

Operations Management PhD Program  
Guidelines and Requirements

September 2024

Professor Robert Bray  
Director of Graduate Studies (DGS)



## Overview

The Doctoral Program at the Kellogg School of Management trains students to be innovative researchers with careers as professors. In preparation for the demands of academia, all doctoral students must meet a set of coursework requirements, pass an oral and written qualifying examination, pass the prospectus (proposal), and complete a dissertation. Students must satisfy additional requirements, such as annual research presentations, teaching and research assistance, and other requirements determined by each program. In addition, students must satisfy the general program requirements of **Kellogg** and **The Graduate School**.

This document specifies the specific Program Guidelines and Requirements for the Operations Management (OM) PhD program offered by the Operations Department of the Kellogg School of Management at Northwestern University.

If there are any questions regarding this document, or aspects of the program not covered in this document, please contact the program's Director of Graduate Studies (DGS).

These guidelines are organized by year in the program. In addition, there is a brief section at the end discussing the dismissal from the program when students are not in good academic standing and making the required progress in the program.

Northwestern University reserves the right to change without notice any statement in this publication concerning, but not limited to, rules, policies, tuition, fees, curricula, and courses.

## Residency Requirements

Doctoral students are expected to be on campus full time and involved in the research and teaching activities of the department throughout the year, including summer quarter, to qualify for continued funding. **Students who will be away from campus for more than three (3) weeks during an academic quarter need the approval of their Director of Graduate Studies (DGS) and dissertation advisor, if students have a dissertation advisor at this point in their studies.**

Additionally, doctoral students who are conducting research off campus or who are hired as interns for professional development purposes are required to report these activities to the Kellogg School of Management. Before a student engages in research off campus or accepts an internship, approval must be granted by the student's DGS and dissertation advisor. Also, a description of the research project or the terms of the internship must be provided, along with the timeframe the student will be away from campus. If an internship is paid, an adjustment to the student's financial aid package may be made in consultation with the Faculty Director of Kellogg's PhD Program.

## Operations Seminars

All PhD students are **expected** to attend the Operations seminars. If there is a potential conflict with their class schedule, or for any other reason, they should contact the DGS. Students should feel free to schedule their own research seminar to present their work and receive feedback from the department.

Students in years two and above should indicate if they attended the Operations Management seminars on the Annual Review Checklist form and upload into GSP (GSTS) their completed document into the "General" section within the Documents tab of GSP (GSTS) by May 30<sup>th</sup>. First year students please see section 1.6 below.

# **1 Requirements and Guidelines for First-Year Students**

## **1.1 Coursework**

First-year PhD students are required to take three to four courses each term (Fall, Winter, Spring). Students may informally sit in other courses with the permission of the instructor, but typically are not permitted to enroll in more than four courses in one term.

First-year students must maintain a 3.0 GPA. Students should indicate if they completed their first-year coursework requirement on the Annual Review Checklist form and upload into GSP (GSTS) their completed document into the “General” section within the Documents tab of GSP (GSTS) by June 20<sup>th</sup>.

The courses listed below are the standard, required courses in the first-year curriculum. When appropriate, a student may petition the DGS to be granted a waiver for one or more of these course requirements because the student has already mastered the relevant content. Evidence of this mastery—e.g., good performance on a relevant examination is necessary for a waiver to be considered. If a waiver is granted, another course at the PhD level must be substituted. Waiver of a course does not shorten the time to degree.

- 1) **Pre-term** (3 weeks before start of Fall quarter): Math Camp (ECON 401) and Econometrics Camp.
- 2) **Fall: 4 units**
  - a) OPNS 521 Foundations of Operations Management
  - b) MECS 560-1 Static Optimization in Economics (or equivalent in IEMS)
  - c) ECON 410-1 Microeconomics
  - d) ECON 480-1 Econometrics
- 3) **Winter: 4 units**
  - a) IEMS 460-1 Stochastic Models I
  - b) MECS 560-2 Dynamic Optimization in Economics (or equivalent in IEMS)
  - c) ECON 480-2 Introduction to Econometrics
  - d) OPNS 430/440 Operations Management (MBA core, see below, can be postponed to the 2<sup>nd</sup> year) \*
- 4) **Spring: 3 units + an “advanced” Operations Management PhD course *if offered*\*\***
  - a) OPNS 516 Stochastic Foundations
  - b) ECON 410-3 Microeconomics
  - c) ECON 480-3 Introduction to Econometrics

\*The core operations MBA class (OPNS430 or OPNS440) gives an excellent overview of the breadth of topics in operations management. PhD students can form one group for homework assignments. To register for an MBA class, reach out to the PhD Program team early (before MBA enrollments start). It is permitted to postpone this OPNS430/440 requirement to the second year.

