway	https://www.buffalo.edu/studentlife.html
International Student Services	https://www.buffalo.edu/international-student-services.html

1.2 Initial Advisement and Course Registration

Graduate studies require frequent interactions between a student, their academic advisor, and other faculty members. To initiate this process, each student is assigned a *preliminary advisor* upon admission. The preliminary advisor will: (1) work with the student to decide coursework that should be taken during the first semester of graduate study (or until the student finds a research advisor), (2) assist with general questions a student may have about the program, including research opportunities, and (3) help the student identify a *research advisor*, if the student opts for a project, thesis, or dissertation. For students pursuing an M.S. degree with the all-course option, the preliminary advisor will normally be the advisor for the duration of the student's graduate program. The students pursuing an M.S. degree with a project, thesis, or dissertation (see Section 2.2.2 for further details) must identify a *research advisor* (need not be the same person as the preliminary advisor), who will supervise their work. All students may seek additional advisement regarding financial assistance and non-curricular matters, such as health, housing, and deficiencies in English comprehension, speaking, and/or writing.

All incoming graduate students must report to the CSEE Graduate Academic Coordinator (GAC) in 212 Ketter Hall at least one week prior to the first day of classes. The Graduate Academic Coordinator is the central resource for all administrative issues related to graduate studies. Timely communication is key to starting the program successfully. All incoming international students must also report to the International Student Services office in Talbert Hall for assistance with housing, visa status, and orientation before reporting to the department. All incoming students must attend the school-wide SEAS graduate orientation and the CSEE Department graduate orientation, which provides a general overview of Departmental policies and procedures. Both orientations are typically held during the week before the beginning of the Fall and Spring semesters. All incoming students are advised to meet with their preliminary advisors before the start of their first semester at UB.

2. Graduate Programs and Degree Requirements

2.1 Degree Options and Program Concentrations

The CSEE Department currently offers Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) graduate degrees in Civil Engineering and in Environmental and Water Resources Engineering (EWRE).

All **Civil Engineering** graduate students (M.S. and Ph.D.) are required to identify one of the following *program concentrations* at the time of application and admission:

- Bridge Engineering (M.S. only)
- Computational Engineering Mechanics
- Environmental and Water Resources Engineering (Ph.D. only)
- Geosystems Engineering
- Structural and Earthquake Engineering
- Transportation Systems Engineering

For civil engineering degrees, selection of a program concentration has two implications: (1) course requirements are different for each program concentration (see Section 2.2.1), and (2) the title of the program concentration will appear on the student's transcript. The default program concentration of all **EWRE** graduate students (M.S. and Ph.D.) is EWRE, but they can opt for any of the Civil Engineering program concentrations noted above.

In addition to the conventional degree programs (M.S. and Ph.D.), the CSEE department offers an Advanced Certificate in Bridge Engineering (details in Section 2.4).

2.2 Master of Science Program

Both the Civil Engineering and EWRE M.S. degree programs consist of *coursework* (Section 2.2.1) and a *culminating experience* (Section 2.2.2) as detailed below. A minimum of 30 credit hours must be completed to attain the M.S. degree.

2.2.1 Coursework

The coursework for each of the six program concentrations (defined in Section 2.1) consists of *required* courses and approved *elective* courses, as listed in Tables 2.1 to 2.6. All graduate students must complete the two required courses in their respective program concentrations. In addition, students should select courses from the list of approved elective courses in their respective program concentration to meet the minimum 30 credit hours M.S. degree requirement. Additional conditions related to the coursework are as follows:

- At most two courses not listed in Tables 2.1 to 2.6 may be considered as electives to satisfy the M.S. degree requirements, but approvals from the student's advisor and DGS are required for such considerations.
- Although some of the program concentrations list multiple non-CSEE courses as approved electives in Tables 2.1 to 2.6, no more than three such electives can be used to satisfy the M.S. degree requirements. In exceptional cases, students wishing to take more than three non-CSEE courses as electives should submit a formal request to their advisor and DGS, including the CSEE [Graduate Advisement Form](#) available from the

GAC. Approval of such requests is not guaranteed, and it will depend upon a review of the student's entire coursework.

- For some of the required courses, a student must select between multiple courses which are separated by "or" in Tables 2.1 to 2.6. For example, in Table 2.1, the first required course is either CIE 579 or CIE 580. If a student takes both these courses, only one of these will be counted as a *required* course and the other course will be counted as an *elective* course.
- The courses listed in Tables 2.1 to 2.6 are not taught every semester or year. It is the student's responsibility, with the help and approval of their advisor, to develop a plan of study that considers course scheduling in various semesters.
- A maximum of 6 credit hours of previous graduate level coursework completed outside of UB can be transferred towards the M.S. degree requirements (also see Section 3.2 for policies regarding transferring courses). All transfer credits are subject to approval by the student's advisor, the DGS, and the Graduate School. A required course can be transferred only if the student can demonstrate that they have already taken an equivalent course before entering UB.
- In addition to the approved elective courses, students may include up to 6 credits of Individual Problem course (IP: CIE 501/502) and/or Internship (see Section 3.4) to meet the 30 credit hours requirement for the M.S. degree. To register for an IP course, the student must complete an *Informal Course Form* (available from the GAC) that summarizes the scope, objectives, deliverables, and meeting schedule for the class. This form needs approvals from the faculty instructor of the IP course and the DGS. Although any number of credits (up to 6 credits for an M.S. student) can be assigned to an IP course, typically 3 credits are assigned to an IP course equivalent to a standard graduate course.

With the exceptions noted below, all courses counted toward the M.S. degree, including IP courses, must be evaluated with a non-S/U letter grade. Exceptions include project, thesis, and internship credits, which are graded as either satisfactory (S) or unsatisfactory (U) with no effect on a student's Grade Point Average (GPA). All graduate students must maintain a GPA of at least 3.0 throughout their degree program.

Brief descriptions of all the required and elective courses listed in Tables 2.1 to 2.6 below can be found on the [CSEE website](#) or, in case of a non-CSEE class, on the website of the corresponding Department. The class schedules can be found online via a student's HUB account or through the website of the UB registrar.

Table 2.1: M.S. in Civil Engineering with concentration in Bridge Engineering

REQUIRED COURSES	CIE 579 Bridge and Highway Infrastructure Management and Public Policy or CIE 580 Emerging Technologies in Bridge Engineering (C)**
	CIE 584 Design of Steel Highway Bridges (C) or CIE 585 Design of Prestressed Concrete Highway Bridges (C)
APPROVED ELECTIVE COURSES*	CIE 500 Industrial Ecology CIE 511 Advanced Mechanics of Solids CIE 512 Structural Reliability and Safety (C) CIE 514 Introduction to Advanced Mechanics and Mathematics CIE 515 Advanced Structural Analysis CIE 516 Advanced Mathematics for Civil Engineers CIE 519 Structural Dynamics and Earthquake Engineering I (C) CIE 522 Design of Structures for Fire (C) CIE 524 Steel Structures CIE 525 Concrete Structures (C) CIE 526 Finite Element Structural Analysis CIE 530 Mech Behavior of Materials CIE 533 Advanced Foundation Design CIE 534 Earthquake Engineering and Foundation Dynamics (C) CIE 561 Wind Engineering and Turbulent Flow (C) CIE 572 Advanced Concrete Materials (C) CIE 617 Advanced Finite Element Analysis CIE 619 Structural Dynamics and Earthquake Engineering II CIE 625 Seismic Base Isolation (C) EAS 521 Principles of Engineering Management

* Prior approvals from CSEE faculty advisor and DGS are needed for taking a course not listed here as an approved elective for meeting the degree requirements.

