ISE GRADUATE MANUAL

2025

Version 3.0

Department of Industrial and Systems Engineering

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Preface

This handbook is based on the policies and procedures of the University at Buffalo (SUNY), the School of Engineering and Applied Sciences, and the Department of Industrial and Systems Engineering as of February 2025. These policies are subject to change. No person, in whatever relationship with the University at Buffalo (UB), shall be subject to discrimination on the basis of age, creed, handicap, national origin, race, religion, sex, marital or veteran status.

The contact information of all faculty and staff can be found on the UB ISE People webpage. A summarized list of contacts can be found in the Contact Information page. Certain contacts are presented below for convenience.

Name	Title	E-mail	Purpose
Dr. Chi Zhou	Director of Graduate Studies	chizhou@buffalo.edu	Questions specific to graduate program
Deanie Hedrick	Graduate Coordinator	hedrick@buffalo.edu	Questions regarding CPT, OPT, course registration, graduation, full-time status
Mylous Hairston	Coordinator, Communications and Student Life	mylousha@buffalo.edu	Questions regarding social media, our website, marketing, and event planning
Venus Russin	Engineering Management Program Coordinator	russin@buffalo.edu	Course scheduling and Engineering Management academic advisement
Eliza Lefebvre	Academic Coordinator	elefebvr@buffalo.edu	Questions regarding student employment, assistantships, and tuition payments
Lei Shao	Procurement Specialist	lshao@buffalo.edu	Questions regarding scholarships, fellowships, assistance in purchasing, maintenance requests, and room scheduling
Kathrine Ohms	Director of Administration	kvloera@buffalo.edu	Questions regarding student employment and student accounts

1. Introduction

The UB Department of Industrial and Systems Engineering (ISE) offers a number of options to future leaders to pursue graduate study commensurate with their career goals. Specific strengths of the program are in the areas of operations research, human factors and ergonomics engineering, production systems and advanced manufacturing, general industrial engineering, and engineering management. The PhD degree is offered in Industrial Engineering, and the Master's degrees are offered in Industrial Engineering (Master of Science, or M.S.), and in Engineering Management (Master of Engineering, or M.E.).

2. Purpose of the Graduate Manual

This graduate manual provides requirements, policies, and procedures adopted by the faculty for current ISE graduate students for successful completion of graduate degrees. Additional information concerning graduate school requirements may be found on the [ISE Department webpage](#) and the webpages of the [UB Graduate School](#). If there is any doubt regarding the interpretation of any regulation or requirement in this manual, or if there are questions about the graduate program involving matters not covered in this manual, please consult the ISE Director of Graduate Studies (DGS), or the ISE Graduate Coordinator.

It is each individual student's responsibility to be familiar with all university policies, procedures, and requirements. The provisions of this manual do not constitute a contract, expressed or implied, between any applicant or student and the UB ISE Department. The university and the ISE Department reserve the right to change any of the provisions, schedules, programs, courses, rules, regulations, or fees whenever university or departmental authorities deem it expedient to do so.

3. Administration of ISE Graduate Programs

The graduate program is administered by the Graduate Affairs Committee, which is also charged with the responsibility for resolving conflicts that may arise regarding policy or procedural issues. The ISE DGS and members of the Graduate Affairs Committee are appointed by the ISE Department Chair. The ISE DGS is responsible for proposal development and implementation of requirements, policies, and procedures adopted by the ISE faculty, graduate program assessment, and student advisement. The DGS chairs the Graduate Affairs Committee, which makes, or provides recommendations to the Department Chair on, all admission decisions. The Graduate Affairs Committee also shares with the DGS the responsibilities for advising incoming graduate students and providing concentration-specific advice. The Graduate Coordinator serves as the assistant to the DGS, maintains the graduate program, and administers course registration, grade changes, and other procedures according to the graduate program and Graduate School requirements.

4. Concentrations and Tracks

4.1 Concentrations

A concentration is a specific area of study that a Masters level student may choose to specialize in for their degree program. There are five concentrations available to students: Human Factors (HF), Operations Research (OR), Production Systems (PS), and General Industrial Engineering.

