Institute for Artificial Intelligence and Data Science

Graduate Student Handbook

AY 22-23
Version 1.0 – January 2023

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1 GENERAL INFORMATION

1.1 Introduction

This manual is designed to be a general reference for affiliated faculty and/or students pursuing a graduate degree in one of the following programs: Master of Engineering Science degree with a course focus in Artificial Intelligence; Master of Engineering Science degree with a course focus in Data Science; Master of Professional Studies in Data Sciences and Applications; or Ph.D. in Computational and Data-enabled Science and Engineering. Included are policies and procedures set forth by the School of Engineering and Applied Sciences and the Graduate School of the University at Buffalo.

1.2 Revisions

This document may be revised annually. When this happens, a new edition will be issued. The edition for the academic year in which you were admitted is the one that governs your entire graduate career.

1.3 Petitions

Should a student need special consideration regarding any of the policies or procedures outlined in this handbook, they may submit a petition in writing to their program director for review.

1.4 Orientation, Initial Advisement, and Course Registration

Students should be familiar with the Graduate coordinator's office, located at 415 Bonner Hall. The Graduate coordinator is the central resource for all administrative issues related to graduate studies. The graduate coordinator can assist with initial course advisement and the registration process. The registration procedure may vary by program.

International students, particularly those registering for the first time, should be familiar with the International Student Services (ISS) office in Talbert Hall, room 210. This office advises on issues related to immigration and visa status. ISS hosts a mandatory orientation for international students.

The School of Engineering and Applied Sciences (SEAS) also hosts an orientation for all incoming graduate students the week before the fall semester. Program-specific orientations will also be offered. Each orientation is mandatory for all students to attend.

1.5 Program Contacts

The program director and graduate coordinator are the primary contacts for all students within that degree program. The program director will advise on all issues related to the academic program and professional development. The graduate coordinator will assist with student-related services such as course scheduling and registration and serve as a liaison between the graduate school, the Registrar's office, etc. If uncertain, it is acceptable to contact both in a joint email.

The program directors for each program are:

Engineering Science MS Artificial Intelligence: Dr. Sreyasee Das Bhattacharjee

Engineering Science MS Data Science: Dr. Johannes Hachmann

MPS Data Science and Applications: Dr. Rachael Hageman Blair

Computational and Data-enabled Science and Engineering Ph.D.: Dr. Margarete Jadamec

1.6 Other Documents

Information on University policies and procedures is available on the website and updated regularly. It is the student's responsibility to become familiar with these policies, including the following:

- The Graduate School Policy Library (for graduate students and advisors) https://grad.buffalo.edu/succeed/current-students/policy-library.html
- Uniform Policies for SEAS Graduate Students: http://engineering.buffalo.edu/home/academics/grad/policies.html

In addition, students will find the following websites useful throughout their time of study:

Title	Publisher	URL Address
UB Rules & Regulations / Student Code of Conduct	Student Conduct and Advocacy	http://www.buffalo.edu/studentlife/who-we-are/departments/conduct.html
Forms for Graduate Students	The Graduate School	http://grad.buffalo.edu/succeed/current-students/forms.html
Estimated Cost of Attendance	The Graduate School	http://grad.buffalo.edu/explore/funding/cost.html
Financial Aid	Financial Aid	https://financialaid.buffalo.edu/costs/
SEAS Website	SEAS	http://engineering.buffalo.edu/
Institute Website	IAD	https://www.buffalo.edu/ai-data-science.html
Registrar Website	Registrar	http://registrar.buffalo.edu/
UB Directory	The University at Buffalo	https://www.buffalo.edu/search/search.html
Student Life Gateway	Student Life	http://www.buffalo.edu/studentlife/who-we-are/about-student-life-gateway.html
Accessibility Resources	Student Guide	https://www.buffalo.edu/studentlife/who-we-are/departments/accessibility.html
Counseling Services	Student Guide	https://www.buffalo.edu/studentlife/who-we-are/departments/counseling.html
ISS	Office of International Student Services	https://www.buffalo.edu/international-student-and-scholar-services.html

2 ADMISSIONS

2.1 Overview

Applicants must have a bachelor's degree from an accredited college or university. Applicants to the Ph.D. program must also have a master's degree from an accredited college or university.

Applications for admission are evaluated based on criteria reflecting the academic quality and probable success in advanced study. These criteria are:

- Undergraduate grades:
  - A minimum cumulative undergraduate grade point average (GPA) of 3.0 on a United States 4.0 scale
- Prior knowledge/coursework
  - This may vary by each degree program and may include but is not limited to the following:
    - Math (calculus, multivariate calculus, linear algebra)
    - Statistics (basic statistics and probability)
    - Computer Science (programming- at least one language):
- Two letters of recommendation
  - Letters should come from professional sources, including, but not limited to supervisors, former advisors, or instructors.
- Personal Statement
  - A statement outlining past accomplishments, professional objectives, special interests, and educational plans

The GRE is not required by the master's level programs. However, it is highly recommended. Potential students can submit their GRE scores, even if not required by the program for admissions. The GRE is required for the CDSE PhD program.

The Graduate School requires that students who are not native English speakers must demonstrate English proficiency. Applicants must take the Test of English as a Foreign Language (TOEFL), Pearson Test of English (PTE), Duolingo English Test (DET), or the International English Language Testing System (IELTS) within two years prior to the proposed admission date to UB. The State University of New York at Buffalo has a minimum TOEFL score requirement of 550 (paper-based) or 79 (internet-based). On IELTS, UB requires an overall score of 6.5 with no band score below 6.0. On PTE Academic, the university minimum score is 55, with no subsection score below 50. The DET minimum score requirement is 120.

Applicants can review this requirement under the English Language Proficiency Requirement web page.

2.2 How to apply

Applications will be completed online. Students can access the application management system by going to https://ubseasconnect.buffalo.edu/apply/. The student must complete all fields and upload the required documentation. Applications will not be reviewed until the application has been marked submitted by the student and all materials have been uploaded.

2.3 Application Components

Using the online application, every applicant must submit the following:

- A completed application on the website, filling out all required fields
- Email address for two (2) individuals who will provide letters of recommendation
- Resume/Curricula Vitae
- Personal Statement
- GRE scores (if applicable)
- English language proficiency scores (if applicable)
- Scanned copies of academic transcripts from undergraduate and graduate (if applicable) - English translation is required.
- Pay the $85 application fee.

Applicants may start and return to the application at any time, and you do not need to submit all components at once. However, an application will not be reviewed until you have formally submitted it, paid the application fee, and all supplemental materials are received.

2.4 Exceptions to Admissions Requirements

The program director will be responsible for evaluating the applicant's admissions materials to determine if an exception can be granted and the grounds upon which such an exception can be made. If a student wishes to enter an alternative program, they must fulfill the normal application process for that program. Exceptions and re-routing are subject to approval by program directors.

2.5 Admissions Classifications

- Degree Student: students whom the department has admitted with an undergraduate grade point average of 3.0/4.0 or better.
- Non-degree student: students with suitable academic qualifications but do not wish to take a degree program.
- Non-Matriculated student: a student who has been admitted but has not enrolled in the academic program.
- Provisional admission: students are accepted on a provisional basis but must fulfill specific requirements before enrolling in the program.