** (C) = Approved elective course for Advanced Certificate in Bridge Engineering (see Section 2.4)

Table 2.2: M.S. and Ph.D. in Civil Engineering with concentration in Computational Engineering Mechanics

REQUIRED COURSES	CIE 511 Advanced Mechanics of Solids or CIE 546 Environmental Fluid Mechanics
	CIE 516 Advanced Mathematics for Civil Engineers
APPROVED ELECTIVE COURSES*	CIE 512 Structural Reliability and Safety CIE 513 Stability CIE 515 Advanced Structural Analysis CIE 520 Random Vibrations and Stochastic Structural Dynamics CIE 526 Finite Element Structural Analysis CIE 530 Mechanical Behavior of Materials CIE 617 Advanced Finite Element Analysis CIE 618 Blast Engineering CIE 623 Plastic Behavior of Materials MAE 550 Optimization in Engineering Design MAE 555 Continuum Mechanics MAE 562 Analytical Dynamics MAE 567 Vibration and Shock 1 MAE 568 Vibration and Shock 2 MAE 609 High Performance Computing 1 MAE 610 High Performance Computing 2 MTH 537 Intro to Numerical Analysis 1 MTH 538 Intro to Numerical Analysis 2

* Prior approvals from CSEE faculty advisor and DGS are required for: (1) taking a course not listed here as an approved elective for meeting the degree requirements, and (2) taking a total (over all semesters of study) of more than three approved electives from outside CSEE (any course without CIE prefix).

Table 2.3: M.S. and Ph.D. in Environmental and Water Resources and Ph.D. in Civil Engineering with a concentration in Environmental and Water Resources Engineering

REQUIRED COURSES	CIE 532 Statistical Methods in Environmental and Water Resources Engineering
	CIE 546 Environmental Fluid Mechanics
	or
	CIE 562 Environmental Fate and Transport of Pollutants
APPROVED ELECTIVE COURSES*	or
	CIE 556 Physical and Chemical Processes for Water Reuse
	CIE 500 Ethics of Engineering Sustainability
	CIE 500 Industrial Ecology
	CIE 500 Waste Management
	CIE 500 Economics of Engineering Sustainability
	CIE 500 Sustainable Development
	CIE 541 Groundwater Engineering
	CIE 543 Water Quality Modeling
	CIE 550 Hydrologic Engineering
	CIE 563 Air Pollution
	CIE 564 Chemical Principles in Environmental Engineering
	CIE 565 Biological Principles in Environmental Engineering
	CIE 569 Brownfield Restoration
	CSE 503 Computer Science for Nonmajors
	EAS 521 Principles of Engineering Management
	EE 571 Sustainable Energy
	EEH 521 Global Health
	EEH 550 Environmental Health
	EEH 575 Epidemiologic Applications to Environmental Health
	END 578 Environmental Planning Methods for Sustainability
	GEO 506 GIS
	GEO 515 Conservation Biogeography
	GEO 548 Stream Restoration
	GEO 553 Remote Sensing
	GEO 549 Fluvial Geomorphology
	GEO 559 GIS for Environmental Modeling
	GEO 561 Ecohydrology
	GEO 575 GIS Data Science Project Management
	GEO 570 Integrated Environmental Management
	GLY 514 Hydrogeology
	GLY 530 Applied Groundwater Flow Modeling
	GLY 560 GIS for Earth Scientists
	GLY 562 Aqueous Geochemistry
	GLY 565 Environmental Remote Sensing
	IE 507 Design and Analysis of Experiments
	MAE 519 Turbulent Flow
	MAE 550 Optimization in Engineering Design
	MTH 537 Intro to Numerical Analysis
	MTH 538 Intro to Numerical Analysis 2
	GEO 642 Land, Law, and the Environment
	PMY 626 Toxicology Principles and Practice

* Prior approvals from CSEE faculty advisor and DGS are required for: (1) taking a course not listed here as an approved elective for meeting the degree requirements, and (2) taking a total (over all semesters of study) of more than three approved electives from outside CSEE (any course without CIE prefix).

Table 2.4(a): M.S. in Civil Engineering with concentration in Geosystems Engineering

REQUIRED COURSES	CIE 514 Introduction to Advanced Mechanics and Mathematics
	CIE 530 Mechanical Behavior of Materials or CIE 533 Advanced Foundation Design
APPROVED ELECTIVE COURSES*	CIE 512 Structural Reliability and Safety CIE 519 Structural Dynamics and Earthquake Engineering I CIE 526 Finite Element Structural Analysis CIE 529 Pavement Materials and Design CIE 531 Design and Construction of Earth Structures CIE 534 Earthquake Engineering and Foundation Dynamics CIE 541 Groundwater Engineering CIE 623 Plastic Behavior of Materials CIE 630 Geotechnical In-situ and Lab Testing GEO 506 GIS GEO 519 Transportation GEO 520 Transportation and Spatial Information

Table 2.4(b): Ph.D. in Civil Engineering with concentration in Geosystems Engineering

REQUIRED COURSES	CIE 511 Advanced Mechanics of Solids or CIE 530 Mechanical Behavior of Materials
	CIE 516 Advanced Mathematics for Civil Engineers
	CIE 512 Structural Reliability and Safety CIE 519 Structural Dynamics and Earthquake Engineering I CIE 526 Finite Element Structural Analysis CIE 529 Pavement Materials and Design CIE 531 Design and Construction of Earth Structures CIE 533 Advanced Foundation Design CIE 534 Earthquake Engineering and Foundation Dynamics CIE 541 Groundwater Engineering CIE 623 Plastic Behavior of Materials CIE 630 Geotechnical In-situ and Lab Testing GEO 506 GIS GEO 519 Transportation GEO 520 Transportation and Spatial Information
APPROVED ELECTIVE COURSES*	

* Prior approvals from CSEE faculty advisor and DGS are required for: (1) taking a course not listed here as an approved elective for meeting the degree requirements, and (2) taking a total (over all semesters of study) of more than three approved electives from outside CSEE (any course without CIE prefix).