- **Human Factors** Engineering applies industrial and systems engineering, physiology, psychology, and computer science to the design of working and living environments with explicit consideration of the physical and mental characteristics of users. ISE students focus on areas such as human-automation interaction, interaction design, mathematical modeling of human performance, human reliability, industrial safety, workplace design, cognitive engineering, and biomechanics.
- **Operations Research** is the application of scientific and mathematical methods to the study and analysis of problems involving complex systems. Students interested in Operations Research apply methods such as mathematical programming, stochastic modeling, and discrete-event simulation to the solution of problems in complex areas including logistics, supply chain optimization, long-range planning, energy and environmental systems, urban and health systems, and manufacturing.
- **Production Systems** engineering tackles the challenges in manufacturing service and healthcare systems through the application of the engineering sciences: e.g., analytical modeling, design, advanced manufacturing, and information and knowledge-based methods. Students focus on a variety of production systems areas including: production planning and scheduling, sustainable manufacturing, engineering design, additive manufacturing, 3-D printing, cyber manufacturing, nanomanufacturing and biomanufacturing, lean six sigma, and healthcare systems and global health and equity.
- **Data Analytics Engineering** is designed to prepare graduates for the growing need in various industries for professionals with advanced data analytics skills. These professionals can transform large streams of data into understandable and actionable information to aid decision-making. The key sectors that require such professionals include healthcare, smart manufacturing, supply chain and logistics, national security, defense, banking, finance, marketing, and human resources.
- **General Industrial Engineering** is designed for students who want flexibility in their course of study. These students have no specific course requirements; rather, they are required to complete a minimum of 7 courses in the department.

4.2 Choosing a Concentration

- **MS students:** MS students may indicate what concentration they would like to pursue on their initial application. MS students can confirm, select, or change concentrations during introductory departmental orientation. In order to change concentration after the

introductory departmental orientation, the student must fill out a track/concentration change form and wait to receive form approval from the ISE DGS.

- **PhD students:** PhD students must indicate their desired concentration (Human Factors, Operations Research, or Production Systems) on their initial application.

4.3 Tracks for MS/ME Students

A track defines the culminating experience for a Masters level student. Every student is required to have a culminating experience as part of their graduation requirements. There are 3 tracks: portfolio, project, and thesis. All ME students must graduate through the project track. All MS international students start the program in the project track; this allows international students to apply for Curricular Practical Training (CPT, see Section 9.1). If an international student does not receive a qualifying CPT internship by the application deadline in their third semester, and also, if they have not been recommended to complete a thesis, they switch to the portfolio track and are required to complete a professional portfolio highlighting their program accomplishments. Domestic students are always portfolio track students unless they are recommended to complete a thesis. They do not have internship eligibility restrictions.

- **Project Track:** The project track is for MS international students participating in CPT, or ME students. The MS students register for IE 591; the ME students register for IE 592. While on a CPT, students earn at least 1, and up to 3, IE 591 or IE 592 credits. (Note: Individual Problems credits do not count for satisfying this project credits requirement).
- **Portfolio Track:** The portfolio track is for domestic or international students who want to complete a portfolio as their culminating experience. F-1 portfolio track students may participate in part time CPT only after 2 full time academic semesters. There is no credit associated with completing a portfolio.
- **Thesis Track:** A student must be recommended to the DGS by a faculty member to complete a thesis. The faculty member determines the credit amount and expectations for a successful thesis. Thesis students register for IE 559/560 and may take a maximum of 6 credits to earn their degree.

4.4 Choosing a Track for MS Students

- **International MS Students:** All international students begin in the Project track. However, the students are welcome to explore the possibility of working with a faculty member on a thesis. If an international student is recommended by a faculty member to complete a thesis they must fill out a track/concentration change form and receive approval from the DGS. If an international student does not receive a qualifying internship by the CPT deadline in their third semester, they automatically switch to Portfolio track and complete the portfolio at the end of their third semester.
- **Domestic MS Students:** All domestic students begin in the portfolio track. However, the students are welcome to explore the possibility of working with a faculty member on a

thesis. If a domestic student is recommended by a faculty member to complete a thesis they must fill out a track/concentration change form and receive approval from the DGS.

- **ME students (in-person and online):** All ME students are project track students – there is no portfolio or thesis track.

5. Course Registration/Enrollment

Students may self-register, request force registration, or email the Graduate Coordinator to register for courses.

5.1 When to register

Newly admitted students are able to register after attending the ISE new students orientation. Returning students may register on the first day registration opens for the upcoming semester. Dates may be found on the Registrar's website.

5.2 How to register

- **Self-registration:** An extensive list of course offerings and descriptions may be found in the ISE Course Descriptions webpage. A comprehensive guide to self-registration in HUB may be found on the HUB Student Center Training Guides page.
- **Force Registration:** All force registration requests may be filed on the SEAS Portal launchpad. A student may need to force register because: (a) They are requesting registration for a course outside of ISE; (b) They are unable to register themselves for a course (i.e. Project Guidance or Individual Problems); or (c) They have received approval from the faculty member to register for the course, but need the Graduate Coordinator to complete their registration.
- **Holds:** Holds prevent a student from registering. Learn more about holds here: https://www.buffalo.edu/registrar/instructions-for-using-HUB/holds.html A student cannot register until all holds on their HUB account are cleared; this cannot be bypassed by faculty or staff.

5.3 Continuous Registration Requirement

Students must then officially register every semester for the appropriate courses according to established registration procedures and within the deadline dates announced by the Office of the Registrar. Graduate students must register for a minimum of one credit hour each fall and spring term until all requirements for the degree are completed.