3 MASTER'S PROGRAM DEGREE REQUIREMENTS

3.1 The MS Degrees

The Institute for Artificial Intelligence and Data Science offers three masters-level graduate degrees:

- Master of Science (MS) in Engineering Science with a course focus in Artificial Intelligence
- Master of Science (MS) in Engineering Science with a course focus in Data Science
- Master of Professional Students (MPS) in Data Science and Applications

Each degree program has its own admission and degree requirements and separate program directors. Students admitted into their respective degree programs must adhere to their curriculum requirements and the policies and procedures outlined in this handbook.

3.2 Master of Science (MS) in Engineering Science with a focus in Artificial Intelligence

The Engineering Sciences MS, with a course focus on Artificial Intelligence, is a 1.5-year (30 credit hour) multidisciplinary program. The program is designed to train students in the areas of machine learning, programming languages that are needed to design intelligent agents, deep learning algorithms, and advanced artificial neural networks that use predictive analytics to solve real-world problems. Students in this program are offered a set of foundational core courses in AI and the flexibility to choose from elective concentration areas that include data analytics, computational linguistics, information retrieval, machine learning and computer vision, knowledge representation, and robotics.

Students must complete nine courses (27 credits) and a capstone project (3 credits). The course requirements are shown below.

3.2.1 Core Courses

- EAS595 Fundamentals of Artificial Intelligence
- CSE 555 Introduction to Pattern Recognition
- CSE 574 Intro to Machine Learning
- EAS 501 Intro to Numerical Mathematics for Computing and Data Science
- CSE 568 Robotics Algorithms

3.2.2 Electives

Students can mix and match between categories; they do not have to pick one category and complete all electives from the list. Students will take 4-5, 3-credit electives. The number of electives needed to graduate is based on the culminating experience option.

DATA ANALYTICS GROUP

- CSE 601 Data Mining and Bioinformatics
- EE 539 Principles of Information Theory and Coding
- EE 559 Big Data Analytics
- MAE 509 Probability and Stochastic Process

COMPUTATIONAL LINGUISTICS AND INFORMATION RETRIEVAL GROUP

- CSE 567 Computational Linguistics
- CSE 535 Information Retrieval
- CSE 635 Natural Language Processing and Text Mining

MACHINE LEARNING AND COMPUTER VISION GROUP

- CSE 674 Advanced Machine Learning
- CSE 676 Deep Learning
- MAE 600 Deep Learning for Mechanical Engineering
- CSE 573 Introduction to Computer Vision and Image Processing

KNOWLEDGE REPRESENTATION GROUP

- CSE 563 Knowledge Representation
- EAS 524 Ontological Engineering (Cross-Listed with Philosophy)

HUMAN/MACHINE INTERACTION GROUP

- MAE 527 Intelligent Machine Interfaces
- MAE 502 Human-Robot Interaction
- IE 535 Human Computer Interaction

OTHER

- MAE 593 Robotics 1
- CE 551 Computer-Aided Research in the Chemical and Materials Sciences

If a student is interested in an elective not mentioned on the above list for degree credit, they must get approval from the program director. Students can get approval by emailing engsci@buffalo.edu the course name, number, description, and how the class relates to their AI interests and future career aspirations in AI. Failure to get approval before registering for the class could result in the student needing additional credits to graduate.

3.2.3 Culminating Experience

Students can satisfy their culminating experience through one of two options:

1. All courses: complete 15 credits of electives (5, 3-credit electives)
2. Project: complete 12 credits of electives and a 3-credit project. The project can be an approved internship in the industry or a faculty-based research project on campus. Students must complete this via three credits of EAS 563 AI Capstone; no other course can be used for this project requirement.

In addition to the coursework requirement for either culminating experience option, students must complete a capstone experience before graduation to meet their culminating experience requirement to graduate. This includes completing an oral presentation and a final written paper. Details will be sent out to students in their final semester once they have applied for graduation. The due date for the oral presentation and paper typically aligns with the final examinations.

3.3 Master of Science (MS) in Engineering Science with a focus in Data Science

The Engineering Science MS with a course focus in Data Science is a 30-credit hour program that trains students in the emerging and high-demand area of data and computing sciences. Students will be trained in sound basic theory, emphasizing practical aspects of data, computing, and analysis. Graduates will be able to serve the analytics needs of employers and will be exposed to several application areas. The degree can be specialized using electives and a project. The curriculum for the MS in Data Science and Applications program includes courses primarily from the School of Engineering and Applied Sciences (SEAS).

The program is taught in a cohort-based model offering both Fall and Spring semester admission. Students will take a combination of core courses (24 credits), electives (3 credits), and a culminating experience requirement (3 credits).

3.3.1 Core Courses

The cohort design of the program ensures that students in the entering class (Fall, Spring) will be in the same classes together through the program's required courses. The graduate coordinator sets schedules to ensure students are in a suitable class with their cohort. Students are not permitted to create their schedules or adjust their existing schedules. All requests must go through the graduate coordinator. Therefore, students cannot choose when they take which courses. The exception for this is in the final semester(s), where students have the flexibility to choose when they complete the project/survey course, as exemplified in the course flowsheets below.

Flowsheet: Fall Intake

Fall	**Spring**	**Summer**	**Fall**
EAS 501	EAS 509	EAS 560	EAS 504 (optional)
EAS 502	CSE 560	EAS 504 (optional)	EAS 560 or Elective
EAS 503	CSE 574		
EAS 508	Elective		

In the above example, the student could take EAS 560 in the summer to graduate in 1 year OR take their project or elective in the final fall semester to extend their graduation to 1.5 years.

Flowsheet: Spring intake

Spring	**Fall**	**Spring**
EAS 501	EAS 509	EAS 560 or Elective
EAS 502	CSE 560	EAS 504
EAS 503	CSE 574	
EAS 508	Elective	

In the above example, the student can choose EAS 560 or the second elective in the final semester. Finishing in 1 year is not an option due to course sequencing issues.

3.3.2 Electives

Students are required to take one elective in their second semester of the program. An optional second elective may be taken for students pursuing the all-course option.

The following courses are pre-approved electives students can take to fulfill their elective requirements.

- CSE 535 Information Retrieval
- CSE 562 Database Systems
- CSE 573 Introduction to Computer Vision and Image Processing
- CSE 586 Distributed Systems
- CSE 587 Data Intensive Computing
- CSE 601 Data Mining for Bioinformatics
- CSE 633 Parallel Algorithms
- CSE 635 Natural Language Processing and Text Mining
- CSE 636 Data Integration
- CSE 674 Advanced Machine Learning *
- CSE 676 Deep Learning *
- STA 517 Categorical Data Analysis
- STA 567 Bayesian Statistics
- CDA 609 High-Performance Computing
- IE 575 Stochastic Methods
- IE 535 Human-Computer Interaction
- EE 634 Principles of Information Theory and Coding
- MTH 558/559 Mathematical Finance

**Courses are available to students who wish to enroll as a second elective/pursue an all-course option. Require completion of CSE 574 before entering. It is up to the instructor if students can co-enroll in one of the courses*

Elective courses are not guaranteed to be offered every semester.