Table 2.5(a): M.S. in Civil Engineering with concentration in Structural and Earthquake Engineering

REQUIRED COURSES	CIE 514 Introduction to Advanced Mechanics and Mathematics
	CIE 515 Advanced Structural Analysis or CIE 519 Structural Dynamics and Earthquake Engineering I
APPROVED ELECTIVE COURSES*	Same as the approved elective courses in Table 2.5(b)

Table 2.5(b): Ph.D. in Civil Engineering with concentration in Structural and Earthquake Engineering

REQUIRED COURSES	CIE 511 Advanced Mechanics of Solids or CIE 530 Mechanical Behavior of Materials CIE 516 Advanced Mathematics for Civil Engineers
	CIE 512 Structural Reliability and Safety CIE 513 Stability CIE 515 Advanced Structural Analysis CIE 518 Masonry Design CIE 519 Structural Dynamics and Earthquake Engineering I CIE 521 Plastic Analysis and Design CIE 522 Design of Structures for Fire CIE 524 Steel Structures CIE 525 Concrete Structures CIE 526 Finite Element Structural Analysis CIE 533 Advanced Foundation Design CIE 534 Earthquake Engineering and Foundation Dynamics CIE 561 Wind Engineering and Turbulent Flow CIE 572 Advanced Concrete Materials CIE 580 Emerging Technologies in Bridge Engineering CIE 584 Design of Steel Highway Bridges CIE 585 Design of Prestressed Concrete Highway Bridges CIE 616 Experimental Mechanics in Structural Engineering CIE 617 Advanced Finite Element Analysis CIE 618 Blast Engineering CIE 619 Structural Dynamics and Earthquake Engineering II CIE 623 Plastic Behavior of Materials CIE 625 Aseismic Base Isolation EAS 521 Principles of Engineering Management
APPROVED ELECTIVE COURSES*	

* Prior approvals from CSEE faculty advisor and DGS are needed for taking a course not listed here as an approved elective for meeting the degree requirements.

Table 2.6: M.S. and Ph.D. in Civil Engineering with a concentration in Transportation Systems Engineering

REQUIRED COURSES	CIE 536 Traffic Operations and Design <i>or</i> CIE 539 Travel Demand Forecasting
	CIE 574 Traffic Safety <i>or</i> CIE 633 Statistical and Econometric Methods
APPROVED ELECTIVE COURSES*	CIE 500 Sustainability in Transportation CIE 500 Transportation Network Analysis I CIE 538 Advanced Transportation Systems Analysis CIE 579 Bridge and Highway Infrastructure Management and Public Policy CIE 631 Transportation Network Analysis II CSE 503 Computer Science for Non Majors CSE 515 Parallel Computing CSE 555 Introduction to Pattern Recognition CSE 574 Introduction to Machine Learning STL 520 Emerging Practices in Transportation Planning, Technology, and Policy STL 544 Strategic Urban Transportation Planning for Sustainable Futures ECO 521 Urban Economics ECO 580 Econometrics 1 GEO 506 Geographical Information Systems GEO 519 Transportation GEO 520 Transportation and Spatial Information GEO 605 Spatial Statistics IE 504 Facilities Design IE 507 Design and Analysis of Experiments IE 511 Social Network Behavior Models IE 512 Decision Analysis IE 531 Introduction to Human Factors IE 535 Human Centered Design for Interactive Systems IE 550 Introduction to Operations Research IE 551 Simulation and Stochastic Methods IE 555 Programming for Analytics IE 572 Linear Programming IE 573 Discrete Optimization IE 575 Stochastic Methods IE 576 Applied Stochastic Processes IE 581 e-Business & Supply Chain Management IE 677 Network Optimization IE 678 Urban Operations Research MGO 636 Supply Chain Analytics MGO 638 Logistics Management URP 562 Transportation, Land Use & Urban Form URP 571 Smart Cities: 3D Visualization & Urban Simulation STA 545 Statistical Data Mining I STA 546 Statistical Data Mining II

* Prior approvals from CSEE faculty advisor and DGS are required for: (1) taking a course not listed here as an approved elective for meeting the degree requirements, and (2) taking a total (over all semesters of study) of more than three approved electives from outside CSEE (any course without CIE prefix).

2.2.2 Culminating Experience

There are three options available for completing the M.S. degree's culminating experience requirement, as shown in Table 2.7. The *all-course* option requires 30 credit hours of coursework and a comprehensive exam. This is the default option for all incoming M.S. students. Instead of the comprehensive exam, a student may choose a research *project* or a *thesis* as the culminating experience with the approval of their advisor. In these cases, it is the responsibility of the student to identify a research advisor for supervising their project or thesis work. Requirements for the comprehensive examination, thesis, and project are outlined below.

Table 2.7: M.S. Degree Culminating Experience Options

Option	Minimum Credit Hours* of Approved Coursework	Culminating Experience	Estimated Time to Completion**
All-course	30	Comprehensive examination	2-3 semesters
Project	27	3 credits M.S. project report and optional presentation	3-4 semesters
Thesis	24	6 credits M.S. thesis and defense	3-4 semesters

* 1 graduate course is typically 3 credit hours

** Times are approximate, based on previous experience.

Comprehensive Examination (CE) for the All-course Option: This is the most selected culminating experience, which allows the students to advance their knowledge in a program concentration through courses only. This option is normally the fastest path to the M.S. degree. At the start of their final semester, students are required to register for the CE with the GAC. Near the middle of their final semester, students are asked to select an article from a list of papers provided by faculty members in their respective program concentrations. Students perform a critical review of this article utilizing the knowledge gained through the graduate coursework. The review is typically due in the last two weeks of the student's final semester. The reviews are graded pass/fail by the faculty member who provided the paper, based on the technical merit and writing quality of the review. If a student does not pass this exercise, they are given an opportunity to improve their review based on the faculty feedback and resubmit their review. If the resubmission also receives a fail grade, the student cannot graduate in that semester and the CE is repeated in the following semester. If a student fails the CE in two semesters, they may be dismissed without a degree.

M.S. Project: The M.S. Project (3 credits) provides an opportunity for students to work on an applied problem in their field of study without an extensive research component. The project is typically completed during a student's final semester. The students must register for the course titled "Engineering Project" (CIE 557 in Fall or CIE 558 in Spring) with the GAC at the start of the semester in which they undertake the project. Registration includes submitting the [Engineering Project form](#), which requires approval from the CSEE faculty supervisor (student's research advisor) of the project along with the project's scope.

A student's work is evaluated based on a final project report. Additionally, an oral presentation may be included as part of the evaluation process at the discretion of the faculty advisor. The M.S. project report is submitted to the student's advisor who has the sole responsibility for its review, revision, and acceptance. A second reader of the M.S. project report may be assigned at the discretion of the faculty advisor. Faculty readers and oral presentation requirements should be determined at the beginning of the semester during which the project is completed. The M.S. Project is graded as Satisfactory/Unsatisfactory (S/U), which has no effect on the student's GPA.

M.S. Thesis: The M.S. thesis (6-credit) provides a substantial research experience for students wishing to engage in original data collection and/or analysis. The students must register for the course titled "Thesis" (CIE 559 in Fall or CIE 560 in Spring) with the GAC at the start of the semester in which they begin their research. The registration requires filling out a graduate advisement form, which requires approval from the CSEE faculty supervisor (student's research advisor) for the thesis.

The M.S. thesis must be defended before an open audience and the student's M.S. thesis committee, which consists of the student's advisor and at least one other CSEE faculty member. Once the thesis is ready for defense, a departmental announcement must be circulated one week prior to the defense. The defense consists of an oral presentation open to the public, followed by a closed session with more in-depth questions by the student's thesis committee. After the defense, the committee determines whether the student has successfully defended the thesis or if additional work is required. After successfully completing the thesis defense, (1) the student must submit an electronic copy of the thesis to the Graduate School, and (2) the student's advisor must submit the "M-form" that documents the completion of all degree requirements to the GAC. The M.S. Thesis is graded Satisfactory/Unsatisfactory (S/U) and is not included in the student's GPA calculation.