5.4 Leave of Absence

If continuous registration is impossible at any time, the student must secure a leave of absence from the Office of the Registrar. Failure to secure a leave of absence by the end of the semester in

which the leave is to begin will result in a $350 reactivation fee being assessed to the student's account when the student subsequently registers for classes. Students may not be on a leave of absence in the semester immediately preceding degree conferral. Students may request a waiver of continuous registration by filing the Graduate Student Petition for Waiver of Continuous Registration with the Graduate School. A request for a leave of absence must be requested through the DGS using a Graduate Student Petition for a Leave of Absence form. The form must then be forwarded to the Office of the Registrar by the last day of classes 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. Students approved for a leave of absence remain liable for any outstanding tuition and fee charges.

International students: International students must consult and receive approval from International Student and Scholar Services ISS prior to applying for a leave of absence. Failure to either register for classes by the appropriate deadlines 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 classes in a future semester.

5.5 Registration Prior to Degree Conferral

Students must be registered for at least one credit in the term immediately prior to degree conferral as indicated below:

- Fall term registration is required if a student intends to finish degree requirements in time for the February degree conferral.
- Spring term registration is required if a student intends to finish degree requirements in time for the June or September degree conferral.

5.6 Elective Courses (Electives)

An elective is any course that is outside of the core course requirement for a Master's or Doctoral degree in ISE. Note: only a maximum of 3 electives from outside of ISE are counted towards the 30 required credits for the MS and ME degrees.

- **SEAS Courses:** Any courses taught by the School of Engineering and Applied Sciences (SEAS) are automatically approved to count as an elective. SEAS Courses are those offered either by the School itself (EAS courses) or by a department among Biomedical Engineering, Chemical and Biological Engineering, Civil, Structural and Environmental Engineering, Computer Science and Engineering, Electrical Engineering, Engineering Education, Industrial and Systems Engineering, Materials Design and Innovation, and Mechanical and Aerospace Engineering. Any course outside of SEAS must be approved by the DGS. To request an approval, a student fills out the ISE Elective Course Approval

Form. The student will then receive an email with approval or rejection and the reason for the decision.

- **School of Management courses:** The School of Management does not allow non-majors to enroll in MGG or MGS courses. Among MGO (Operations Management) courses, MGO 630 "Operations and Service Management" is not an allowed elective because the ISE Curriculum offers much material in Operations Research in itself. MGO 631 "Production and Inventory Planning" is not an allowable elective because the IE 505 "Production Planning and Control" course offers very similar material with more rigor, and hence, is of priority to ISE students. MGO 632 "Strategic Quality Management" is not an allowed elective because the IE 509 course offers very similar material with more rigor, and hence, is of priority to ISE students. All other Management courses are subject first to the ISE DGS approval by filling out the ISE Elective Course Approval Form. Note that even with an ISE DGS approval – students may not be able to enroll due to the limited availability of seats during the first week of classes. If a student receives approval to take a management course, the Graduate Coordinator will have the most up-to-date information on enrollment, how long the wait for registration might be, and how likely it is that any seats might open. ISE students are not to contact the School of Management about this, and will only solicit help from the ISE Graduate Coordinator.
- **Other courses at UB:** If the student receives DGS approval to enroll in a non-SEAS or non-School of Management course, they must contact the department that teaches the course for enrollment. The ISE Graduate Coordinator is not able to register students for courses outside of the ISE department.

5.7 Informal Courses

Graduate students may have the opportunity to take what are often called informal courses. These courses are not taught on a regular basis or are customized for the student, and thus may not appear in the University course catalog. Informal courses are usually titled Independent Study, Individual Problems, and Special Topics. If a student and a member of the faculty share an interest in a topic that is not a part of the department's formal course offerings, the student may wish to investigate the possibility of completing an individual course for academic credit. If the faculty member agrees to supervise the work, the student should register for IE 501 (Fall) or IE 502 (Spring) as an M.S. student, or for IE 601 (Fall) or IE 602 (Spring) as a PhD student. These courses are variable credit offerings, and require the written consent of the instructor. Do not sign up for such a course without first talking to the instructor.

- Informal courses may count towards degree requirements at the discretion of faculty.
- A maximum of six credit hours of informal course work may be applied toward the minimum 30 credit-hour requirement for the Master's Degree.

5.8 Resigning a course

Graduate Students have the prerogative to resign any course for which they have registered without GPA penalty through the end of the 11th week 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.

5.8 Incomplete (I) grade

For all graduate-level courses, an interim grade of incomplete (I) may be assigned if the student has not completed all requirements for the course. A grade of I can be assigned only if the student has a passing average in course requirements already completed and successful completion of unfinished coursework could result in a final grade better than the default grade. The instructor shall provide the student specification, in writing, of the requirements left to be fulfilled. An interim grade of I shall not be assigned to a student who did not complete assignments due to non-attendance in the course.

