



# GRADUATE STUDENT MANUAL

*Department of Materials Design and Innovation*

*University at Buffalo*

*Version 1.0: September 2023*

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## 1. PREFACE

This Handbook outlines the policies and procedures of graduate degree programs offered at the Department of Materials Design and Innovation. All graduate students must be familiar with these policies and procedures and abide by them. It is the responsibility of individual students to know and follow all such rules and policies, both of the Department and the University. Consequently, we require all graduate students entering the department to certify that they have read this Handbook and will be responsible for conforming to its requirements. The student's advisor and the Director of Graduate Studies can help with questions about the program. The availability of advice does not abdicate the student of sole responsibility for completing necessary forms, initiating the formation of committees, honoring deadline dates at various points in his/her graduate studies, and meeting all departmental and graduate school regulations. Students should carefully read this Graduate Student Handbook and the Graduate School Policies and Procedures (available on the Graduate School website at [www.grad.buffalo.edu](http://www.grad.buffalo.edu)) as soon as they enter the program.

The policies and procedures in this manual were adopted by the Faculty of the Department of Materials Design and Innovation in November of 2022. The policies and procedures related to the graduate study included in this manual are effective for all graduate students entering the Department of Materials Design and Innovation after January 1, 2023. The department reserves the right to modify the procedures and requirements outlined in this manual, and such modifications will not be considered retroactive. Should a student needs special consideration regarding any of the policies or procedures outlined in this handbook, they may contact the graduate director.

## 2. INTRODUCTION TO THE DEPARTMENT

The Department of Materials Design and Innovation (MDI) is an interdisciplinary department at the University at Buffalo that pushes the boundaries of traditional approaches in materials science research and education by emphasizing the data-driven perspective of materials discovery and design. MDI was established through the endowment from UB alumnus Erich Bloch, the former director of the National Science Foundation, Vice President of IBM, and Medal of Technology and Innovation holder. MDI is a unique program on materials informatics that links experimental and computational perspectives of materials science and engineering.

**Department Mission:** The mission of the Department of MDI is to train material scientists and engineers in the methods of data-driven discovery, design, and innovation. It is committed to accelerating science-based solutions to solve pressing societal problems such as climate change, environmental sustainability, and public health in a socially responsible manner.

**Department Goals:** The goal of the department is to pioneer a unique learning and discovery framework involving the convergence of materials science and information science — Materials Informatics. Through the lens of data, we explore and discover connections between experiments and modeling for a deeper understanding of existing relationships to uncover information that is not easily detected by experiments or computational methods alone and to detect new trajectories of materials exploration that have not been recognized in the past.

The Department of Materials Design and Innovation is associated with both The School of Engineering and Applied Sciences (SEAS) and the College of Arts and Sciences (CAS). Academically qualified students from all fields of science and engineering are welcome to apply.

### 3. GENERAL INTRODUCTION

The policies and procedures of the Department, the School of Engineering and Applied Science (SEAS), the College of Arts and Science (CAS), and the Graduate School of the University at Buffalo (UB) are listed below and can be found using following links:

- [UB policy Library](#)
- [Policies for SEAS Graduate Students](#)
- [Graduate school policies](#)

The Director of Graduate Studies (DGS) exercises overall administrative responsibility for the graduate program. Students should consult with the DGS when the need arises. However, the students can approach the graduate program coordinator for acquiring forms and signatures.

Department recognizes that some of its requirements and procedures may not apply to all graduate students and that, from time to time, a graduate student has legitimate and reasonable cause to be exempt from a specific requirement or be permitted to fulfill a modified form of a requirement. Consequently, students may petition the Graduate Committee to grant exemptions or changes in certain requirements or procedures. All petitions to the Graduate Committee should clearly state the nature of the petition and offer a compelling justification for the request. The student's advisor must approve all petitions before being submitted to the Graduate Committee. The decision of the Graduate Committee is final in all matters of the Department of Materials Design and Innovation policies, procedures, requirements, and petitions.

Finally, **UB and MDI are strongly committed to [Equity, Diversity, and Inclusion](#)**. In accordance with federal and state laws, no person in relationship with the State University of New York at Buffalo shall be subject to discrimination on the basis of age, religion or creed, color, disability, national origin, race, ethnicity, sex or sexual orientation, marital or veteran status. Any violations will not be tolerated. Students are encouraged to discuss and report (all details are kept confidential) any discrimination with faculty or staff observed within the department.

## 4. YOU ARE HERE! LET'S GET YOU STARTED...

### ***Welcome to MDI and UB!***

MDI Graduate Committee is committed to helping each student on their path towards graduation; hence, the department's core faculty are always available to listen to the questions and concerns of the students. To initiate the process, the students are required to attend the orientation meeting held at the beginning of the Fall (entry) semester and those offered throughout the program. These meetings will help students to

1. understand the timelines and course activities throughout the graduate program.
2. prepare for MDI milestone assessments and monthly MDI-StuFF activities.
3. get information regarding opportunities for research and funding within the department.
4. guide the student with the selection process for a permanent advisor if continuing for PhD.