Final thesis formatting should be determined in consultation with the student's advisor and committee. The Graduate School accepts any self-consistent thesis format that follows the conventions of a recognized discipline, subject to the [Required Format for Electronic Thesis & Dissertation](#).

2.2.3 Faculty Advisors for M.S. Project and Thesis

All M.S. students opting for a project or thesis as the culminating experience must determine a research advisor who has agreed to supervise their project/thesis research. Typically, this arrangement is finalized no later than the end of the second semester of full-time study. The research advisor must be a member of the [UB Graduate Faculty](#), (all CSEE Assistant, Associate, and Full Professors are members of the Graduate Faculty). After a research advisor is determined, the student is required to consult with them for selecting courses and conducting research for each remaining semester. For the M.S. thesis, the student must also form a thesis committee in consultation with their research advisor. The thesis committee is chaired by the student's research advisor, and it must include at least one other CSEE faculty member.

2.2.4 *Graduation and Degree Conferral*

Every semester, all graduate students will receive instructions from the GAC for initiating the degree conferral process, along with the M.S. Culminating Experience Selection Form. The students wishing to graduate at the end of a given semester should submit the form to the GAC. Simultaneously, all students must apply to graduate through their HUB Student Center by the deadline for that semester posted on the [Graduate School website](#). Any subsequent changes to the anticipated conferral term must be communicated via email to the GAC and by submitting the [Form to Update Expected Graduation Term](#) to the UB Registrar at the earliest possible moment. Changes submitted after the deadline given in the degree conferral instructions could result in a delay. Prior to CSEE approval for graduation, each student must cleanup any lab and office space (including desk) used by them.

In addition to the above requirements, each student and/or faculty advisor must document completion of the culminating experience as described in Section 2.2.2.

2.3 **Doctor of Philosophy Program**

The Doctor of Philosophy (Ph.D.) program emphasizes original research in a specialized area and includes a dissertation that exhibits a high level of independent scholarship. Attaining a Ph.D. degree in either Civil Engineering or EWRE requires successful completion of all the following:

- Graduate coursework (Section 2.3.1)
- Qualifying examination (Section 2.3.2)
- Dissertation and defense (Section 2.3.6)

Each student's doctoral program is guided primarily by a CSEE faculty member who serves as the student's Ph.D. advisor. This relationship is likely to begin from the time a student starts the Ph.D. program, but the Ph.D. advisor must be identified before the student takes the Qualifying Exam (see Section 2.3.2).

2.3.1 *Coursework*

The coursework for the Ph.D. degree should reflect a well-defined area of study and must be approved by the student's advisor. The required and elective courses for each program concentration are similar to the corresponding M.S. programs as listed in Tables 2.1 through 2.6. The student's advisor may require specific courses beyond those listed in these tables to support the planned research.

The Ph.D. degree requires a minimum of 72 credit hours beyond the bachelor's degree. This requirement must be met with a combination of course credits (associated with a typical graduate course) and research-related credits (typically associated with dissertation credits, individual problem, M.S. project or thesis). Depending on the student's background, research topic, and career goals, the number of course credits and research credits are flexible, but with the following constraints:

- A maximum of 36 credit hours of previous graduate level coursework can be transferred towards the Ph.D. degree (also see Section 3.2). All transfer credits are subject to approval by the student's advisor, the DGS, and the Graduate School.

- A minimum of 12 to a maximum of 30 credit hours of dissertation research (by registering in either CIE 659 in Fall or CIE 660 in Spring) can be counted toward the 72 credit hour requirement for the Ph.D. degree.
- Ph.D. students will not receive credit for repeating courses taken earlier for the M.S. degree at UB or for similar courses completed at other institutions.
- Depending on the number of available course credits, students may enroll in up to six credits of Individual Problems, which typically consists of an independent study or research project not included in the scope of the Ph.D. dissertation (see Section 3.5 for requirements).
- Regardless of the number of transfer and dissertation credits, students must take at least two regular courses (not Individual Problems) taught by a CSEE faculty member.

Three examples are provided below to illustrate the variety of pathways toward satisfying the Ph.D. coursework requirements:

- A student begins the Ph.D. program directly after completing a B.S. degree and wishes to take the minimum number of courses. The resulting program consists of 36 credits of coursework (typically 12 courses), 6 credits of individual problem, and 30 credits of dissertation.
- A student begins the Ph.D. program after completing a 36-credit M.S. degree and wishes to take the maximum number of research credits. The resulting program consists of 36 transfer credits (assuming all are approved), 30 dissertation credits (the maximum permitted), and 6 credits of coursework (typically 2 courses; must be taught by CSEE faculty and cannot be Individual Problems).
- A student begins the Ph.D. program after completing a 30-credit M.S. degree and chooses to take courses during the first year of doctoral study (e.g., 3 courses/semester). The resulting program consists of 30 transfer credits (assuming all are approved), 18 credits of coursework, and 24 dissertation credits.

The above examples are provided only to illustrate the program's flexibility. In all cases, the final configuration of transfer, coursework, and dissertation credits must be approved by the student's advisor and the DGS. Students should consult with their advisor prior to registering for courses.

2.3.2 Qualifying Examination

All students must successfully complete the Qualifying Examination (QE) to advance to the status of *Ph.D. candidate*. The goal of the QE is to judge the academic fitness of a student to perform independent research in their field of study. The following prerequisites must be satisfied before registering a student for the QE:

- A CSEE faculty member (with primary appointment in CSEE), who is a member of the [UB Graduate Faculty](#) and has agreed to serve as the student's advisor for their doctoral research, must be identified.
- The student has a minimum grade point average of 3.4.
- A student, who entered the Ph.D. program with a prior master's degree, should be within the first three semesters of their Ph.D. program at the time of taking the first attempt of the QE. A student, who entered the Ph.D. program without a prior master's degree (with

only a bachelor's degree), should be within the first four semesters of their Ph.D. program at the time of taking the first attempt of the QE.

If the above perquisites are met, a Ph.D. QE committee (need not be the same as the dissertation committee described in Section 2.3.4) of at least three faculty members shall be proposed for each student by their advisor. At least two members of the QE committee, including the student's advisor, shall be both CSEE faculty and members of the [UB Graduate Faculty](#). The QE committee must include at least one faculty member with primary research interests that are different from those of the student's advisor. The student's advisor shall communicate the proposed membership of the QE committee to the DGS or the Department Chair (DC) for their approval. The DGS or the DC will then assign a chair for the QE committee, who must be tenured in CSEE and should be knowledgeable in the student's research area. The QE committee chair cannot be the student's advisor. All the above steps including the formation and approval of the QE committee and assignment of the committee chair must be completed no less than one month prior to the start of the QE.

The QE shall be composed of two parts: 1) a one-week take-home written examination, with a minimum of three questions posed by members of the committee, and 2) an oral examination to be held within 14 days of submission of the solution to the written examination. Both parts of the examination shall address topics relevant to the student's field of research. The oral examination may include questions relating to the student's solutions to the written examination, completed coursework, research area, and/or research-related skills. Additionally, as part of the oral examination, the student could be asked to make a presentation on their research completed to date if the QE committee chair deems it necessary for judging the student's ability to conduct independent research.