Only lecture courses can be used to fulfill the elective requirement; seminars courses are not eligible.

In the event a student is interested in taking a course that is not on the abovementioned list, they must send a course description and syllabus to the program director for approval to enroll to fulfill elective requirements in the program. If the program director approves, the student must get departmental permission to be force enrolled in the course.

Example: Student A wants to enroll in CSE 510 / 610 (special topics). The student forwards the course information to the graduate coordinator at engsci@buffalo.edu. The graduate coordinator will consult with the program director. The program director approves. The student will then submit a request in the SEAS force registration portal to be enrolled in the course. If the instructor approves, the request will be processed, and the student will get an acceptance notification.

3.3.3 Culminating Experience

Students can complete their culminating experience requirement in one of two ways:

1. Master's project: Students may elect to complete a project-based internship or a research project with a faculty member. Students will register for three EAS 560 Master's Project course credits.
2. All-course option: Students may elect to complete a second elective. At the end of their final semester, students will complete either a 4–5-page writeup or a 20-minute oral presentation on the topic of their choice and/or the type of job the student is interested in pursuing and how it relates to what the student learned in the program; must integrate key concepts learned from core coursework (semesters 1 and 2). The program director will grade this as a pass/fail.

3.4 Master of Professional Students (MPS) in Data Science and Applications

This Master of Professional Studies degree is skills-oriented and provides training in the practice of data, computing, and analysis. Students will need some prior knowledge of mathematics, statistics, and computing, and bridge classes are available to prepare students for success in the program. However, the program is designed to support students from various academic backgrounds, which are not necessarily STEM. The program is well-suited for STEM and non-STEM and often attracts professionals working in the industry that seeks to bring data science into a particular field of the workplace. The MPS program in Data Science and Applications emphasizes applications of methods to various datasets and problems. The curriculum for the MPS in Data Science and Applications program spans five different schools at the university.

The program comprises ten 3-credit courses for 30 credits total and can be completed in one calendar year of study in an intensive program or 1.5 years for a standard time to completion.

3.4.1 Core courses

- CDA 501/EAS 503: Introduction to Data-Driven Analysis
- CDA 502/MGS 613: Database Management Systems
- CDA 511/MTH537: Introduction to Numerical Analysis
- CDA 531/MTH 511 Probability and Data Analysis
- CDA 532/STA 545: Statistical Data Mining 1
- CDA 546/STA 546: Statistical Data Mining 2
- CSE 574: Intro to Machine Learning
- CDA 551/MGS 639: Cybersecurity, Privacy, & Ethics
- EAS 504: Applications of Data Science Industry Overview
- CDA 571: Project Guidance *OR* an elective from the approved list

3.4.2 Electives

Effective Fall 2022, students have the option to finish the program by taking an elective in place of CDA 571 Project Guidance. Students can only take classes from the approved list below.

- BMI 503 Biomedical Informatics
- CDA500 Special Topics
- CSE 531 Algorithms Analysis and Design
- CSE 535 Information Retrieval
- CSE 526 Blockchain Application Development
- CSE 529 Algorithms for Modern Computer Systems

- CSE 546 Reinforcement Learning
- CSE 555 Pattern Recognition
- CSE 560 Data Models Query Language
- CSE 562 Database Systems
- CSE 573 Introduction to Computer Vision and Image Processing
- CSE 676 Deep Learning
- ECO 525 Economics of Financial Institutions
- GGB 502 Essentials of Genetics and Genomics
- GEO 511 Spatial Data Science
- GEO 514 GIS and Machine Learning
- IE 511 Social Network Behavior Models
- IE 535 Human-Computer Interaction
- IE 572 Linear Programming
- IE 575 Stochastic Methods
- MGS 614 Systems analysis and design
- MGS 616 Predictive analytic
- MGS 628 Data visualization for business insights
- MGS 653 Social network analysis
- MGS 655 Distributed computing and big data technologies
- MGS 657 Online analytical processing: data warehousing
- MGS 659 Web Analytics and Optimization Techniques for eCommerce
- MGS 660 Big Data Information Management: Architecture and Tools
- MGS 662 Optimization Methods for Machine Learning
- MGS 670 Health Care Analytics
- MTH 543 Fundamentals of Applied Math
- MTH 550 Network Theory
- MTH 558/559 Mathematical Finance
- PHY 501 Introduction to Math Physics
- PSC 508 Basic Statistics for the Social Sciences
- PSC 534 Text as Data
- STA 503 Introduction to Applied Statistics 1
- STA 504 Introduction to Applied Statistics 2
- STA 505 Introduction to Biostatistics
- STA 509 Statistical Genetics
- STA 517 Categorical Data Analysis
- STA 527 Statistical Analysis 1
- STA 528 Statistical Analysis 2
- STA 529 Statistical Analysis 3
- STL 502/IE 550 Introduction to Operations Research
- STL 505 Transportation Modeling Fundamentals

Alternative courses will be considered by the Director of the program. Students must email the director the course of interest and a rationale that relates the proposed course to the program curriculum.

3.4.3 Culminating Experience

Students can satisfy their culminating experience through one of two options:

1. All courses: complete one of three credit electives from the approved list
2. Project: complete a project via internship in industry or research with faculty on campus. The project is equivalent to 3 credits, and only the CDA 571 Project Guidance Course can be used to satisfy the project requirements.

All students must submit a final written paper and participate in an exit interview with the program director. The parameters of these requirements will be sent to students in their final semester upon registration for CDA 571.

4 DOCTOR OF PHILOSOPHY (PH.D.) DEGREE REQUIREMENTS

4.1 Overview

The Computational and Data-Enabled Science and Engineering (CDSE) Ph.D. program is an interdisciplinary Ph.D. program that integrates the core areas of data science, numerical algorithms, and high-performance computing toward research and discovery building on a graduate student's domain science/discipline. Graduate students attending the program are required to have a Master's degree, which provides the foundation on which the CDSE Ph.D. program builds. This foundational Master's work can be in various disciplines, including but not limited to engineering, mathematics, natural sciences, social sciences, business, and pharmacy. The program aims for a 3-year timeline to completion.

As part of the program's interdisciplinary nature, Ph.D. students have a home department in their domain science/discipline with their primary Ph.D. advisor but work interdisciplinarily with their Ph.D. committee members, which span the domain science/disciplines across UB and the CDSE core Ph.D. areas. In this way, the CDSE Ph.D. program provides a unique opportunity to train scholars with a combination of domain science/discipline and technical expertise, preparing the next generation workforce.

The CDSE Ph.D. program has three pillars of core coursework that provide the pedagogical framework for the degree. These are (1) Data Science, (2) Applied Mathematics and Numerical Methods, and (3) High Performance and Data Intensive Computing. Graduate students are required to take a suite of courses in these three core CDSE areas. The coursework is designed to facilitate research that leverages the fundamentals from these core areas to the graduate student's domain of science/discipline.