### **Things to do upon your arrival:**

1. Contact the Director of Administration to register for the first semester's classes – if you have not already done before your arrival. Please note all holds on your HUB account should be removed to be able to enroll in classes. Immunization records must be sent to the student health services. The review and approval of immunization records take a few weeks. Hence, please send the records in advance so that your holds can be released before the semester begins.  
[Student Conduct - Student Life Guide - University at Buffalo](#)
2. International students registering for the first time should report to the Office of International Education in Talbert Hall, Room 210. This office advises on issues related to immigration and visa status. ISS hosts a mandatory orientation for international students.
3. All incoming students suggested attending the Graduate Student Orientation (SEAS) held before the first week of classes. Program-specific orientations will also be offered. Each orientation is mandatory for all students to attend.
4. Contact the MDI Graduate Student Association and register as a member to enjoy the benefits of the MDI GSA community.

**All international students must maintain full-time status during their graduate study at the University at Buffalo.** Don't hesitate to contact the Department or Office of International Education if you have any queries.

### **Program Contacts**

The academic advisor/mentor, assigned on the first week of the academic year will be your primary contact. The director for graduate studies 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.

**Director for Graduate Studies:** Dr. Prathima Nalam, [prathima@buffalo.edu](mailto:prathima@buffalo.edu)

**Graduate Coordinator:** Ms. Laurie Barszcz, [laurieba@buffalo.edu](mailto:laurieba@buffalo.edu)

### **Important Links for Graduate Student Orientation:**

**1. UB Rules and Regulations, Student Code of Conduct, Student Life Gateway, accessibility resources, Counseling Services:**

Designed by Student Conduct and Advocacy

[Student Conduct - Student Life Guide - University at Buffalo](#)

**2. Forms for Graduate Students:**

Designed by Graduate School

[Forms for Students - The Graduate School at the University at Buffalo - University at Buffalo](#)

**3. Estimated Cost of Attendance:**

Designed by Graduate School

[Estimated Cost of Attendance - The Graduate School at the University at Buffalo - University at Buffalo](#)

**4. Financial Aid:**

Designed by Financial Aid

[Financial Aid Cost of Attendance – Financial Aid \(buffalo.edu\)](#)

**5. SEAS Website:**

[School of Engineering and Applied Sciences - UB School of Engineering and Applied Sciences - University at Buffalo](#)

**6. Registrar Website:**

[UB Office of the Registrar \(buffalo.edu\)](#)

**7. UB Directory:**

[Search - University at Buffalo](#)

**8. International Student Services:**

[International Student Services - University at Buffalo](#)

## 5. MASTERS PROGRAM OVERVIEW

### 5.1 Program Objective

MDI Master's Program is designed to educate individuals with disciplinary knowledge in materials and data science. Students are trained to have interdisciplinary perspectives and develop the necessary skills and tools to be able to accelerate the pace of materials discovery and engineering design.

### 5.2 Learning Outcomes

- Students will have disciplinary knowledge in the areas of materials science and data science.
- Students will have the awareness and ability to query and work with databases in materials science.
- Students will acquire operational skills in statistics and data mining methods as applied to materials science.
- Students will have the ability to use computational methods in the analysis of experimental and/or simulation data.
- Students will develop relevant scientific literacy and the ability to communicate in written and verbal formats.

### 5.3 Master's Program Planning

The Department of Materials Design and Innovation currently offers a Master of Science (MS) degree in Materials Science and Engineering. The department currently does not offer any specializations; hence, all students must proceed with similar options toward the completion of their degree. All students joining MDI will be assigned with an **Academic Advisor** at the beginning of their program to help navigate through the academic and personal concerns that may influence performance. A schedule will be set up for the student to meet their advisor within the first 2 weeks of the beginning of each semester and resolve course requirements and backlogs. It should be noted that an academic advisor will be **independent** than your Project/Research advisor. The MDI Academic Advisor is to serve as a support faculty for all incoming graduate students and are there to serve as a point of contact. Full-time students must register for 12 credit hours (usually four courses) per semester for the first two semesters (Fall and Spring) and six credits for the Master's Project (which can be completed either in the Summer or Fall semester). See below for part-time status requirements, internship participation, and others.

**Course Design:** All new Master's students joining the department are required to take the eight core courses, in the specified order, within the first two semesters. At the end of the spring semester, each student can choose a master's project (under the supervision of two faculty advisors). **The eight core courses plus the Master's Project constitute the entire course**



**requirement for graduation.** However, in certain cases, the time to graduate can be extended to account for individual learning ability and other unforeseen circumstances. However, this extension should not be automatically assumed; instead, the student must contact the graduate director and/ or head of the department at the earliest possible time so they can help determine a new timeline for graduation.