Assignment of an incomplete grade is at the discretion of the instructor. The instructor must specify a default grade when the I grade is submitted. A default grade is the letter grade the student will receive if no additional coursework is completed and/or a grade change form is not filed by the instructor. The default grade can be A-, B+, B, B-, C+, C, C-, D, F, S or U.

The default grade shall become the grade of record if the I grade is not replaced by a permanent grade 12 months after the close of the term in which the I was assigned according to the following chart:

Courses Taken in (Semester):	Will default in 12 months on:*
Summer	Aug. 31
Fall	Dec. 31
Winter	Jan. 31
Spring	May 31

*If an extension to the incomplete timeframe is sought, the above chart indicates the due date for the corresponding Petition for Incomplete Extension form to be filed with the Graduate School.

When assigning an incomplete grade, the instructor may set an earlier deadline for completion of the outstanding course requirements. If an earlier date for completion is set, the instructor shall inform the student thereof in writing. Any course graded as incomplete that will count toward a graduate degree must be changed to a permanent grade before that degree is conferred. At any time prior to the default date, a student may elect to change the I grade to the default grade using the Grade Retrieval Form.

5.10 Dual- and Cross-Listed Undergraduate and Graduate Courses

Any cross-listed course used to confer an undergraduate degree cannot be applied to graduate degree requirements. When a cross-listed course is a required course, but the student took the course as a UB undergraduate – that requirement changes to an elective course. Please consult with the DGS or the Graduate Coordinator with questions.

- **Cross-Registration With Other SUNY Schools:** The UB Graduate Student Cross-Registration form is obtained from the University Registrar's Office. In order to be enrolled in a cross-registered course, a UB student must get the Graduate Cross-Registration form approved by both their home department and the visiting institution and then return it to 1Capen (ground floor of Capen Hall) by the published deadline date (Contact the Office of the Registrar for more information at 716-645-5698 or via their online contact form). Students who do not meet these deadlines will not be enrolled into a cross-registration course and therefore will not receive credits or grades. In addition, a UB student must be registered at UB for a minimum of nine credit hours while participating in a cross-registration program. Each participating institution may establish its own registration procedures and materials. Tuition and fees are paid at the student's home campus. Grades are forwarded to the home institution after the close of the semester. Contact the Office of the Registrar for information at 716-645-5698.

- **Graduate Student Taking Undergraduate Courses:** Undergraduate courses may be taken by graduate students as appropriate prerequisites to their chosen field of study but may not be used to satisfy graduate program requirements or carry graduate credit without approval by the Graduate School. In order to obtain approval, the student must file a Petition for Course Credit Outside Your Primary Career that must include: (a) Justification for taking an undergraduate course for graduate credit. (For example: that the course curriculum is important to the student's program and not offered as a graduate course.) (b) The approval and signature of the course instructor who must be a UB faculty member. (c) A description of the nature and extent of the extra work to be assigned to the graduate student. And (d) the approval and signature of the department chair or DGS of the student's graduate program. If approved, a graduate student may receive up to a maximum of eight credit hours of this nature while pursuing a graduate degree. All such petitions must be filed prior to the end of the official add/drop period of the semester of registration.

5.11 Time Limits for Degree Conferral

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](#).

5.12 Returning Student Semester Record Activation and Associated Fee

Academic departments may file a semester record activation request for graduate students who were previously admitted into an academic program through UB's Graduate Application System *and* had a break in attendance of no more than five years *and* had neglected to secure an approved [leave of absence](#) (see Section [5.4](#)) from the Graduate School. Once reviewed and approved by the vice provost for graduate education, a new semester record will be created with *exactly the same academic career, program and plan* as recorded for the last semester in which the student attended UB. At the time of semester record activation, the student will be assessed a non-refundable record activation fee (currently $350). Any graduate student who has had an enrollment lapse of more than five years must reapply through the graduate program's regular application process.

6. Academic Expectations

6.1 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 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 university and department procedures. A detailed explanation of these procedures may be found in the [policy library](#).

6.2 Academic Standing for Master's Students

The minimum academic requirements for each graduate student to remain in good academic standing are to achieve/maintain a minimum cumulative GPA of 3.0 (B) for all courses that will count towards a student's degree, with no U or F grades earned. More information on grades can be found in the [policy library](#). (Note: SEAS does not allow S/U grades, except for Master's project, Master's thesis, dissertation, internship or courses taken as supervised research or seminar. The S grade is awarded only in those instances where a student's letter grade would have been equivalent to at least a 3.0 (B) or better. As such, the S grade is considered equivalent to a 3.0 grade point average.)