4.2 Coursework and Credit Hour Requirements

The CDSE Ph.D. program requires 72 graduate-level credit hours, comprised of a combination of coursework in the three CDSE core areas, electives in the domain of science/discipline, and dissertation research and thesis credits. Of the 72 total credit hours required, 30 credit hours are from courses within the three CDSE core areas. The 30 credit hours of CDSE core courses are, in turn, subdivided, with nine credits in two of the CDSE core areas and 12 credits in the third CDSE core area (with the total summing to 30). In collaboration with their Ph.D. committee, the graduate student can determine which of the three core CDSE areas to take the 12 credits in according to their research plan. The core courses must be taken for a letter grade, and a minimum GPA of 3.2 cumulative on a 4.0 scale is required for the CDSE core courses. Up to 36 credits can be research and thesis credits, and at a minimum, students must have at least 12 credits of dissertation coursework completed via CDA 660 CDSE Dissertation.

Of the total 72 credit hours for the CDSE Ph.D. program, 36 must be taken while enrolled in the CDSE Ph.D. program. This allows for up to 36 credits to be transferred in from Master's coursework, with the approval of the dissertation committee and the Graduate Director. The courses transferred from the Master's degree can include coursework in the core of CDSE. However, only 6 hours of research credits from the Master's degree can be transferred. A listing of the CDSE core courses that is non-exhaustive is included below.

4.3 CDSE Courses

4.3.1 Data Science

- CSE 574: Intro to Machine Learning
- STA 521: Intro to Theoretical Statistics 1
- STA 522: Intro to Theoretical Statistics 2
- STA 534: Design of Experiments
- STA 567: Bayesian Statistics
- MAE 701 Special Topics: Bayesian Methods in Engineering Applications
- CSE 704 Seminar: Big Data
- CSE 740 Seminar: Big Data/Machine Learning

4.3.2 Applied Numerical Mathematics

- MTH 537: Introduction to Numerical Analysis 1
- MTH 538: Introduction to Numerical Analysis 2
- MTH 539: Method of Applied Mathematics 1
- MTH 540: Method of Applied Mathematics 2
- MTH 550: Network Theory
- MTH 555: Introduction to Complex Systems
- MGF 636: Complex Financial Instruments
- MAE 702 Seminar: Applied Functional Analysis

4.3.3 High Performance and Data Intensive Computing

- MTH 548: Data-Oriented Computing for Mathematics
- CSE 570: Introduction to Parallel and Distributed Processing
- CSE 587: Data Intensive Computing
- CDA 609: High-Performance Computing 1
- CDA 610: High-Performance Computing 2

The course selection is made in collaboration with the Ph.D. advisor and committee. However, it is the graduate student's responsibility to register for classes each semester and be cognizant of registration deadlines. If a student does not register by the deadline set by the Office of the Registrar, they are subject to a late fee. Please reference the Registrar's website for information on class registration.

4.4 Ph.D. Research Requirements and Milestones

The CDSE Ph.D. program has a systematic sequence of Ph.D. milestones to help guide the dissertation's progress. The milestones are incorporated into a timeframe that adheres to the aim of the 3-year time-frame to completion for the CDSE Ph.D. degree. The milestones are outlined in the list below, and a more detailed description of each milestone is subsequently provided. As a part of the process, students are strongly suggested to finish their core coursework within the program's first two years.

Year 1

First Semester:

Form Ph.D. committee
Submit the Committee Approval Form
Work on prospectus and course plan
Take classes

Second Semester:

Present prospectus to the committee
Submit Project Approval Form
Work on dissertation research
Take classes

Year 2

Third Semester:

Work on dissertation research
Take classes
Take Qualifying Oral Exam (if coursework is completed)

Fourth Semester:

Write Ph.D. proposal
Present Ph.D. proposal to committee (or Year 3)
Work on dissertation research

Year 3

Fifth Semester:

Present Ph.D. proposal to committee (unless done in Year 2)
Work on dissertation research and writing

Sixth Semester:

Complete dissertation
Defend dissertation
Submit M-Form

4.5 CDSE Milestones Detailed Description

CDSE student progress is tracked through milestones that are to be completed during certain semesters of the program. These milestones require appropriate forms to be completed and signed by the advisor, dissertation committee, and Director of Graduate Studies. Paperwork should be completed and filed with the Graduate coordinator via email at cdsedept@buffalo.edu.

4.5.1 Form CDSE Ph.D. Committee

The Ph.D. student is to form their Ph.D. committee no later than the end of the first semester in the program. The Ph.D. committee consists of the Ph.D. advisor and two faculty members. The Ph.D. advisor and committee members must be affiliated faculty with the Institute for Artificial Intelligence and Data Science (IAD). The affiliated IAD faculty are identified on the IAD program website. The Ph.D. committee may include additional members, in addition to the three faculty specified above. All faculty on the Student's Ph.D. committee must also be on the Graduate Faculty Roster. Only one faculty member on the Ph.D. committee may have the same primary academic affiliation as the Ph.D. advisor.

A Committee Approval Form must be signed by every faculty member that has agreed to serve on the committee, and then be approved by the Director of Graduate Studies. Once all signatures are received

from the Ph.D. Committee, the student should bring the form to the Graduate coordinator, who will review and obtain the final signature from the Director of Graduate Studies.

4.5.2 Prospectus and Project Plan Approval

Once the Ph.D. committee is formed, the student next focuses on narrowing down the research topic and course plan. Specifically, this includes (a) deciding on the research topic, (b) formulating a course plan to support the research, (c) writing a short prospectus outlining the proposed research, and (d) presenting a-c to their Ph.D. committee. Steps a-c are worked on iteratively between the graduate student, Ph.D. advisor, and Ph.D. committee before the presentation.

The prospectus document is approximately 1 page long and describes the research questions and general directions of the planned research. The Ph.D. Committee will use this information to help the candidate select appropriate coursework throughout their program. The presentation to the Ph.D. committee is generally a 10–15-minute presentation on the Prospectus, followed by the course plan. Slides and the prospectus document for the presentation should be shared with the committee at least three days in advance.

A Project Plan Approval Form is to be filled out by the student, in collaboration with the Ph.D. committee, that outlines the courses in each core area the student plans on taking and in what semester they intend to enroll in the courses.

By signing the form, the Student's Ph.D. committee indicates the following:

1. Their approval that the courses indicated satisfy the CDSE Ph.D. Focus Area course requirements.
2. They have reviewed the dissertation prospectus and discussed it with the student and assessed its alignment with the courses listed in the course plan and CDSE Ph.D. program.

The Project Plan Approval form is completed after the presentation of the Prospectus. The Project Approval form, the dissertation Prospectus, and the student's current unofficial transcript should be submitted to the CDSE Director of Graduate Studies during the first week of the second semester in the Ph.D. program.

4.5.3 Oral Examination

Upon completion of the core coursework, typically by the end of the third semester in the CDSE Ph.D. program, the student must complete an oral examination administered by the Student's Ph.D. committee. The exam should cover topics from the CDSE core courses and background material relevant to the student’s research plan. In terms of format, the oral exam typically begins with a 30–40-minute presentation by the Ph.D. student to the committee on the background and scope of the research that they plan to propose. The committee then asks questions based on the CDSE Ph.D. student's coursework, core domain science/discipline area, and how these relate to the Ph.D. research. The exam questioning committee comprises the graduate student's CDSE Ph.D. committee. The Ph.D. advisor may attend but may not participate in the examination process or questioning.