***Fall Semester Compulsory Master's Courses***

MDI 501LEC	Introduction to Materials Design and Informatics	3 credits
MDI 502LEC	Quant Structure-Property Relationship Materials	3 credits
MDI 503LEC	Thermodynamics & Molecular Structure of Materials	3 credits
MDI 504LEC	Multivariate Statistics & Materials Informatics	3 credits

***Spring Semester Compulsory Master's Courses***

MDI 505LEC	Computational Materials Chemistry and Physics	3 credits
MDI 506LEC	Kinetics, Microstructure, and Defects	3 credits
MDI 507LEC	Quantitative Methods in Materials Characterization	3 credits
MDI 508LEC	Experimental Design for Materials Development	3 credits

***Summer/Fall Semester Masters Project***

MDI 700TUT	Project Guidance	6 credits
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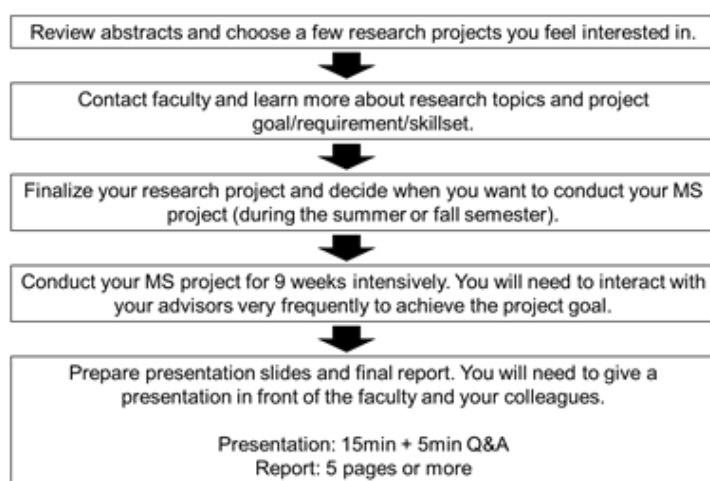
**Details on compulsory project-based learning activities in MDI Master's Program:**

**MDI Interconnect:** INTERCONNECT is a fall-term (end of first semester) project-based learning activity designed with learning outcomes (a) to comprehend and connect concepts between various core courses taught in the fall semester, (b) to employ data science methods to accelerate approaches to develop process-structure-property relations of advanced materials. The end-of-the-semester projects are carefully designed by a cohort of teaching faculty (who participate in the first-semester teaching) and are assigned as team projects (team sizes consist of 3-5 students). The students work on the assigned projects for a period of 3-3.5 weeks under the guidance of the faculty cohort. The last week of classes in the fall semester is exclusively assigned to project design and development. The students are evaluated based on their submitted reports, final presentations, and the learning outcomes rubrics.

**MDI Masters Project (MDI 700):** Upon successfully completing all core courses, the students are eligible to conduct an MDI Master's project. The master project course (MS project hereafter) in MDI provides the opportunity to conduct a research-based project. These projects help strengthen students' ability to merge their knowledge in material sciences with data sciences based on the eight core courses. MS projects are co-designed by two MDI faculties which address one or more of the following core scopes: (i) Material discovery and design, (ii) High throughput

exploration and beyond, (iii) Quantitative structure-property relationships, (iv) Exploring and linking length scales.

The students will be given a list of project abstracts towards the end of the Spring semester and three weeks to select the project. The students are strongly advised to interact with faculty members to discuss the detail of the project(s) they are interested in before making the final selection. MDI offers the MS project in the summer semester (June-July) and fall semester (September to November) to allow students to schedule their graduate study timeline. When registering for the Master's Project, the students



The step-by-step guidance of the MS project for students

typically register for (the major professor's section, MDI 700) for six credit hours. The project faculty cohort makes all final decisions on the project details and duration (progress) of the project. At the end of the MS project, each MS project is evaluated *via* a 15 minutes presentation, the final project report, and the learning outcomes rubrics.

A Master's Project form (form link provided on the MDI website) must be completed and signed by the student and project faculty cohort and then emailed to the Director of Administration so that you may be enrolled in the course.

#### 5.4 General Policies for Coursework

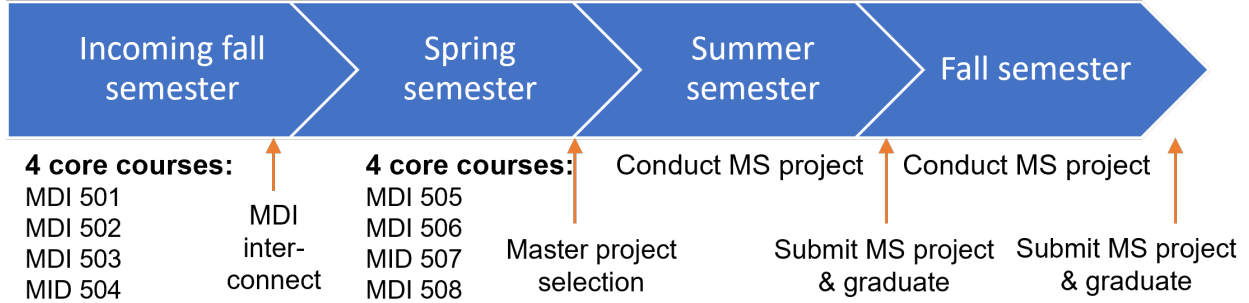
**Undergraduate Courses:** Graduate students may NOT take undergraduate courses for graduate credits (including undergraduate language courses) except certain 400-level courses by petitioning the DGS Graduate students may find it desirable to audit selected undergraduate courses if their background in that area is weak.