Toward the end of the examination, the QE committee chair shall poll each member of the committee on the ability of the student to perform independent research at the Ph.D. level and develop a consensus opinion. The QE committee chair shall communicate the outcome (pass or fail, recommendations for supplemental study) of the examination to the student, DGS, and GAC.

If a student fails the QE on the first attempt, they can retake the examination with the concurrence of the student's advisor, but they must do so within six months of the first attempt. Barring any extraordinary circumstances (as determined by the DC), a student will not be allowed to take the QE more than two times. Failing the QE twice could result in dismissal from the Ph.D. program.

2.3.3 *Application to Candidacy*

Upon successful completion of the QE, a student should immediately submit the [Application to Candidacy \(ATC\) form](#) to the GAC for advancing to the status of a *Ph.D. Candidate*. The Ph.D. candidacy allows a student to work mainly on their doctoral research and register for as little as one credit hour per semester to maintain a full-time student status (also see Section 3.1) at UB.

In conjunction with the ATC form, all Ph.D. students are required to document successful completion of "Responsible Conduct of Research" (RCR) training. This training requirement may be fulfilled by completing the Collaborative Institutional Training Initiative (CITI) Online

Program in Responsible Conduct of Research with a score of 80% or higher. Current details regarding this requirement, as well as alternative ways of satisfying it, are summarized in the online [Graduate School Policies](#) (scroll down and click on Responsible Conduct of Research (RCR) Training Requirement).

Ph.D. students use the [Application to Candidacy \(ATC\) form](#) to submit their plan for graduation. This form serves as a useful planning document for the student and their dissertation committee. The ATC form indicates the student's intended degree conferral date, a plan for taking future credits, and the method for fulfilling the RCR training requirement. As mentioned above, submission of the ATC form immediately after the successful completion of the QE is highly recommended. The ATC must be submitted at least three months prior to the expected degree conferral date (notified every semester by the GAC). An approved ATC must be filed along with a [Certification of Full-Time Status Form](#) to maintain full-time student status (also see Section 3.1) with registered credits below 12 credit hours or 9 credit hours with a TA/RA appointment.

Amendments to an already filed ATC form may be made with the approval of the advisor and DGS using the [Amend ATC form](#) available from the Graduate School. Amendments may include a change of expected conferral date, adding a committee member, a change in course credits planned, etc.

2.3.4 Dissertation Committee

In addition to the advisor, students pursuing a Ph.D. degree are guided by their dissertation committee, who supervises and evaluates the Ph.D. research and dissertation. Except for the student's advisor, members of the dissertation committee can be different from those of the QE committee. Typically, the dissertation committee is formed, in consultation with the advisor, after a student completes the Qualifying Exam. The "core" of this committee must include the student's advisor (who must be a CSEE faculty member) and at least two additional UB faculty members, out of which, one must have a primary appointment in CSEE. All the three core committee members must also be full (not Associate) members of the [UB Graduate Faculty](#). If a student has two primary dissertation advisors (co-advisors), the committee must include a total of four core committee members.

Additional committee members with expertise in the dissertation research can be included. These can include UB faculty members from CSEE and other Departments, faculty members from other Universities, and industry representatives.

2.3.5 Dissertation Proposal

In consultation with their dissertation committee, each Ph.D. student should develop a dissertation proposal, which must be formally defended within one year of completing the QE. The scope and format of the dissertation proposal are flexible, as determined by the student's dissertation committee. A typical process would include preparation of a written document by the student, an oral presentation of the planned dissertation research, and an open-ended question/answer session. The presentations might be closed-door sessions or open to the public, depending on the advisor's preference. The student's advisor will notify the DGS by email when a student has successfully completed the dissertation proposal and defense.

2.3.6 Dissertation and Defense

Upon satisfactory completion of the qualifying examination and acceptance of a Ph.D. dissertation proposal, the student should have a clear idea of the direction and expected end point for completing the dissertation research. The research is documented in a written dissertation that represents a relevant, original, and substantial contribution to the state of knowledge in the candidate's area of concentration. Following completion of the draft document, the dissertation must be defended, which includes a public presentation by the candidate, an open session for questioning by the audience and committee members, and a closed session for additional questions by the committee members. Students are required to provide their completed dissertation to their dissertation committee at least two weeks before their scheduled defense. Successful defense indicates that the dissertation committee is satisfied with the dissertation document and the student's understanding of the material related to and contained in the dissertation.

General announcements for Ph.D. dissertation defenses must be posted in Ketter/Jarvis Hall(s) at least one week prior to the defense and should also be distributed electronically to all CSEE faculty and graduate students, with assistance from the GAC. All CSEE faculty members, graduate students, and interested guests are invited to attend the public portion of the defense.

After successfully completing the dissertation defense, the candidate must submit to the Graduate School a digital copy of the dissertation. The Graduate School will accept any self-consistent dissertation format that follows the conventions of a recognized academic discipline, with some general formatting standards as outlined in the [Electronic Thesis and Dissertation \(ETD\) Guidelines](#). After the final dissertation has been uploaded to the Graduate School, a completed and signed (by advisor and committee) [M-Form](#) must be submitted to the GAC.

2.3.7 Mid-program Evaluations

All Ph.D. students are required to submit an annual progress report by May 31 every year. Normally, the process is initiated by the Ph.D. advisor, but it is the student's responsibility to ensure that the form is submitted on time to the GAC. Submission of the progress report is not required if the student graduates in the same academic year. The form for the progress report is emailed to students and faculty during the Spring semester.

TA evaluation forms (for teaching assistants only) must be filled out every semester during which a student serves as a TA. Normally, the process is initiated by the course instructor, but it is the student's responsibility to ensure that the form is submitted before the semester's end to the GAC.

2.3.8 Degree Conferral

Prior to each degree conferral deadline, students will receive instructions for initiating the graduation process. Per the instructions and deadlines provided, Ph.D. students should inform the GAC via an email, copied to the advisor, their expected conferral date (February 1, June 1, or August 31). Other relevant information is contained in the ATC form (Section 2.3.3).

The following steps are required for final degree conferral:

- Submission of the [M-form](#) to the GAC indicating successful completion of the dissertation defense and faculty approval of the final dissertation document.
- Submission of the final dissertation to the Graduate School via the [ETD administrator website](#). Students should review the current [Graduate School dissertation requirements](#) prior to submission.
- Completion of the SEAS *Exit Survey*. Data collected in this survey are used to evaluate program strengths and areas needing improvement, employment benchmarking, and student evaluation of their graduate experiences at UB.
- Cleaning up of all the lab and office spaces used by the student and returning relevant room keys to the GAC.
- Completion of any additional student surveys required by the UB Graduate School (currently, two [doctoral degree recipient surveys](#)).
- If applicable, completion of an [embargo form](#) to delay the public release of the dissertation.

2.4 Advanced Certificate in Bridge Engineering

The Advanced Certificate in Bridge Engineering program requires completion of four courses, including CIE 579 (required course) and three elective courses. The courses approved as electives for the Advanced Certificate are given in Table 2.1 and indicated with the mark “(C)” at the end of the course titles. Course not marked with a “(C)” may be taken when offered to satisfy the requirements of Advanced Certificate with approval from the DGS. Some of these courses are offered online for off-campus students, in addition to the in-person format for on-campus students. The courses offered online during the current and upcoming semesters are listed at this [link](#). Both full-time and part-time students can apply for the Advanced Certificate. Further details about the program and application process are available at this [link](#).