If the graduate student fails the exam, the Ph.D. student may retake the oral exam within one year. Failure to pass the second exam may result in the student's dismissal from the CDSE Ph.D. program. The completed form should be returned to the Graduate coordinator in 415 Bonner Hall.

Once the oral examination has been completed, students should submit the oral examination form and the Application to Candidacy (ATC) form to the graduate coordinator, who will then send it to the CDSE Director of Graduate Studies for signature and to the Graduate School.

4.5.4 CDSE Ph.D. Proposal

No later than the end of the FIFTH SEMESTER in the CDSE Ph.D. program, the student must complete a Ph.D. proposal. The proposal should include a substantial written document by the graduate student formally proposing the dissertation work and a presentation by the student to their Ph.D. committee on the proposal. The Ph.D. proposal length should be approximately 10-15 pages, not counting references, following an NSF-style proposal. Note, however, that given the interdisciplinary nature of the CDSE Ph.D. program, the proposal format may vary by discipline. The Ph.D. proposal must be submitted to the committee one week prior to the presentation. It is expected that a large portion of the Ph.D. research has been completed prior to the proposal submission and that a detailed completion plan has been made and included in the proposal.

After reviewing the proposal document and proposal presentation, the Student's Ph.D. committee must sign the form, indicating that they approve the student's proposal. If the committee feels any adjustments need to be made, they may record their feedback on the back of the form under Committee Comments/Requirements.

The advisor and all committee members must sign the form before being submitted to the Director of Graduate Studies and the graduate coordinator.

4.5.5 CDSE Dissertation Completion and Defense

Upon completion of the written dissertation, the student must defend their dissertation to their Ph.D. committee in an oral defense presentation. The dissertation should be submitted to the Ph.D. Committee at least one week prior to the defense.

The student must email the Graduate coordinator at cdsedept@buffalo.edu with the dissertation abstract and the date/time/location of the oral defense. The Graduate coordinator will formally announce an open invitation to the defense to the IAD community.

Once the student has completed their oral dissertation defense, the advisor and Ph.D. committee must meet to decide whether the student has successfully defended their dissertation. The advisor and committee must complete the CDSE Dissertation Approval form with their feedback. **This form needs to be approved by all members before the Director of Graduate Studies will sign off on both this form and the M-Form that the Graduate School requires for degree conferral.**

Each committee member will indicate their approval of the dissertation in one of three ways:

1. No changes are required.
2. Changes are requested, but the committee member acknowledges that the advisor will ensure the changes are made and do not require seeing the final dissertation.

3. Changes are requested, and the committee member will review the final dissertation.

In the third case, that committee member must directly contact the Director of Graduate Studies to approve the changes.

The Director of Graduate Studies will NOT sign the M-Form until this step is complete.

5 GENERAL STUDENT REQUIREMENTS

5.1 Registration Requirements

Students are required to register every semester; registration options include courses, research, thesis, or dissertation work. Students should be familiar with the registration deadlines as published on the Registrar's website and will be liable for financial implications if registration is not completed by the required date.

Proper registration is important for the determination of the residence requirements. "Residence" implies pursuing advanced study or research while registered at UB.

All international students need to maintain full-time status during their entire graduate study at the University at Buffalo. As per immigration regulations, international students must maintain full-time status.

Students are required to register continuously during their period of graduate study until all requirements for the degree are completed. Students who, for one reason or another, cannot maintain continuous registration must request a Leave of Absence before the start of the semester for which the leave is being requested. For this purpose, the student must petition the Dean of the Graduate School and obtain the approval of the Director of Graduate Studies. A leave of absence will only be granted to students in good academic standing. If the student is enrolled for less than 12 credits (less than nine credits for TAs, GAs, or RAs), the Certification of Full-Time Status form should also be completed.

Leaves of absence will generally be granted for only one (1) semester at a time. Leaves of more than one (1) semester may require additional justification and documentation from the student and the student's advisor. Documented cases of financial hardship, illness, or compulsory military service constitute valid justification. Students who leave the program after completing some graduate work but have not been granted an approved leave of absence must reapply and be readmitted as a new student. Continued leaves of absence beyond two (2) semesters will not be granted.

5.2 Transferring Credits

Students may transfer up to 6 graduate credits into the MS programs and up to 36 credits into the Ph.D. program, subject to the approval of the major advisor at the doctoral level and the Program Director at the masters level. This includes any electives that are not on the pre-approved list of electives.

Only graduate courses relevant to the program and completed with letter grades of B or better are eligible for consideration as transfer credits. If you transfer a course equivalent to a course at UB, you may not take the equivalent course at UB.

The official graduate school policy states: "The Graduate School will consider for transfer credit graduate-level coursework from nationally accredited institutions of higher education, as well as graduate-level coursework from any international institution that UB recognizes as equivalent to a nationally accredited institution. Only those graduate courses completed at accredited or recognized international institutions and with grades of full B or better are eligible for transfer credit. Courses with grades of S or P are eligible for the transfer except when the transfer institution's grading policy equates S or P with lower than a full B grade."

To transfer credits outside of UB, students must submit the transfer credit petition found on the Graduate School Website: http://grad.buffalo.edu/succeed/current-students/forms.html Waiving Requirements.

A student may have already taken a graduate course similar to a required core course OR have taken an undergraduate version of a cross-listed course (Example: CSE 474//574 Intro to Machine Learning). In that case, the student can request a waiver of that core course from the graduate coordinator.

Students who completed the undergraduate version of a core course and had it count towards their undergraduate degree requirements cannot double dip. This means that the undergraduate course cannot be counted towards the graduate requirement, and students cannot take the graduate version of the course if they receive a grade of "B" or higher. In these situations, the student can work with the Program Director to either take an independent study in place of the core course or find an advanced level of the course being offered as a course directive.

Students waiving requirements must still meet the 30-credit hour requirement. The waiving of a course requires the student to replace those 3-credits with another course at the discretion of the Program Director.

5.3 "Double Dipping" Course Credit

Suppose you received a graduate degree from another department at UB or are in the process of receiving one. In that case, a limit of 6 credits can be shared from another degree program to satisfy your Master's degree requirements. This means that 24 credits must be unique to your MS program.

For example, if you took STA 545, STA 546, and STA 517 to earn a degree in Biostatistics at UB, only STA 545/546 would count for the MPS Data Science and Applications program, satisfying the Statistical Data Mining I and II core course requirements. The third course, STA 517, would not be transferrable as an elective, and no other courses from that master's program could be used towards the MPS program. In this scenario, you do not need to take another course to replace these core course requirements (STA 545 = CDA 541 and STA 546= CDA 532), as they are counted as "shared credits" between both programs.

Similarly, if a student took CSE 474 as an undergraduate at UB, and that course was taken for undergraduate credit toward their bachelor's degree requirement. In that case, students cannot enroll in CSE 574 as a graduate if the previous grade earned was a "B" or better. In this scenario, the students would need to work with the program director to find replacement courses for the machine learning core requirement, such as CSE 674 Advanced Machine Learning or CSE 676 Deep Learning.

5.4 Inapplicable Credits

The following will not be used to fulfill degree requirements:

a. A graduate course took to fulfill the requirements of an undergraduate degree program.
b. Courses in which a grade of F or U is obtained at the graduate level.
c. English language courses, courses not included in the curriculum outline, and remedial courses taken to fulfill department admission requirements.