**Non-Department Courses:** MDI carefully designs its core courses and master project to provide interdisciplinary education and research experience in material design and engineering. Hence, the MDI graduate program does not recommend non-department courses and transfer of credits into the Master' Program.

## 5.5 Timelines and Milestones for Master's Program

### Timeline for a full-time, regular graduation cycle MS program:

Completion timeline: 12 to 16 months



The Master's degree normally takes three semesters of full-time graduate study but must be completed within no more than four semesters unless a petition for an extension of time is approved in advance by the DGS to the Graduate School. This form is available on the Graduate School website at: [www.grad.buffalo.edu](http://www.grad.buffalo.edu).

The students who wish to receive an MS degree should apply for conferral in HUB and are also responsible for obtaining all necessary departmental signatures, documents, and a complete UB transcript with a minimum credit average of 3.0 to receive the degree. Please refer to the step-by-step guide on [applying for conferral](#) in HUB.

Graduation Term	Application Deadline	Conferral Date
Fall	October 15	February 1
Spring	February 22	June 1
Summer	July 15	August 31

*+ Graduate School deadline dates are subject to change, so check the Graduate School website regularly for deadline dates once you have selected a degree conferral date.*

## 5.6 Others (lab volunteering and internships)

Upon arrival at MDI, students can volunteer (without financial assistance) with a preferred faculty/research area. A student must approach the faculty regarding the possibility of becoming a lab volunteer. The openings for paid research projects (per hour or by semester) or internships (from companies) will depend on the funding opportunities with the MDI faculty. The faculty will advertise the positions, subject to their availability, to the students via email or in class.

## 5.7 Continuous registration and leave of absence [\[Form\]](#)

All graduate students must register each semester (excluding the summer) until they receive their degree or request a leave of absence before the semester for which the leave is sought. Such leaves are granted by the Department (DGS) and the Committee of the Graduate School for compelling reasons. A student cannot be formally on leave during the semester preceding the award of their degree.

## 5.8 Part-time Students

Most students in the program are full-time students. In some instances, students may be admitted on a part-time basis. Students admitted on a part-time basis must fulfill the requirements as follow:

1. Completion of eight core course requirements within the first two years
2. Master's Program must be completed within five years from the start of the course.

The timing of completion of additional requirements will be handled and approved by the Materials Design and Innovation Graduate Committee. Note that the Part-time students are NOT eligible for department funding

## 5.9 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. *The Master Projects are graded as Satisfactory (S), Unsatisfactory (U), or Incomplete (I). 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.***

***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.

***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. 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.

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.

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.

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

**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 academic advisor, Graduate Director/ Graduate Co-ordinator to discuss the matter and confirm requirements for course registration in the following semester.

**Academic Integrity:** You should be familiar with the university policies on academic integrity. The details are given at the end of this document and the Policies for graduate students are also available at: [Policy Library - The Graduate School at the University at Buffalo - University at Buffalo](#) Any violation of these policies, including but not limited to cheating on any course deliverable (e.g., homework project, exam, etc.), may result in automatic failure of the course.

**Accessibility Resources:** If you have any disability which requires reasonable accommodations to enable you to participate in this course, please get in touch with the Office of Accessibility Resources, 5 Norton Hall, Phone: (716) 645-2608, and also notify the instructor of the course. The office will provide you with information and review the necessary arrangements for reasonable accommodations.

## 6. TRANSITION FROM MASTER TO DOCTORAL PROGRAM

### 6.1 Qualifying Exam/ PhD Comprehensive Exam

Any graduate student (registered as a master or PhD candidate) after completing the eight core courses is eligible to appear for the PhD comprehensive exam. The student **must pass** this exam before they can continue as a PhD candidate. This exam intends to evaluate if the students can conceptualize the course contents and apply such skills to formulate a research problem or state hypothesis. MDI comprehensive exam intends to test the

- **Ability of the student to understand and apply the concepts** learnt in 8 compulsory MDI courses to a material science/design problem.
- **Ability of the student to use data science tools** to a material science/design problem

The student gets two attempts to clear the exam.

- The 1<sup>st</sup> attempt can be given immediately after the completion of eight core courses, i.e., at the end of Spring Semester (3<sup>rd</sup> or 4<sup>th</sup> week of May).
- The students who could not pass the first round can make an 2<sup>nd</sup> attempt at the end of the Fall semester, i.e., during 2<sup>nd</sup> - 3<sup>rd</sup> week of December.
- A 3<sup>rd</sup> attempt for the exam is not available.

The exact date will be announced at least one month before the exam. The results of the exam will be available within 15-20 days after the day of exam. The students who pass the comprehensive exam in Spring semester should continue with their Master's project either in the summer or fall semester. During this period, students are strongly encouraged to enter discussions with the department faculty and select the appropriate advisor to continue their PhD studies.