3. Additional Graduate Policies and Procedures

3.1 Continuous Registration, Full-time Status, and Residency

- All CSEE graduate students, except for those in the advanced certificate program, must maintain continuous registration for a minimum of one credit hour in Fall and Spring semesters until degree conferral. If such registration is impossible, a student may request a formal leave of absence, which must be approved by the DGS and the Graduate School.
- Under certain circumstances, including immigration requirements (for international students) and financial aid or scholarship regulations, students need to maintain *full-time* status. Full-time status is defined as registration for a minimum of 12 credit hours during every fall and spring semester, or a minimum of 9 credit hours if the student holds a graduate, teaching, or research assistantship. These definitions are used by agencies/organizations such as lending institutions, health insurance carriers, and the U.S. Citizenship and Immigration Service. Per immigration regulations, [international students must maintain full time status](#) according to the above definitions during their entire period of graduate study at UB, subject to the three exceptions noted below.
 1. For students in their first semester of study it is possible to petition the International Student Services office for a reduced course load (typically 9 credits instead of 12). This reduction allows students to better address cultural, language, or other transition issues, and is available only once.
 2. Students who have completed or will complete all their credits in the current semester may request designation of full-time status by completing a [Certification of Full-Time Status Form](#) when registering for fewer than 12 credits (or fewer than 9 credits with assistantship). This scenario is primarily applicable to students working on a thesis or dissertation. Typically, full-time status will be granted for one semester only. For example, students in an all-course M.S. program with 6 credits remaining to fulfill degree requirements cannot distribute those credits into two semesters.
 3. The [Certification of Full-Time Status Form](#) requires approval of the student's advisor and the DGS. For Ph.D. students, an [Application to Candidacy form](#) (Section 2.3.3) must be submitted before full-time status can be approved.
- Ph.D. degree programs require a minimum residency of the equivalent of two complete academic years of full-time study at UB. This includes two semesters of continuous full-time study, which is not already applied toward a master's degree.

3.2 Transfer of Credits Taken at Other Universities

- A maximum of 6 transfer credits of graduate course work completed outside of UB may be applied toward the 30-credit requirement for the M.S. degree. This limit is increased to 9 credits for UB undergraduates who have taken UB graduate courses (see details in Section 3.7)
- A maximum of 36 transfer credits of graduate course work may be applied toward the 72-credit requirement for the Ph.D. degree.
- Only courses applicable to the relevant engineering degree can be transferred. Students should fill out the [Petition for Approval of Non-UB Transfer Credits](#). After obtaining the

faculty advisor's approval, the student should submit the form to the GAC for subsequent review and approval by the DGS and the Graduate School.

- Credit hours for required courses for a program concentration (given in Tables 2.1 to 2.6) can be transferred only if the student can demonstrate that they have already taken an equivalent course at another institution. This will require submitting the syllabus, method of evaluation, and other details as deemed necessary by the DGS and the Graduate School for evaluating the equivalence between the required course at UB and the equivalent course taken elsewhere.
- Only those graduate courses completed with grades of "B" or better are eligible for consideration as transfer credit. However, the grade of the transferred course will not be counted towards the student's UB grade point average.

3.3 Minimum Grades in Required Courses

Students must earn a grade of "B" or better in any course designated as "required" in their program concentration. Students who fail to obtain a grade of "B" in a required course have the following options:

- The student may retake the course in a subsequent semester, which is the most common resolution.
- If the required course has an alternative (designated by "or" in Tables 2.1 to 2.6), the student can attempt the alternative course and earn a grade of "B" or better in that course. In this scenario, the former course will be counted as an elective.
- In some cases, subject to the discretion of the instructor, the student can demonstrate mastery of the course material through an alternative means. For example, a student might be invited to audit part or whole of a subsequent version of the required course, including specified exams and/or assignments, without formally registering for the course. Such arrangements are available only if the instructor agrees and provides specific requirements for documenting content mastery. At the conclusion of the process, the instructor will communicate the results to the DGS, who may then agree to waive the "B or better" requirement.
- A student may petition to complete an alternative course (with a grade of "B" or better) to satisfy the requirement. However, such petitions are approved only when scheduling or financial constraints prevent a retake of the required class.

3.4 Informal Coursework: Internships

All CSEE graduate students are eligible to complete an *Internship* as part of their program of study. The internships typically take place during summer. An internship during an academic year would be considered only under the "continuation" scenario outlined below. During the internship period, the student must perform work related to their program concentration under the supervision of an external professional. The scope, location, and timing of the internship are flexible, and both paid and unpaid internships are eligible for academic credit.

Prior to commencing an internship, approvals by the student's advisor and the DGS are required. At the end of the grading period (or the internship), written documentation by the

internship sponsor must be submitted to the DGS. Additional requirements are summarized below:

- The student is responsible for securing arrangements with the internship sponsor. The scope and duration of an internship can vary, but the level of effort must be equivalent to a typical academic course that provides a comparable number of credit hours, and the work must primarily involve engineering tasks. Internships can be paid or unpaid. International students should consult with the International Student Services office to discuss authorization that is appropriate for their immigration status.
- Students can receive a maximum of 3 credits (typically in the summer session) for internships with the necessary approval from the faculty advisor and the DGS. Similar to other course credits, the student is responsible for the tuition and fee associated with the internship credits. It should be noted that CSEE policy limits the number of “informal” credits that can be counted toward a degree to 6 credits, which includes Individual Problem and Internship. Therefore, if a student receives x credits for an internship, they can enroll in only up to $(6 - x)$ credits for an Individual Problem course, and vice-versa.
- Students may sometimes enroll in a one-credit summer internship, which reduces the cost of summer tuition and fees. However, depending on other course selections, the one-credit internship may result in a program of study that exceeds the minimum credit requirements for the degree.
- Internship credits are graded Satisfactory/Unsatisfactory (S/U) and, therefore, do not contribute toward a student’s GPA.
- Registration for an internship is accomplished by submitting the relevant form to the GAC. The form includes the following information: internship sponsor with contact information, brief description (1-2 paragraphs) of the scope of work, salary status (paid/unpaid), start/end dates, and expected level of effort (hours/week). Duration/effort can vary, but for a three credit-hour internship, the duration should be similar to a UB 12-week summer session. The completed form for a summer internship must be submitted to the GAC no later than May 1 of the Spring semester preceding the internship.
- Registration for academic credit is required for international students who engage in a professional internship, regardless of salary status. In addition to Departmental approval, international students must secure approval for *Curricular Practical Training* (CPT) through International Student Services. As part of the CSEE approval process, the DGS or faculty advisor will complete the Academic Advisor’s Recommendation form as required by ISS. Please check the ISS deadlines for applying for CPT.
- Domestic students may engage in an internship without registering for academic credit, but prior approval and registration are required if the internship will be applied to satisfy degree requirements.
- At the completion of the internship, the sponsor must provide a letter to the DGS indicating that the scope of work specified in the registration form was completed at a satisfactory level. After reviewing the sponsor letter, the DGS will submit the appropriate S/U grade.
- Usually, an internship involves only a single summer experience. However, in some situations, the internship sponsor may request continuation of work during the Fall

semester (e.g., to complete an in-progress project). With completed summer internship and DGS approval, the student can enroll in one additional internship credit for the Fall semester, which, similar to the summer internship, will be graded Satisfactory/Unsatisfactory (S/U). To avoid generating “extra” credits beyond the minimum requirement (30 credit for M.S. and 72 credits for Ph.D.) for a degree, the student might consider limiting the summer internship to 2 credits (plus 1 credit in Fall, yielding a total of 3 internship credits) or combining the Fall’s 1-credit internship with a 2-credit Individual Problems (IP), as long as it falls within the 6 informal credits limit.