5.5 Resigning from a course

The current UB Graduate School policy regarding course resignation states:

“Graduate Students have the prerogative to resign any course for which they have registered without GPA penalty through the end of the 11 weeks of the fall or spring term. All course resignations processed during the permissible dates (as published in the class schedule available through the Office of the Registrar) will be indicated as officially resigned courses by the notation R on all grade reports, transcripts, and other official university documents. Resignation from all courses should be done through the HUB Student Center, which students may access through the MyUB portal. There are no quality points attached to an R designation.”

All students must talk to the graduate coordinator before resigning from a course to discuss the implications and formulate a new course plan to meet degree requirements. International students may not resign from a course if it brings them below the minimum credit hour requirements to maintain visa status. International students must have an approved course load reduction to resign from courses if it drops them below 12-credits (9 credits if TA/RA/GA) and must be approved by ISS.

5.6 Repeating Course

Students are permitted to repeat a course to improve their grade. A core course must be repeated if a student fails the course. An exception to this is if the grade is a result of an academic integrity violation. The program director (in consultation with the course instructor) can grant exceptions to this rule if repeating a course is necessary to fulfill the program requirements.

In the event a course repeat is approved, the graduate school repeat policy will be followed as outlined:

"If a graduate student repeats a course that is not normally "repeatable" ("repeatable" courses include dissertation, research, thesis, project, or portfolio guidance; independent study; directed readings; etc.), only the highest grade earned in the course will be counted toward the degree and used to calculate the grade point average associated with the graduate degree program requirements. However, the student's official graduate transcript will record all courses attempted (including repeated courses). All resulting grades earned are calculated in the cumulative GPA reflected on the student's “final official transcript.”

5.7 Student Status

Students are required to be registered for full- or part-time status.

a. Full-Time: A full-time academic status for a graduate student is 12 credits per semester or a minimum of 9 hours if the student holds a graduate, teaching, or research assistantship position.
b. Part-time: A Student who is registered for less than 12 credits and has not filed a petition certifying full-time status is considered a part-time student.

5.8 Certification of Full-time Status

Under certain circumstances, graduate students who are under 12 credit hours should submit the full-time certification status form to the Graduate school. All funded and international Students in this category must file the petition.

a. Form: https://www.buffalo.edu/grad/succeed/current-students/forms.html

5.9 Reduced Course load

Immigration regulations require that F-1 and J-1 students maintain an entire course of study (minimum of 12 credits each semester for most students; 9 credits for Graduate Students with an Assistantship; 1 or more credits for Graduate Students approved by the Graduate School for Full-Time Certification). However, the regulations permit a "Reduced Course Load" in minimal situations. If a student cannot enroll full-time, they must be approved by International Student Services for a Reduced Course Load before dropping below full-time.

a. Academic Reduced Course load: Permits F-1 and J-1 students to reduce their course load below full-time (to a minimum of 6 credits) if they experience academic difficulty. It can only be used one time per degree level, and the student must experience difficulty in one of the following areas:
    a. Initial difficulties with the English language
    b. Initial difficulties with reading requirements
    c. Unfamiliarity with American teaching methods
b. Medical Reduced Course load Permits students to reduce course load below full-time (or, if necessary, not enroll in any course) due to a student's temporary illness or medical condition.
    a. A maximum of 12 months of Medical Reduced Course Load is possible per degree level.
    b. It is issued on a per-semester basis.
    c. Students must submit a letter from a licensed medical doctor, doctor of osteopathy, or licensed clinical psychologist practicing in the US.
c. Final semester Reduced Course load Permits students to enroll below full-time if it is the final semester of their degree program and they need fewer than 12 credits to graduate.
    a. Students must enroll in at least one credit at UB during their final semester and may not only take distance courses during their final semester.
    b. It can only be used one time per degree level.

A student cannot complete an internship if they applied for an academic reduced course load the semester of, or immediately preceding, the intended internship period.

6 GRADUATION REQUIREMENTS

6.1 Requirements for Master's Students

- Maintain continuous registration. Students must register for at least one graduate credit the semester before degree conferral. Summer registration is required if students plan to confer for an August 31 conferral date.
- Fulfill the minimum residency requirement of 24 UB credits of registration.
- Complete ten courses, totaling 30 credit hours of graduate coursework – subject to certain constraints when completing two Master's degrees (as per Graduate School Policies and Procedures)- distributed based on the specific degree requirements
- Achieve at least a B average in all courses (Cumulative GPA of 3.0 or higher)

6.1.1 Application to Graduate

Masters Students must apply to graduate from HUB before the deadline posted on the Graduate School Website.

As Per the Graduate School Website :

- Navigate to the HUB Student Center.
- On the left side of the screen, under the "Academics" header, select "Apply for Graduation" in the dropdown menu.
- Select the "Apply for Graduation" link next to the appropriate program and degree. If the link is not visible, you may not be eligible for graduation at this time. Please contact the graduate coordinator for more information.
- In the dropdown menu next to "Expected Graduation Term," select a valid term to apply for graduation. Only terms in which you are eligible to apply for graduation will be displayed.
- Review your selection and click the "Continue" button if correct.
- Click the "Submit Application" button to complete your application. You should see a "Submit Confirmation" message.

6.1.2 Petition to Change Graduation Conferral Date

A student may only apply for graduation in HUB once (per degree program). If you apply for graduation in HUB, you will not be able to do it again. If you are changing the graduation date from what was noted on your original application to graduation, you must file a Petition to Amend the ATC Form that will be processed through the Registrar's office. Students should sign and have the program director sign as the director of graduate studies and major advisor.

6.1.3 Degree Time Limits

Master's degrees must be completed within four years from the student's first registration date in that Master's degree program. Doctoral degrees must be completed within seven years from the student's initial formal matriculation in that doctoral program. Requests for extensions of time limits must be petitioned using the Extension of Time Limit to Complete a Degree Program form. Each divisional or area committee may establish its own stricter policies within the constraints of these overarching institutional

policies. Due to the COVID-19 pandemic, the spring 2020 term is excluded from UB's time-to-degree calculations.

6.2 Requirements for doctoral candidates

In order for students to be eligible for degree conferral, Ph.D. candidates must meet the following criteria:

- Maintain continuous registration until the Ph.D. degree is conferred.
- Complete a minimum of 72 credit hours of graduate study.
- A minimum of 50 percent of the Ph.D. program must consist of courses completed at UB and uniquely applied to that degree program.
- Complete UB's Responsible Conduct of Research (RCR) training requirement.
- Complete all CDSE Ph.D. milestones, including committee approval, project plan approval, oral examination, dissertation prospectus, dissertation proposal, dissertation, and dissertation defense.
- Apply to Candidacy (ATC) within the proper deadline dates for approval at all levels.
- Successfully complete dissertation proposal.
- Complete and orally defend a doctoral dissertation; electronically submit the dissertation to the graduate school for final approval and filing in the UB Institutional Repository.
- Meet all CDSE program requirements throughout the course of study.