If not qualified, the students after completion of masters project should go ahead and submit to Graduation conferral through HUB for obtaining a Master's degree from MDI. For International students, this will also allow sufficient time to file for OPT with immigration.

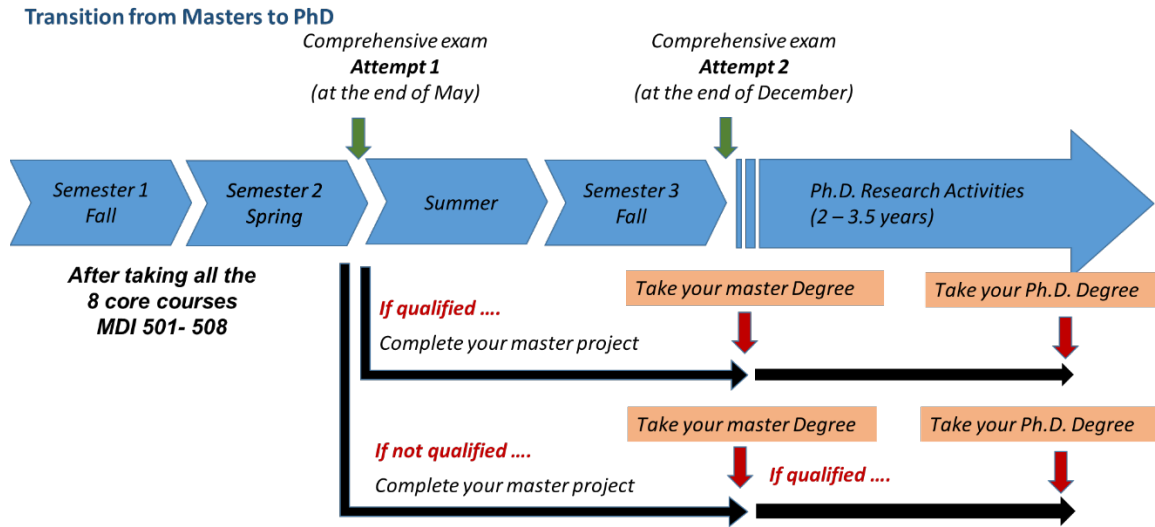
### 6.2 Exam Pattern

A comprehensive list of concepts (~ 40-45) will be made available to students at least 1.5 month prior to the exam. The topics are short-listed by the teaching faculty involved in MDI 501 to MDI 508 courses. The list of topics helps to present the focus directions for the students. The faculties will be available for office hours (by appointment) atleast one month prior to the exam date.

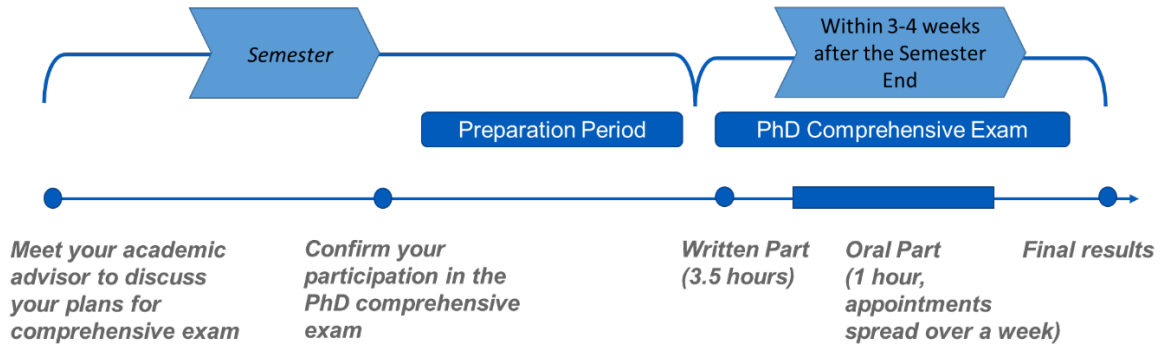
A holistic approach to evaluate the student's comprehensive understanding of material science and data science concept is adopted. The exam is divided into 2 parts. In part 1, the student are required to give a 3.5-hour in-person written test. Following the exam, in Part 2, the student has to appear for an oral exam (30 – 60 min) in front of a committee consisting

of at least 2-3 faculty per participant. The overall score is based on the combinatorial performance of the student in both parts.

**Timelines for the transition to PhD Program at MDI:**



**Preparatory timeline:**



**6.3 Selecting an Advisor [Form]**

All incoming MDI student (Master's or PhD) will go through the same course program. However, the student can contact and interact with any MDI faculty, in the form of discussions or lab volunteering, throughout the course of the program. This process will help the student to identify the potential supervisor and vice versa. The funding and the lab volunteering activities/load are at the advising faculty's discretion. However, upon passing the qualifying PhD comprehensive exam, the student must identify an advising faculty member to continue the registration for PhD research credits. The student should complete the graduate advising form and submit it to the Director of Administration in MDI to enroll for the continuing semester.