3.5 Informal Coursework: Individual Problems

Individual Problem (IP) courses do not have formal catalog descriptions and are taught by a special arrangement with an instructor. IP courses can be taken by M.S. and Ph.D. students, subject to the constraints outlined below and approval of the DGS. At the time of course registration, the student must complete a [form](#) that includes a short narrative of the content covered, means of evaluation, and instructor’s approval. All IP courses are graded with a letter grade (not S/U).

- A maximum of 6 credit hours of informal course work (internship or IP) may be applied toward the 30-credit hour requirement for the M.S. degree.
- Including those credits applied towards the M.S. degree, a maximum of 6 additional credit hours of IP course work may be applied towards the minimum 72 credit hour requirement for the Ph.D. degree.

3.6 Undergraduate Courses for Graduate Credit

Under certain circumstances, a student may take an undergraduate course for graduate credit, subject to the following conditions:

- Prior approval must be obtained by submitting a [petition](#) to the Office of the Registrar, which requires approvals from the student’s advisor, the DGS, and the course instructor. The petition must also include a clear statement from the instructor of the course regarding additional work that will be required to qualify for graduate credit. Retroactive approval will not be granted.
- Undergraduate courses must be at the 400 level to be considered for graduate credit.
- Undergraduate courses that carry 4 or more credit hours will receive a maximum of 3 credit hours of graduate credit.
- A maximum of two approved undergraduate courses (up to 6 credit hours) may be applied toward the M.S. or Ph.D. degrees.

3.7 Undergraduate Student Enrollment in Graduate Courses

Current UB undergraduate students may register for up to nine credit hours of graduate level coursework to count towards the graduate degree. Undergraduate students must have a cumulative GPA of at least 3.0 at the time of registering for a graduate course. Students must verify that the graduate course will meet the M.S. or Ph.D. degree requirements and receive a written approval from the course instructor. Students will need to complete the force registration form in the SEAS portal to register for graduate coursework. The GAC will

verify the student's GPA and receive approval from the CSEE Director of Undergraduate Studies before approving and forwarding the request to the Office of the Registrar to complete the enrollment process. Graduate coursework cannot be counted toward both undergraduate and graduate degrees. The student must decide whether a graduate course should be used to satisfy an undergraduate degree requirement or a graduate degree requirement.

3.8 Inapplicable Credits

The following types of courses cannot be used to satisfy the requirements for M.S. and Ph.D. degree programs:

- English Language Courses.
- Remedial courses taken to fulfill the department's admission requirements.

3.9 Grading Policy

- Satisfactory/Unsatisfactory (S/U) grading is applied to Internship, Thesis, Project, and Dissertation credits.
- All other courses, including Individual Problems and Special Topics, must be assigned letter grades: A, A-, B+, B, B-, C+, C, D, F1 (participated beyond 60% point of the class), F2 (participated but stopped prior to 60% point of the class), and F3 (never participated), carrying quality points of 4.0, 3.67, 3.33, 3.0, 2.67, 2.33, 2.0, 1.0, 0, 0, and 0, respectively. These are consistent with the [Graduate School's Policy](#) regarding weighted grades (scroll down on the above link and click on "Grades: Weighted").
- Incomplete (I) grade: The [Graduate School's Policy](#) regarding assignment of incomplete grade shall apply (scroll down on the above link and click on "Grades: Incomplete (I)").
- All the [Graduate School Policies](#) regarding grades shall apply to all graduate students.

3.10 Resigning from Courses

The [Graduate School's Policy](#) and the [UB registrar's policy](#) regarding resigning from courses and associated financial liabilities and transcript implications shall apply to all graduate students.

3.11 Repeating Courses

The current policy of the graduate school regarding repeating courses can be accessed at the Graduate School's [policy library weblink](#) (scroll down to "Repeating Courses").

3.12 Non-Matriculated Students

Students who hold a bachelor's degree in engineering or applied sciences are permitted to register for graduate coursework as a non-matriculated (non-degree student), up to a maximum of 12 credit hours. Applications for non-degree status are processed using the UB graduate admissions website (Application Management System) and subject to a similar review process as the degree programs. In some cases, students may petition for an expedited review process that does not include a full set of reference letters.

Students admitted to a non-degree status may enroll for up to 12 credit hours of CSEE coursework. Once the accumulated credits reach twelve hours, further registration is prohibited until the student is admitted into a graduate degree program. Students already enrolled via non-degree status follow the standard application process (starting with a fresh application) for admission to a degree program. Courses completed as a non-degree student may count toward satisfying a degree requirements only if they are approved for the program concentration in which the student is admitted.

3.13 Distance Learning

Each semester, a subset of CSEE graduate courses are offered by distance learning, typically taken by part-time and non-degree students. Full-time students enrolled in a degree program must take the classroom version of the class (if available). Students may also take distance learning courses from other UB Departments, if those courses are approved as electives for the student's program concentration. In general, courses taken by distance learning may not contribute more than 49% of a student's total credit hours in a degree program. Non-degree students are also subject to the 12-credit limit described in Section 3.12, regardless of the mode of instruction. International students enrolling in online courses should check with International Student Services to ensure that the enrollment satisfies their full-time student status.

3.14 GPA Requirement for Good Academic Standing

A cumulative GPA of at least 3.0 (considering all the courses counted toward a graduate degree) is required at the end of each semester for maintaining a "Good Academic Standing" in all graduate degree programs. This requirement does not apply to the Advanced Certificate in Bridge Engineering.

3.15 Academic Probation

At the end of each semester, an academic review is performed for every graduate student. This review may lead to placement of a student on *Probation* in any of the following conditions:

- The student's GPA falls below 3.0 (loses "Good Academic Standing").
- The student receives a grade of 'U', 'F', or 'D' in any course that could be applied to their degree program. In some cases, a grade of 'U' or "F" also could result in dismissal (see Section 0).

Students placed on academic probation will be issued a probationary letter by the Department Chair or the DGS, with a copy to the Graduate School and the student's advisor, including the conditions that must be met and the appropriate time frame (typically one semester) to regain good academic standing. In addition, a service indicator will be placed on the student's account by the Graduate School to restrict future registration without departmental consultation.