6.2.1 Checklist for Ph.D. graduation

- Submit a Ph.D. Application to Candidacy (ATC) to the Graduate School by the appropriate deadlines defined below. The Graduate School must approve your ATC for you to be a candidate for degree conferral officially. When your ATC is approved, you will receive a letter from the Graduate School. If you believe your ATC was submitted, but you did not receive a letter, contact the Graduate School.
- Report any ATC changes to the Graduate School. After your ATC has been submitted to the Graduate school, changes to your advisor, committee members, expected degree conferral date, or future registration must be submitted to the Graduate School for approval using the Change Expected Conferral Date/Amend ATC form.
- Register for at least one credit during the semester preceding your degree conferral date. Fall semester registration is required for February conferral, and spring semester registration is required for June or August conferral.
- Complete the required number of credits. Review your transcript and be sure you have completed the minimum number of credits required for your degree.
- Maintain the minimum GPA. You must have a minimum 3.0 overall GPA in the courses/credits applied toward your degree; your program may require a higher GPA.
- Remediate any incomplete grades or missing grades. Be sure there are no incomplete (I/U) grades or missing grades on your record for courses being applied to your degree program.

6.2.2 Required Training

The following sections outline the required training needed to pass for graduation from the Ph.D. program. Both must be successfully completed and documented on the ATC forms.

6.2.2.1 Responsible Conduct of Research (RCR) Training Requirement

The University at Buffalo graduate school policy states that students in any doctoral program are required to submit successful completion of "Responsible Conduct of Research" (RCR) training when they submit their Application to Candidacy (ATC) form. Any of the following can fulfill this training requirement:

- Enrolling in and passing with a grade of B (3.00) or better SSI 640 Graduate Research Ethics, LAI 648 Research Ethics or RPN 541 Ethics and Conduct of Research or;
- Complete the Collaborative Institutional Training Initiative (CITI) online Responsible Conduct of Research Course (RCR) with an average score of 80% or higher
    - Students completing the CITI online course must supply documentation of its successful completion with their Application to Candidacy.

6.2.2.2 CITI Online Program

The University at Buffalo has an institutional membership in the CITI online RCR program so that students can access the training through the CITI Program website.
Initially, the student needs to register and choose a password, which allows the program to be entered and re-entered as many times as needed. Also, at the time of initial registration, the student is asked to enter his/her name, mailing address, phone number, email address, and UB person number. A database of UB participants is created using that information.

There are four versions of the CITI online RCR course from which the student should choose the version most appropriate for his/her area of doctoral study: biomedical sciences, social and behavioral sciences, physical sciences, or humanities. The RCR program comprises a series of modules consisting of readings and case studies and ends with a quiz covering the material. The program allows the student to enter and exit at any point and to retake the quiz associated with each section. A minimum score of 80 percent is required to pass the online course. Assistance is available online at the CITI website if any technical difficulties are encountered.

Once the student has completed the appropriate version of the CITI RCR program with a passing grade of 80 percent or higher, he/she must print the "Completion Report" from within the CITI program as documentation of successful completion and submit it with the Ph.D. degree Application to Candidacy.

6.2.3 Application to Candidacy

An ATC is required to officially become a graduate for conferral for any student pursuing a master's and/or doctoral degree. Students should file an ATC with the Graduate School (with the help of the Graduate coordinator) no later than their fifth semester in the CDSE program.
Students applying for ATC should submit their paperwork to the Graduate coordinator for review and make sure all supplemental materials are included (transcripts, Ph.D. checklist, etc.).

Committees cannot receive ATCs immediately prior to the expected graduation date. If/when the Graduate School approves your ATC, written notification of the approval will be mailed to you using your name and address information on file in HUB.

6.2.3.1 Amending the ATC

Minor amendments to the ATC (such as adding or deleting anticipated courses or credits) must be formally submitted via a Petition to Amend ATC Form to the graduate school. The director of graduate students or department chair must sign off on this form before being sent to the Graduate School for review.

6.2.4 Time Limits

Asper the graduate school requirements, students enrolled in a doctoral program have seven years from the first registration date in the program, excluding approved leaves of absence, to complete their degree requirements.

Requests for extensions of time limits must be petitioned using a Graduate Student Petition Form with departmental approval through the Director of Graduate Studies. The student must be currently making active progress toward the degree. The petition will be presented to the divisional committee of the student's home department for approval before being submitted to the Graduate School. The petition must delineate reasons for the extension, present a progress schedule, and set a deadline for completion of the program. The extension of the time limit is typically granted for a maximum period of 1 year.

6.2.5 Required Forms for Graduation

CDSE students must complete the following forms in order to meet degree conferral requirements after their program:

1. Application to Candidacy: This form should be submitted after four to six semesters of full-time enrollment. Students should work with the Graduate coordinator to make sure all CDSE paperwork is included and to submit for review to the Graduate School.
2. M-Form (Multi-Purpose Form): This form is submitted to the Graduate School by the department's Graduate coordinator, certifying that the defense of the dissertation was satisfactorily completed and all academic requirements for the degree have been met. This form is signed by the Director of Graduate Studies, advisor, and Ph.D. Committee. The student must also sign the form. This form must be submitted prior to Graduate School deadlines in order to meet the established conferral date.
3. Electronic submission of dissertation: An ETD is an electronic version of a thesis or dissertation. ETDs are formatted like paper theses or dissertations (title page, table of contents, page numbering, tables, figures, references, etc.). However, they are submitted to the Graduate School as a PDF file via our ETD Administrator website.
4. Doctoral degree recipients surveys: The Graduate School requires all doctoral students to complete two exit surveys before their degree can be conferred. The Doctoral Degree Recipients Survey (conducted by the University at Buffalo) collects data on a student's experience in his or her degree program) and the Survey of Earned Doctorates (conducted by various agencies of the United States government) collects information from all doctoral candidates in the US.

Students should refer to the graduate school website to see the table for when conferral materials are due each term.

6.2.6 Dissertation Requirements:

As outlined on the Graduate School website

https://www.buffalo.edu/grad/succeed/graduate/requirements.html

The dissertation should be an original contribution to the field determined by the Ph.D. candidate's department or program. Unlike those in the romance languages and literature department, doctoral dissertations are normally written in English.

There are several style manuals available in the UB Libraries, including Strunk and White, Turabian, and the University of Chicago Press, that answer a host of questions regarding the technical aspects of a properly prepared dissertation. A bibliography is also available, which provides further examples that are more specific to various disciplines (e.g., the Publication Manual of the American Psychological Association). Students should consult the appropriate professional journals and their major professors to determine the most appropriate style within their area of research.

It is the prerogative and responsibility of the candidate and the sponsoring department to ensure that the canons of organization, presentation, and documentation usually prescribed for publication in their discipline are observed. Likewise, the dissertation must be certified as substantially free of errors and ready for publication before submitting it to the Graduate School.

Since 2005, all Master's theses and doctoral dissertations completed by UB students in fulfillment of graduate program requirements have been archived and accessible through ProQuest's dissertations and theses database. Beginning with the June 1, 2018, degree conferral, all theses and dissertations will also be accessible for public access through UB's Institutional Repository. Students will continue to have the option to request a temporary embargo (delayed release) of their thesis/dissertation containing patentable material or content being submitted to peer-reviewed journals or for commercial publication. See the Public Access of Theses and Dissertations and Embargo (Delayed Release) of Thesis and Dissertation policies.