## 7. DOCTORAL PROGRAM

### 7.1 Program Overview

The Doctoral program allows research programs in all traditional and the state-of-the-art materials science subjects. However, PhD candidates are advised to explore concepts with a perspective of statistics, interpretation of databases, and data mining methods, if possible.

### 7.2 Learning Outcomes

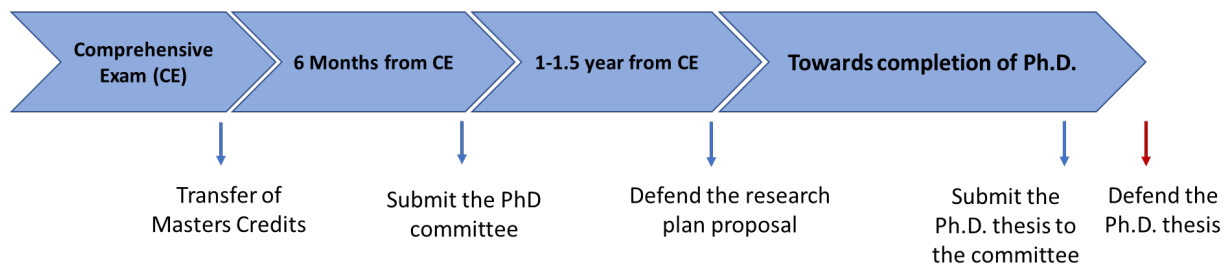
- Students will have in-depth knowledge of materials and data sciences, as well as the knowledge needed to integrate these fields.
- Students will have the critical thinking skills to define a research question and an appropriate strategy for developing a viable research proposal.
- Students will learn how to identify a materials science problem, either computational or experimental, and how an interdisciplinary approach that includes data analytics can find a solution to that problem.
- Students will develop familiarity with the interrelationship between experimental and computational perspectives of any given research problem in materials science.
- Students will have the ability to learn to write clearly and verbally present advanced scientific concepts.

### 7.3 PhD Program Planning

To start PhD at MDI, a student must have a minimum of 3.0 GPA in the MDI Master courses and need to pass the MDI comprehensive exam. To attain the PhD degree, the admitted doctoral student should complete all the academic requirements described below. In total PhD candidate is required to complete 72 credits. The 30 credits from the Master's Program will be automatically transferred toward the PhD credits. The remaining 42 credits should be completed by taking at least nine credits from the coursework and the rest while working on a research dissertation. The timeline and key milestones are summarized below:

#### Timeline for a Full time, PhD Program:

PhD completion timeline: 2.5-4 years





## 7.4 Course Requirements

**Available course credits in MDI:** MDI offers two PhD level courses in **MDI 500:** *Special Topics on Soft Matter Design* and *Fabrication and Mesoscale Materials Design*. These courses are offered alternatively every Fall semester. The students have to register for **MDI 703** in the semester they plan to submit the research proposal and for **MDI 704** in semester for their final defense.

**Undergraduate Courses:** Graduate students can NOT take undergraduate courses towards PhD graduate credits (this includes undergraduate language courses). However, graduate students may audit selected undergraduate courses if their background in that area is weak.

**Non-Department Courses:** Students may take courses in other departments as a part of the regular program. Such enrollments should be discussed with the Faculty Advisor and department chair.

**Transfer Credits:** MDI program currently does not allow transfer credits toward PhD course requirements, but under extremely unusual circumstances it may be considered; but only after the approval of the DGS and department chair.

**Independent Study:** Independent study is defined as individualized student work under the guidance of a faculty member. These courses are intended to pursue topics not currently offered through regular coursework at UB. Independent study may be the focal point in the design of an individual program, or it may merely add desired depth or breadth to a student's formal degree program. An independent study course should be arranged with the instructor before registering. Prepare a written statement of the topic to be covered, the methodology, and the expected results, including a bibliography and the form of evaluation of work. Informal courses can be variable credit hours, so the number of credit hours you should register for should be discussed and agreed upon before registration. An "Independent Study" form must be completed, signed by the instructor, the DGS, and placed in the student's file with the Graduate Academic Coordinator by the end of the semester you are registered for an independent study/readings course. The Graduate School requires this statement to be submitted together with the PhD Application to Candidacy forms.

## 7.5 Formation of the PhD Committee [\[Forms\]](#)

By the end of one year after the comprehensive exam, the PhD candidate must select a committee of at least three faculty members under the guidance of the academic advisor. The academic advisor can help identify faculty members who share an interest in the topic, and who would be willing to review the dissertation and serve on the examining committee. A student can always elect to have more faculty members on their committee than specified during the initial registration. These additional committee members do not have to be members of the graduate faculty or even faculty at UB. The PhD committee will play a major role in setting

requirements for the successful completion of your program. Be sure to follow their advice carefully.

The student is required to select their graduate committee among the faculty list identified in [SEAS](#) and [CAS](#) faculty membership rosters. The graduate student should complete the committee form, obtain the appropriate faculty committee signatures and submit it to the Graduate Program Coordinator.