6.3 Academic Standing for PhD Students

Before degree conferral is possible, all PhD candidates must complete 72 credit hours of graduate study. A minimum of 36 credits of the PhD program must consist of courses completed at UB and uniquely applied to that degree program (more information on the policy on course sharing can be found in the policy library). In addition to maintaining a GPA of 3.5 or higher each semester, all PhD candidates must meet the following milestones:

- Pass the B (Breadth) Exam by Year 1 (for Fall start students) and Semester 3 (for Spring start students)
- Have an adviser-advisee relationship by the end of Year 1
- Have a Dissertation topic mutually agreed upon with the adviser by the end of Academic Semester 3.
- Form the Dissertation committee by the end of Semester 4.
- Pass A-Exam by the end of the Summer of Year 2.
- Pass the Dissertation Proposal by end of Summer of Year 3

The Department record should be updated immediately following each above milestone by emailing the DGS and Graduate Coordinator. Failure to meet these milestone deadlines will be documented and may result in academic notice (see Section 6.4). PhD candidates must submit an Application to Candidacy form (see Section 11) within the proper deadline dates for approval at the department, decanal, divisional committee (where required) and Graduate School levels. Upon successful submission and defense of a doctoral dissertation, each PhD student must electronically submit the dissertation to the graduate school for final approval and filing in the UB Institutional Repository. Additionally, PhD students are eligible for a Master's degree when they complete the corresponding requirements. Email the Graduate coordinator to add the degree.

6.4 Academic Notice

All graduate students are expected to remain in good academic standing (see Sections 6.2 and 6.3) throughout the entire course of their study. To monitor graduate student academic standing, the DGS and Graduate Coordinator will regularly review the academic records of its graduate students. Any graduate student who fails to remain in good academic standing will be placed on academic notice for the subsequent fall or spring term. Students will be notified if they are placed on academic notice by the Graduate Coordinator. In accordance with Graduate School and ISE departmental policy, any student who fails to meet these requirements and remains on academic notice in two successive semesters will typically be dismissed from the ISE graduate program. PhD students placed on academic notice may not receive financial aid or an assistantship (see Section 8).

6.5 Repeating Courses

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 students' final official transcript.

7. Transferring Previously Earned Credits into an ISE Graduate Program

The University at Buffalo and the Industrial and Systems Engineering department consider graduate-level coursework from national or international accredited institutions of higher education for credit transfers, meaning that a previously completed graduate course relevant to the ISE program may count as satisfying a part of the requirement of a UB ISE Advanced Certificate or UB ISE MS or PhD degree. The student must receive a grade of B or better in a course, for it to be considered for credit transfer. Courses with grades of S or P are also eligible for transfer except when the transfer institution's grading policy equates S or P as lower than a B grade. Courses transferred from another institution into the graduate division will be transferred with full semester credit value. Conversion of credits from trimester, quarterly and other calendar systems will be completed based on nationally accepted standards: i.e., trimester hours are equivalent to semester credits, however quarterly hours are equivalent to two-thirds semester credits.

7.1 Transfer Credit Limits

- **Advanced Certificates:** A minimum of 90 percent of all credits applied to a UB advanced certificate credential must be comprised of UB credits. The advanced certificate is an official post-baccalaureate credential in New York State. However, it is not considered a degree program. Therefore, all credits satisfactorily completed for a UB advanced certificate may also count toward a relevant UB graduate degree.
- **Master's Degrees:** No more than 20 percent of a master's program may comprise credits from another graduate degree program. For example, students pursuing a 30-credit master's degree may transfer up to six graduate credits into their program.
- **Doctoral Degrees:** Transfer credits for the doctoral degree may not constitute more than 50 percent of the total minimum credits required for that specific degree program. For example, students pursuing a 72-credit doctoral degree may transfer **up to 36 graduate credits** into their program.

7.2 Transfer Credit Process for coursework completed in the past 9 years

- **Transferring UB Credits:** The student submits their unofficial transcript to the ISE DGS for evaluation. Then the DGS determines if the courses are eligible and informs the ISE Graduate Coordinator who applies the transfer credits to the student's current degree program.
- **Transferring Non-UB Credits:** The student completes a transfer credit petition and includes a copy of their official transcript to the DGS. The DGS determines if the credits are approved and informs the Graduate Coordinator who processes it with the Graduate School. Please note that transfer credits cannot be formally applied to a student's record without official transcripts from the original institution.

7.3 Transfer Credit Process for coursework completed 10 years prior (or longer)

Any transfer credit petition including coursework completed 10 years prior or longer, whether from another institution or from UB, must be petitioned at the time of the student's matriculation to the program. Upon admission to an ISE graduate program, the student should first discuss their intention to transfer historical credits with the ISE DGS. If the DGS approves the transfer of (a subset of) the desired courses, the student shall then initiate the preparation of a Use of Historical Coursework Petition, for the transfer request to be officially considered by the UB Graduate School. Students shall include the following with their Use of Historical Coursework Petition: (a) A letter from the academic department that explains how the above courses are still relevant and applicable toward the student's current UB program. This letter is written by the ISE DGS. (b) A letter from the student that explains how they have maintained the knowledge gained from these courses. And (c) the student's current resume or CV. Once the DGS has approved the transfer credits, the Graduate Coordinator shall submit them to the Graduate School for processing.