6.2.6.1 Dissertation Formatting Requirements

The Graduate School will accept any self-consistent format following a recognized discipline's conventions. However, general formatting standards are also expected, as outlined in the Graduate School's booklet entitled Guidelines for Electronic Thesis and Dissertation Preparation and Submission pdf.

6.2.6.2 Oral Defense of a Doctoral Dissertation

The oral defense is a public event scheduled by the department and must be attended by the candidate's Ph.D. dissertation committee and, if required, the outside reader. At the department's discretion, the defense-of-dissertation examination may take the form of a seminar with a more varied selection of participants. Examination questions will always include questions arising from the dissertation itself. In many cases, particularly when departments have not required extensive examinations during the student's tenure, questions will be more general and the examination longer.

Once the student schedules their dissertation defense date, time, and location with their advisor and committee, CDSE students must send this information to the Graduate coordinator, along with an abstract of the thesis so that an announcement can be publicly sent out to the CDSE department and the student's home department.

7 ACADEMIC STANDARDS

7.1 Grading Policy

Grades in courses applicable to the degree must be letter grades: A, A-, B+, B, B-, C+, C, D, F, and FX (never attended), carrying quality points of 4.0, 3.67, 3.33, 3.0, 2.67, 2.33, 2.0, 1.0, 0 and 0 respectively. This requirement applies to informal courses as well.

7.1.1 Incomplete Grades

For all graduate courses, an interim grade of incomplete (I/letter grade earned if incomplete is not satisfied) may be assigned if the student has not completed all requirements for the course. An interim grade of Incomplete (IU) shall not be assigned to a student who did not attend the course. The letter grade assigned to the incomplete will become the default grade of record if the incomplete is not changed through formal notice by the instructor upon the student's completion of the course within twelve (12) months after the close of the term for which the incomplete was assigned. The instructor may specify a shorter time frame for the removal of the IU grade.

7.1.2 S/U Grades

SEAS does not allow S/U grades except for Master's projects, Master's thesis, dissertation, internship, or courses taken as supervised research or seminar.

7.2 Scholastic Standing

Exclusive of "S" grades, grades earned in courses counted towards the Student's M.S. program must average a "B" (3.0) grade point average or better to be in good academic standing in the graduate program.

If a student earns an F in any course, they will be required to retake that course and will be put on academic probation. Students may not be required to retake courses where they earn a C+, C, C-, or D, but the cumulative GPA must be at least 3.0. If a student is placed on academic probation due to earning one of these letter grades. In that case, they must earn the minimum grade in the following semester that will allow them to boost their cumulative GPA back up to the 3.0 minimum, or the student is at risk of being dismissed from the program.

7.3 Review of Academic Progress

At the end of each semester, the department will review the progress of all graduate students in the program. Students who are not making satisfactory progress will be notified by email and should meet with the graduate coordinator, their faculty advisor, and/or the Program Director to discuss the matter.

7.4 Probation

If a student’s GPA falls below 3.0 at the end of any semester or the student receives a grade of D or F in any course, they will automatically be put on probation from the start of the next semester. They will be given a target to be reached to continue in the program. Normally, the target will be that the student raises their cumulative GPA to 3.0 or higher by the end of the current semester.

Probation for other causes shall commence from the student being notified in writing by the Program Director. The student will be given requirements for regaining good academic standing. Being on probation is grounds for withdrawal of academic and financial support, if applicable.

Graduate students not meeting the written terms of their academic probation may be academically dismissed from the program by the program director. Such dismissals shall be done in a timely fashion but no later than three weeks after the completion of the term. The Graduate School will be notified in writing of all such academic dismissals.

7.5 Academic Dismissal and Transcripts

A student may be dismissed from the program if any of the following conditions apply:

- A grade of "F" is earned in any course that could be applied toward the degree.
- More than two grades are “C," "D," and/or "U" in courses which could be applied to the degree.
- Probationary status has not been removed after one semester or within the timeframe determined by the Program Director, as noted in the formal letter sent to the student.
- The cumulative GPA for courses that could be counted towards the degree falls below 3.0 at the end of any semester.
- The student is found guilty of academic dishonesty according to Graduate School regulations.
- More than four resigned “R” grades have been obtained in courses that could be applied to the degree.

Students who are dismissed will be given a letter from the Program Director. A copy of the letter will be sent to the Graduate School.

Graduate students who are dismissed for academic reasons from a graduate program will have a "GRD" (Graduate School) service indicator placed on their academic record to prevent future registration.

7.6 Academic Integrity

Academic integrity is a fundamental university value. Through the honest completion of academic work, students sustain the integrity of the university while facilitating the university's imperative for transmitting knowledge and culture based on the generation of new and innovative ideas. When a student's suspected or alleged academic dishonesty arises, it shall be resolved according to the procedures set by the Graduate School. These procedures assume that many questions of academic dishonesty will be resolved through consultation between the student and the instructor (a process known as consultative resolution, as explained below). It is recommended that the instructor and student each consult with the department chair, school or college Dean, or the Graduate School if there are any questions regarding these procedures.

7.6.1 Examples of Academic Dishonesty

a. Previously submitted work. Submitting academically required material that has been previously submitted – in whole or in substantial part – in another course without prior and expressed consent of the instructor.

b. Plagiarism. Copying or receiving material from any source and submitting that material as one's own, without acknowledging and citing the particular debts to the source (quotations, paraphrases, basic ideas), or in any other manner representing the work of another as one's own.
c. Cheating. soliciting and/or receiving information from, or providing information to, another student or any other unauthorized source (including electronic sources such as cellular phones and PDAs) with the intent to deceive while completing an examination or individual assignment.
d. Falsification of academic materials. Fabricating laboratory materials, notes, reports, or any forms of computer data; forging an instructor's name or initials; resubmitting an examination or assignment for reevaluation which has been altered without the instructor's authorization; or submitting a report, paper, materials, computer data, or examination (or any considerable part thereof) prepared by any person other than the student responsible for the assignment.
e. Misrepresentation of documents. Forgery, alteration, or misuse of any University or Official document, record, or instrument of identification.
f. Confidential academic materials. Procurement, distribution, or acceptance of examinations or laboratory results without prior and expressed consent of the instructor.
g. Selling academic assignments. No person shall sell or offer for sale to any person enrolled at the University at Buffalo any academic assignment or any inappropriate assistance in the preparation, research, or writing of any assignment, which the seller knows, or has reason to believe, is intended for submission in fulfillment of any course or academic program requirement.
h. Purchasing academic assignments. No person shall purchase an academic assignment intended for submission in fulfillment of any course or academic program requirement.

Complete policies and procedures regarding academic integrity issues can be found at the following website: https://grad.buffalo.edu/succeed/current-students/policy-library.html.

7.6.2 Academic Integrity Contract

All Master's students will be required to sign and submit an academic integrity contract during the program's first semester. The contract will be distributed to students after orientation. Students who do not submit the contract back by the first Friday of classes will have a departmental hold placed on their HUB student center, preventing future registration until it has been read, signed, and returned to the Graduate coordinator.