### **7.6 Research Plan Proposal [\[Form\]](#)**

Each PhD student is required to complete the Research Plan Proposal within 1-1.5 years after qualification of the comprehensive exam. The aim of the research plan proposal is for the student to summarize the possible research directions that the student plans to take during the course of the PhD. The proposed directions have to be supported with sufficient background literature, appropriate hypotheses, and, if available, initial/prior results. The student must submit a report (optional) and defend a research plan of professional quality in front of the selected PhD committee. The research plan defense is open to the department, and prior notification should be sent out to the department with the help of the graduate program coordinator. The timeline to completion must be proposed in the report and the presentation after the discussion with the advisor. If the committee asks for significant changes in the research plan, the student should work with the advisor to resubmit the written report to the committee for approval. Upon receiving approval from the committee, the student is required to submit a PhD Application for Candidacy. The graduate student should obtain his/her advisor's signature and appropriate faculty committee signatures, then give the form to the Graduate Program Coordinator.

### **7.7 Doctoral Dissertation**

The doctoral dissertation is a substantial and original work of professional quality required of all PhD students. The dissertation is expected to be an original contribution to knowledge and to meet other criteria of professionalism and competence. A description of the general expectation of a PhD dissertation may be found on the Graduate School website ([PhD Dissertation Expectation](#)). After satisfactory defense and dissertation approval by committee members, all PhD students must submit electronic copies of their dissertations to the graduate school. It is the student's responsibility to ensure that the dissertation conforms to all format requirements of the Graduate School.

*Dissertation Defense:* Once the dissertation is completed in at least penultimate form, it must be defended in a public oral defense. The oral defense of the dissertation may only be scheduled when Committee members agree the student is ready based on the draft. The Graduate School and the Department of Materials Design and Innovation require that two weeks' notice be given for the dissertation defense, and the defense must be scheduled in a place and time that is accessible to the public. If, following the oral defense, the dissertation requires changes, the

committee must specify these clearly, and give its' approval only after these edits have been made.

## 7.8 Grades and Other Details

**Grades:** A "B minus" grade is considered the minimum satisfactory grade in graduate courses. All graduate students must maintain at least a 3.0 GPA throughout their PhD coursework. For grading and academic ethics policies, refer to Section 1.4.

**Incompletes [Form]:** Students are expected to complete coursework on time. A grade of 'I' (i.e., Incomplete) may be given in instances where the student has not been able to complete all the assigned projects and/or examinations within a course due to illness or other unforeseeable and compelling circumstances. The student should discuss the reason for their incomplete attempt with the instructor and not assume. A grade of Incomplete cannot be assigned for dissertation guidance, thesis, or projects in which the University requires continuing registration. Faculty should award the grade of "S" prior to completion of this work.

The course requirements for an incomplete grade must be completed within twelve months after the close of the term for which the incomplete is assigned. After this period, the Incomplete (I) grade will automatically be changed to an Unsatisfactory (U) grade. If there is a valid reason for waiving the deadline for removing an incomplete grade, in that case, the student may petition the Department's Graduate Committee before the deadline.

**Continuous Registration and Leave of Absence [Form]:** All graduate students must register each semester (excluding the summer) until they receive their degree or must request and receive a leave of absence prior to the beginning of the semester for which the leave is sought. Such leaves are granted by the Department DGS and the Committee of Graduate Studies of the Graduate School for compelling reasons. The form must then be forwarded to the Office of the Registrar by the last day of classes of the semester in which the leave is to begin. A student cannot be formally on leave during the semester preceding the award of their degree.

Normally, leaves are granted for a maximum of one year but may be extended for up to one additional year if circumstances warrant. Each department may establish its policies within the limits of these guidelines. All leave requests must be supported by adequate documentation.

Students approved for a leave of absence remain liable for any outstanding tuition and fees. Before applying for a leave of absence, international students are advised to consult with International Student and Scholar Services, 210 Talbert Hall, North Campus, 716-645-2258.

**Returning Students [Form]:** Failure to register for classes or secure a leave of absence by the last day of classes of the semester in which the leave is to begin will result in the student losing their access to register for courses in a future semester. To regain registration access within a subsequent five-year period, the student's home academic department must file a semester record activation request on behalf of the student (see the ["Returning Student Semester Record Activation and Associated Fee" section](#)).

**Part-time Students:** Most students in our program are full-time students. In some instances, students may be admitted on a part-time basis. PhD Students admitted (after successful completion of the comprehensive exam) must complete all PhD requirements and dissertation submission within seven years.

### 7.9 PhD Checklist for Graduation

This checklist is designed to assist you as you prepare to graduate with a PhD from the UB. You are responsible for ensuring that all requirements are met and that all necessary paperwork has been completed and filed on time.

1. **Submit a PhD Application to Candidacy (ATC):** The student must submit the [PhD application for Candidacy \(ATC\)](#) to the Graduate School by the Graduate Coordinator within the appropriate deadlines defined below. You must provide to the Graduate Academic Coordinator your A.T.C., the [Certificate of Full-Time Status](#) Transcript, the [CITI Program Certificate](#), and the transcript provided by your department. 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 an email from the Graduate School. If you believe your ATC was submitted, but you did not receive a letter, contact the Graduate School.