3.16 Academic Dismissal

A graduate student could be dismissed from a CSEE graduate degree program if any of the following conditions apply:

- A grade of "F" is earned in any course that could be applied towards the degree.
- More than two courses are assigned a grade of "U" or a letter grade below "B-".
- The conditions of provisional admission have not been satisfied within one semester after admission.
- Probationary status has not been removed after one semester, or within a timeframe determined by the DGS (as noted in a probationary letter).
- The cumulative GPA for courses which could be applied to a graduate degree falls below 2.5 at the end of any grading period.
- The student is found guilty of a violation of the graduate school's [academic integrity policy](#).
- More than four "R" (Resign) grades are obtained in courses which could be applied to a graduate degree.

Students who are dismissed from the CSEE department will receive a letter from the Department Chair, with a copy to the Graduate School and the student's advisor. A service indicator will be placed on the student's account by the Graduate School to restrict future registration.

A student who has been officially dismissed may submit a formal request for reinstatement, along with a supporting statement of explanation, to the Department Chair. The request shall be reviewed according to the Policies and Procedures of the UB Graduate School.

3.17 Time Limits for Degree

- M.S. degree – For full-time students, the time limit is four years from the first date of registration in the graduate program, excluding approved leaves of absence (see Section 3.18). For part-time students, the time limit is six years from the first date of registration in the graduate program, excluding approved leaves of absence.
- Ph.D. degree – Seven years from the first date of registration in the program, excluding approved leaves of absence.

If additional time is needed, a [Petition for an Extension of the Time Limit to Complete a Graduate Degree Program](#) must be submitted for the advisor and DGS. The student must be currently making active progress towards the degree. The petition will be presented to the SEAS divisional committee for approval before being submitted to the Graduate School. The petition must clearly explain reasons for requesting the extension, present a schedule for progress, and set a deadline for completion of the program. If approved, the extension is typically granted for a maximum period of one year.

3.18 Leave of Absence

Requests for a leave of absence must be approved by the DGS using a [Graduate Student Petition for a Leave of Absence Form](#). The form must then be forwarded to the Office of the

Registrar by the last day of courses of the semester in which the leave is to begin. Leaves of absence will normally be granted for a maximum of one year but may be extended for up to one additional year if circumstances warrant. All leave requests must be supported by adequate documentation. Examples of valid justification for a leave of absence request include documented cases of financial hardship, illness, family situations, or compulsory military service. A student who leaves the program after completion of some graduate work but has not been given an approved leave of absence must reapply and be readmitted as a new student, according to university regulations. If the break is for less than 5 years, the student can file a semester record activation request and does not need to reapply to the program. There is a \$350 fee for reactivation. The form needs to be approved by the DGS and by the Vice Provost for Graduate Education. Further information may be found on the [Graduate School website](#). Continued leave of absence beyond two years will normally not be granted. International students are advised to consult with the International Student Services prior to applying for a leave of absence.

3.19 Academic Integrity

All [Graduate School policies and procedures](#) regarding academic integrity shall apply to all graduate students. As engineers, CSEE graduate students have special ethical obligations. From the National Society of Professional Engineers (NSPE) Code of Ethics, “*engineers shall avoid deceptive acts*” and “*shall conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.*”

3.20 Computing Lab

The Department’s computing lab for graduate students is located in 133A Ketter Hall. Access to these labs is a privilege provided to CSEE graduate students. Lab facilities must be used for academic work only; nonacademic or personal use is prohibited and could result in loss of access.

All students are required to follow all [UB's IT policies](#) for computing and network use. In addition to the UB-IT policies, the following rules apply to the CSEE lab:

- Access to the 133A Ketter lab requires a registered UB card (CSEE majors are automatically registered). The door to the lab must always be closed; propping open the door is prohibited.
- Food and/or drinks are not allowed in the lab at any time.
- Each user must log-in to a single computer using their assigned UBIT login, and they must log-off when the session is completed. Accessing an account belonging to a different student (with or without permission) is prohibited.
- Users are permitted to access only one computer at a time, and they must remain with the computer while in use (except for short bathroom breaks). Unattended processes are subject to termination by the system administrator. Students can request special permission from SENS (email: senshelp@buffalo.edu) to access multiple computers for research purposes for a limited duration. Normally, such requests would be considered only for off-peak hours when classes are not in session.
- During the times of peak activity (i.e., when other students are waiting), students should limit their session to a reasonable duration and essential academic usage.

- Students may not install software or save files to local hard drives. All work should be saved to a portable storage device. Any temporary files left after logging off will be deleted by the system administrator.
- Computers must always be left on and must not be physically moved. Shutting down or restarting computers is prohibited. After logging off, any hardware problems should be reported by sending an email to senshelp@buffalo.edu.
- Students may not move or otherwise interfere with supporting hardware, including but not limited to teaching station(s), networking cables/switches, and/or security cameras.

Conformance with the above policies will be monitored through a variety of means, including but not limited to unannounced inspections by CSEE faculty, remotely monitored security cameras, and network monitoring. Violation will result in temporary or permanent loss of lab privileges at the discretion of the Department Chair, in conjunction with other possible penalties as defined in the [UB's IT policies](#). CSEE and SENS reserve the right, upon reasonable cause for suspicion, to access all aspects of its computing systems and networks, including individual login sessions to determine if a user is in violation of these policies or state and federal laws. Remote access to the computer lab will be granted during department closures.

3.21 Publication Policy

All publications of scholarly work by CSEE graduate students are subject to the following policies.

- Any student submitting a work conducted in the department (or through the use of department's facilities) for publication must have the work reviewed by their advisor prior to submittal.
- Faculty review of a student's work must be duly acknowledged (for example, in the Acknowledgment section of a manuscript or a report), unless the faculty is a co-author.
- The department will pursue withdrawal of works submitted without faculty review.

These policies are in no way intended to limit a student's desire for publishing independent work; rather, they are meant to help guide and protect the interests of the student, the faculty, the department, and the university.

3.22 Changing Program Area or Degree

Each graduate student is admitted into a specific program concentration or a research area as indicated in their letter of acceptance from the department. It is possible to change the program concentration or the research area after admission. Students who wish to pursue this must submit a formal request to the DGS, who will poll the relevant faculty involved to determine whether the change is reasonable.

Students in the M.S. program who are interested in continuing to a Ph.D. program must submit a formal application through the Application Management System and notify the GAC. The GAC will help the student with the new application, including transfer of information from the student's prior application to the new application and arranging for application fee waiver

(if applicable). The student must ensure that all information on the new application is correct, upload a current UB transcript to the new application, and obtain at least two letters of recommendation from UB faculty. At least one of the faculty referees should indicate their willingness to serve as the student's Ph.D. advisor. These applications will be reviewed along with all new applications.

APPENDIX: GRADUATE STUDENT FORMS

Graduate students form to initiate various processes are available on the Graduate School Website or from the GAC in 212 Ketter Hall.

CSEE Department Forms (available from 212 Ketter Hall):

- [Graduate Advisement Form](#)
- [Individual Problems Registration Form](#)
- [M.S. Engineering Project Form](#)
- [Internship Form](#)

Graduate School Forms (available from the Graduate School's Website):

- [Application to Candidacy \(ATC\) Form](#)
- [Certification of Full-time Status Form](#)
- [Amend ATC Form](#)
- [Leave of Absence](#)
- [Transfer Credits Petition](#)
- [M-Form](#)

Forms regarding [Curricular Practical Training \(CPT\)](#) or [Reduced Course Load](#) are available through the International Student Services website.