8. Financial Assistance

The ISE Department has limited financial assistance available for qualified graduate students in the form of graduate teaching assistantships (TA) and graduate research assistantships (RA), which are almost exclusively reserved for PhD students. The monthly stipend for TAs and RAs varies depending on the nature of the assistantship and the graduate level of the student. All assistantships carry a waiver of tuition, except those awarded for summer terms. The students are still responsible for their portion of student fees. All PhD student financial assistance contracts are offered at the point of admission, on a competitive basis, with awards being made to the most qualified students based on merit. No PhD student, once they have completed 72 credits or more, is eligible for state (TA) funding. Students holding a full TA or RA must carry a full academic workload per semester. Students holding less than full TAs or RAs receive a proportionally smaller stipend and reduced tuition waiver and carry a proportionally lower workload.

8.1 Graduate Teaching Assistantships

Semester-to-semester, TAs are assigned by the Department Chair and the DGS to match specific course assignments, i.e., based on teaching needs. A student who is awarded a full-time TA is obligated for 20 hours of work per week throughout the semester for which the award applies. Typically, a TA is assigned to a member of the ISE faculty to assist in teaching a course. Graduate teaching assistants may assist faculty in teaching lower division courses, including laboratory teaching assignments, or in providing other appropriate professional assistance. First year TAs with no prior teaching experience will not be assigned full responsibility for lecture courses. To this end, they must complete all the required orientation sessions, and if required pass the UB SPEAK test. In ISE, it is unusual for a TA to be assigned full course responsibility.

8.2 Graduate Research Assistantships

RA awards are made to support academically significant research projects that are supervised by ISE faculty members, who are generally principal investigators on external grants or contracts. A student receiving a RA is expected to work 20 hours per week during the semester for which the award applies, the duties being assigned by the principal investigator. In a similar manner, the duties of a student on a fellowship depend on the particular fellowship and are not covered in this manual.

9. Curricular Practical Training and Optional Practical Training

9.1 Curricular Practical Training (CPT)

Curricular Practical Training (CPT) is a type of work-authorization used for F-1 international students to complete off-campus training experiences. The primary purpose of CPT is to gain practical experience in the student's field of study. The training experience must be an integral part of an established curriculum and directly related to the student's major area of study. Since CPT is curricular in nature, the student must also enroll for a course that requires an off-campus training experience. MS and PhD students enroll in IE 591 and ME students enroll in IE 592. CPT may either be full or part time: full time CPT = 21-40 hours per week; part time CPT = 20 hours or fewer per week.

9.2 Eligibility of CPT

In order to become eligible for a CPT experience, a student should have completed an equivalent of full-time study in the ISE graduate program for at least one academic year (1 fall plus 1 spring semester), thus earning at least 12 x 2 = 24 academic credits. Further, in order to become eligible for CPT experience, any current international student must maintain the F-1 status. To be eligible for a CPT approval, an internship/training experience offer must be directly related to the ISE fields of study and must offer an experience integral to the UB ISE curriculum. The internship/training offer is evaluated by Graduate Director , wherein it is graded, and the grade

appears on the student's transcript. Students can participate in CPT for a maximum of 3 credits and up to 2 consecutive terms as specified below:

- Spring
- Spring + Summer
- Summer
- Summer + Fall
- Fall
- Fall + Winter
- Winter
- Winter + Spring

No other two-term combinations are allowable; Master's students are not eligible for 2 non-consecutive full-time CPT internships during their degree program. Students approved for an Academic Reduced Course Load are not eligible for CPT during the same semester in which they are authorized to reduce their course load.

- **Project Track Students:** Are eligible for full or part time CPT as soon as they complete one full academic year of coursework.
- **Thesis Track Students:** Thesis students are not allowed to participate in full time CPT in their final semester. In other semesters, their CPT eligibility is determined by the ISE DGS in consultation with their faculty thesis advisor.
- **Portfolio Track Students:** Are eligible for full time or part time CPT after one academic year, but are not eligible for full time CPT in their final semester. This means that they are allowed to pursue a CPT experience either over the Summer term only (for students who started the program in Fall), or over the Winter term only (for students who started the program in Spring).

9.3 Steps in Applying for a CPT

A student is advised to follow the following steps in applying for a CPT:

- Students review the ISS CPT website for eligibility. Must complete one full academic year **(a fall and a spring semester completed)** and meet the academic requirements.
- Students obtain an offer letter. The offer letter should be written on the employer's letterhead and contain:
  - the student's name and title
  - the work location of the student and the company address
  - the scope of job duties, description of the nature of their work
  - the exact start and end date. (These dates must coincide with the ISS CPT chart)
  - the number of hours per week.
  - to whom the student is working with and reporting (optional)

- If all offer letter criteria is met, students email Graduate Director Chi Zhou and Graduate Coordinator Geraldine Hedrick with a copy of the offer letter for review and approval.
- Once students receive approval they complete the CPT application through the ISS website including the offer letter. Insert Geraldine Hedrick as the advisor and use IE 591 Project Guidance for the class in the online application process.
- Chi Zhou will advise students through the CPT processes, providing training, coordinating reporting/presentations process, and collecting feedback from the company.