ATC is due on March 1 for June (spring) conferral.

ATC is due on July 1 for the August (summer) conferral.

ATC is due on October 1 for February (fall) conferral.

2. **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 via the Graduate Coordinator for approval using the [Change Expected Graduation Term or Amend the ATC. \(PhD Students\)](#)
3. **Register for at least one credit during the semester** preceding your degree conferral date. Fall semester registration is required for the February conferral, and spring semester registration is required for the June conferral or September conferral.
4. **Complete the required number of credits.** Review your transcript and be sure you have completed the minimum number of credits required for your degree.
5. **Maintain the minimum GPA.** You must have a minimum 3.0 overall GPA in the courses/credits being applied toward your degree; your program may require a higher GPA.

6. **Remediate any incomplete grades or missing grades.** Be sure that there is no incomplete (I/U) grades or missing grades on your record for courses that are being applied to your degree program.

**Electronic submission of your dissertation:** Submit your dissertation to the graduate school via the ETD Administrator website.

**Doctoral degree recipients' surveys:** Complete and submit both online surveys.

Go to: [www.grad.buffalo.edu](http://www.grad.buffalo.edu) Graduate School for the appropriate deadlines for submission of your dissertation and surveys.

### 7.10 Summary of the key documents

*The following forms are available on the [UB Graduate School website](#)*

1. **Certification of Full-Time Status** When a student has completed all coursework and has filed an Application to Candidacy/Applied for Graduation, the student can fill out this form to be considered "full-time" by UB for the purpose of loan deferral or immigration purposes. The form must be signed by the graduate student's advisor and approved by the DGS. This form should be given to the Graduate Program Coordinator for DGS approval.
2. **Application to Candidacy and Petition to Amend an Application to Candidacy** The Application to Candidacy should typically be filed after completing advanced exams for PhD students. After filing your ATC, if there are any changes such as a change of advisor or committee members, change in conferral date addition, or deletion of credit hour registration, then you must fill out this form, obtain your advisor's signature, and bring it to the for DGS approval. Once signatures are obtained, please provide the Graduate Program Coordinator with the amended ATC.
3. **M Form** This form verifies that you have completed all departmental requirements for your degree and that your dissertation has been defended and accepted in its final form by your major advisor and committee. For PhD students, the Graduate Coordinator will prepare the M form for the public defense date.
4. **Petition for an Extension of Time Limit to Complete Degree Program** UB gives seven years (including MS coursework) to complete a PhD degree. Student must attach a written statement documenting the following: (a) the cause of delay in completion; (b) a detailed description of work completed thus far; (c) a detailed month-to-month plan to be completed from now until the new anticipated completion date and (d) written endorsement from the Major Advisor regarding work completed thus far and the feasibility of the student's completion plan. The student should have the Major Advisor sign the form. The graduate student should bring the form and all attachments to the Graduate Program Coordinator for DGS approval.
5. **Petition for a Leave of Absence** If applicable, this form must be filled out and signed by the graduate student's Major Advisor and brought to the Graduate Program Coordinator for DGS

approval at least two weeks before the last day of the semester in which the leave is to begin. Normally, leaves are granted for a maximum of one year but may be extended for up to one additional year if circumstances warrant.

## Academics 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 the transmission of knowledge and culture based upon the generation of new and innovative ideas. When an instance of suspected or alleged academic dishonesty by a student arises, it shall be resolved according to the following procedures. 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 Academic Integrity Office and/or the Office of Student Advocacy for guidance and assistance [Office of Academic Integrity](#).

**Examples of Academic Dishonesty** include, but are not limited to, the following:

- **Aiding in academic dishonesty.** Taking action that allows another student to engage in the act of academic dishonesty, including, but not limited to, completing an examination or assignment for another student or stealing an examination or completed assignment from another student.
- **Cheating.** Includes, but is not limited to: (1) use of any assistance not authorized by the course instructor(s) in taking quizzes, tests, or examinations; (2) dependence upon the aid of sources beyond those authorized by the course instructor(s) in writing papers, preparing reports, solving problems or carrying out other assignments; or (3) stealing tests or other academic material belonging to the course instructor(s).
- **Falsifying 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.
- **Misrepresenting documents.** Forgery, alteration, or misuse of any university or official document, record, or instrument of identification.
- **Plagiarizing.** 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.
- **Purchasing academic assignments.** Purchasing an academic assignment intended for submission in fulfillment of any course or academic program requirement.
- **Selling academic assignments.** Selling or offering for sale any academic assignment to any person enrolled at the University at Buffalo. No person shall offer any inappropriate assistance in the preparation, research, or writing of any assignment, that the seller knows, or has reason to believe, is intended for submission in fulfillment of any course or academic program requirement.
- **Submitting previously submitted work.** Submitting academically required material that has been previously submitted, in whole or in substantial part, without prior and expressed consent of the instructor.