Please note that:
- CPT authorization is semester specific. Depending on the start date in the program, a student may apply for CPT in Fall, Winter, Spring, or Summer.
- Internship academic credits must be earned in the term/semester in which the internship is completed. In particular:
  - The student cannot receive academic credit for internships that the student has already completed.
  - When the student completes an internship during a winter/summer term, the student must register for internship academic credit(s) during that winter/summer term.
- Separate applications are in order if the student intends to engage in a CPT experience over two terms.
- The ISE DGS serves as the academic advisor for all CPTs.
- The ISE DGS determines the expectations, course deliverables and deliverable submission deadlines for the student.
- Use the ISS chart to understand application deadlines and CPT start and end dates.
- The offer letter must describe the nature of their work (to allow for the determination of the relevance of the offered experience to the UB ISE academic program).
- After a CPT is approved by the ISE department, international students must apply for immigration status-related documents through the ISS website.
- Once a student is approved for full-time CPT in the final term for the Project Track, then they must graduate as a Project Track student.
- If a Project-track student was issued CPT in a semester other than their final semester, they can switch out of the track if they cannot complete the project with just one CPT.
- If a Project-track student had Full time CPT in their final semester, they must graduate as a project track student.
- No moving from Portfolio to Project track after the deadline. Deadline for Fall Admits to choose their track is 1 October; Deadline for Spring Admits to choose their track is 1 March.
- Before CPT is approved, if a Project Track student changes their mind, or cannot find an appropriate internship, then they can switch out of that track and move to portfolio.

9.3 Extending an Internship

If a student receives an extension offer from their current employer, they must first speak with ISS to determine if they are able to accept the offer. Students who are able to accept the offer must reapply with a new offer letter and academic advisor's form.

9.4 Full Time Certification

Students entering their 3rd semester (not including summer or winter terms) will be certified full time by the graduate school at 3 credits by the graduate coordinator – no action is required by the student. Students entering their 4th semester (not including summer or winter terms) must complete the reduced course load form and submit it directly to ISS.

9.5 Important Reminders

- If a student is authorized for CPT during the Fall/Spring semester, they may not exceed 20 hours per week between both CPT and any on-campus employment.
- It is not possible to switch employers after CPT is approved unless the reason for the change is due to a situation outside the student's control.
- When authorized for CPT, the student is permitted to work only from the specified beginning date through the specified ending date.
- Once a student applies for Post-Completion OPT, they are no longer eligible for CPT. Because CPT must be an "integral part of an established curriculum", the student is not eligible for CPT once they have completed all their degree requirements.

9.6 CPT for PhD students

PhD students must contact the graduate coordinator as soon as they receive an offer letter as Master's and PhD students have different CPT policies.

9.7 Optional Practical Training (OPT)

Optional Practical Training is an F-1 student benefit that allows the students to work off-campus in a job related to their major, typically after graduation. It is meant to supplement their academic experiences with practical experience. ISE Students are eligible for the OPT STEM extension. More information can be found on the ISS OPT Extension page. OPT is solely administered by ISS. The only function the department has for OPT is to provide the academic advisor's OPT letter – the student may receive this letter by emailing the graduate coordinator. More information on OPT can be found on the ISS OPT webpage. Additionally, the ISS website provides a comparison of all F-1 off-campus employment authorization options.

10. Full/Part Time Status, Certification and Academic Load

For Fall and Spring sessions, a full-time academic load for a graduate student is 12 credits per term, unless the student holds a graduate, teaching or research assistantship appointment, in which case a full-time academic load is 9 credits per term. A part-time academic load for a graduate student is 11 credits or fewer per term, unless the student holds a graduate, teaching or research assistantship appointment, in which case a part-time academic load is 8 credits or fewer per term. For winter and summer sessions, 3 credits taken over the winter session and 6 credits taken within a single summer session, is considered a full-time academic load.

Under certain circumstances, a graduate student can be certified full-time even though they are registered for less than a full-time academic load as defined above. Full-time status may be required by outside agencies or organizations such as lending institutions, health insurance carriers, and United States Citizenship and Immigration Services (USCIS). Examples include:

- A student who is at the candidacy stage of their program and is working full-time on a project or thesis.
- An international student in their third semester.
- A student participating in CPT.

If a student meets the conditions described above, the student may request full time certification by emailing the Graduate Coordinator.

11. Application to Candidacy

The primary purpose of the Application to Candidacy is to serve as a useful planning document for the student. As such, it is important for the student to prepare and submit the Application to Candidacy at an early stage in their candidacy. Because the Application to Candidacy needs to be approved at several levels of the University hierarchy, the student must submit the form to the departmental office approximately two semesters in advance of the anticipated degree date. More precise deadlines are published by the university each year. For June 1 degree conferrals, Applications to Candidacy must be submitted to the department by November 1st. Other degree conferral dates require comparable lead times. The published dates are deadlines for receipt of the Application to Candidacy by the Office of the Graduate School. The student shall submit the Application to Candidacy as soon as they are eligible, well before posted deadlines.

The Application to Candidacy only requires listing courses that remain to be completed in order to earn the degree. The students also list any courses taken elsewhere for which transfer credit has been approved. The students must also submit a complete narrative description of all informal courses (see Section 5.7) on a form available from the Department for this purpose. The form

requires the signatures of the student, the instructor and the DGS. SEAS also requires that the student provide a tentative title and abstract of the thesis, dissertation, or project.

Note that the stipulations above imply that students in the five-year B.S./M.Eng. program who plan to graduate after two semesters of graduate study (and for that matter, any graduate student who plans to obtain a degree within one year of entering the program) would need to submit an Application to Candidacy by approximately the end of their second month in the program.

The Application to Candidacy must contain an abstract of the dissertation, project or thesis. Changes (e.g., adding and/or deleting one or two courses, changing thesis titles, changing committee members other than the major advisor) may be made by submitting a general petition form (available online at [the Graduate School website](#)). The Application to Candidacy for the PhD degree should be filed within one year of successfully passing the PhD B-exam and, in no case, later than two weeks following successful passing of the PhD Advanced examination.

12. Graduation and Commencement

Graduation is the process of applying for degree conferral. Commencement is the SEAS sponsored ceremony in May where students can participate. These are unrelated and separate actions. A student can graduate without participating in commencement.

12.1 Graduation

When a student has or will complete their degree program, they must apply for graduation using HUB. Instructions may be found on the [Graduate School website](#).

The deadline for graduation application is as follows:

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

12.2 Commencement

Commencement is held once a year - after the spring semester. Any student who will complete their degree requirements by the spring semester is eligible to participate in the [ceremony](#).

During the spring semester the Graduate Coordinator will email eligible students with instructions on how to participate in the ceremony. A brief summary of both the graduation and commencement process can be found in the [commencement student checklist](#).

13. Graduate Awards

Industrial and Systems Engineering Graduate Student Research Award
- A graduate student who has contributed significantly to research during the academic year.
- Selection is based on the number, quality, and documented impact of publications and presentations.
- Nominated by faculty.

Industrial and Systems Engineering Graduate Student Service and Leadership Award
- A graduate student who has dedicated significant effort and/or leadership to support the university, school, or department.
- Nominated by faculty.

Industrial and Systems Engineering Graduate Student Teaching Award
- A graduate student who was/is a teaching assistant or instructor in at least one course in the Fall/Winter/Spring semester of the academic year.
- Candidates will be assessed by:
  - the timeliness and availability of the nominee towards the students' needs.
  - the clarity in grading and/or recitation material delivery.
  - the effectiveness of communicating with students.
  - the enthusiasm and responsibility.
  - the professional demeanor.
- Nominated by faculty

14. Clubs

Society For Risk Analysis -- UB Student Chapter
The Society for Risk Analysis – Student Chapter (SRA-SC), a student wing of the wider Society for Risk Analysis, brings the UB university community together to share information and ideas related to risk analysis, a domain that is currently being examined in diffused disciplinary settings. By creating a powerful experience emphasizing integrative learning, the club fosters critical thinking, creative problem-solving, and collaboration that values and embraces new ideas and perspectives.

Human Factors and Ergonomics Society (HFES)
The University at Buffalo Human Factors chapter is one of the oldest student chapters of human factors engineers. It was founded over two decades ago for the best interests of the student community at University at Buffalo. Students from various backgrounds such as industrial

engineering, psychology, anthropology, occupational therapy, cognitive science and mechanical engineering are our members. Contact us: ub.hfes@gmail.com

Omega Rho

UB has one of the founding chapters of Omega Rho, the national OR honor society. Graduate students with outstanding academic records are invited to become members.

Institute of Operations Research and the Management Sciences (INFORMS)

The UB INFORMS group sponsors a range of professional, research and social activities including hands-on software workshops (Quantum GIS; LaTeX); participation in the DOW Big Data Challenge; and attendance at the national INFORMS conference. Their chapter has also received awards from the national INFORMS organization. Contact US: ubinforms@gmail.com

Industrial and Systems Engineering Graduate Student Association

IE-GSA consists of all graduate students in the department and is funded through student fees paid to the UB Graduate Student Association. IE-GSA is an active organization supporting social, quality of life, and professional events for IE graduate students. Recent activities have included a local white-water rafting trip; a soccer tournament with students and faculty; LaserTag, and Sky Zone; and monthly lunch meetings. They co-fund HFES and INFORMS events and also participate in Speaker meet–and-greet events.