\*\*The typical aim is to offer one advanced OPNS PhD course for first-and-second years in Winter/Spring; and another advanced course for second-and-third years in Fall.

## 1.2 First-Year Preliminary Examination

Students take an oral prelim exam by June 20<sup>th</sup> of their first year. The exam plays a significant part in the faculty evaluation of first-year students as discussed in section 1.7 below.

The exam is a two-hour oral exam administered to individual students by committees of at least three Operations faculty members. The committee for a student's exam will be designated by the Director of Graduate Studies (DGS). The exam is based on the student's review and presentation (45 minutes maximum) of one of a selection of classic, important published operations papers provided, but not authored, by the Operations faculty. Students should approach the oral exam as if they were presenting their own paper – a format they will see modeled in the Operations Seminar series. Beyond being familiar with the analysis of the paper, they should be able to articulate the work's importance and limitations and be prepared to handle a wide variety of questions.

The process is as follows:

1. No later than February 1, the DGS will make available to the students a list of papers from which to choose. The list will contain a minimum of 25 papers.
2. No later than March 1, first-year students must submit an ordered list to the DGS of their most preferred papers. Note: Only one student will present any given paper, so the list of preferences must include at least three papers but no more than five.
3. Students will be told their assigned paper within a week of all preference lists being submitted. At the same time, students will be told which faculty member submitted their assigned paper. Students may consult with faculty members about their paper but bear in mind that one's independence in mastering the paper is a key part of the evaluation of exam performance.
4. The timing of individual presentations must be scheduled by May 15. Students are responsible for coordinating a time with their committee ahead of time. Students must inform the DGS and the committee members of the date and time of their presentation via email.
5. Presentations must be completed by June 20. Students must submit their presentation slide deck to their committee at least 48 hours before their presentation and upload the completed slide deck to the "General" section within the "Documents" tab of GSP (GSTS).
6. Students should specify at the time of their first-year preliminary exam which faculty member will serve as their summer research advisor. If students cannot find a summer research advisor on their own, they should see their DGS early in the Spring quarter.
7. The faculty of the Operations department will deliberate, and the DGS will inform the students of their performance in early July.

## 1.3 Academic Advisor

The Director of Graduate Studies (DGS) serves as the advisor to all first-year PhD students for fall, winter, and spring quarters of their first year. Summer quarter begins the transition of advising from DGS to department faculty. See 1.5 below for more details.

Students should identify the name of their advisor (first year students enter the name of their DGS) within the Committee tab of GSP (GSTS) by September 30<sup>th</sup>. When complete, toggle the button, found at the top right of the page to "Completed."

Committee/Advisor

Manage Faculty List for Committee

Completed and ready for review?  
Not yet  Completed

Please indicate whether you have a principal research advisor and committee and if so, list the individuals below. Certain sections will become locked once possible. The review status to Completed. However, you can come back and change later if necessary by reentering the status button.

Advisor(s)  
I have an advisor  View

The Principal Research Advisor (also known as mentor, PI, dissertation director, advisor) is the doctoral faculty member who works with the student to develop a research topic, formulate a thesis and structure the progress of the thesis/proposal/dissertation. A student may have a Principal Research Advisor who also works with the student to develop a research topic, formulate ideas and structure for, and guide the progress of the thesis/proposal/dissertation. Students may have other types of advisors, such as a program advisor or training grant director. Advisors may be listed in multiple categories, if appropriate.

Faculty Name	Role	Invitation?	Assign Action	Accepted?

Done

No records to view

## 1.4 Work Requirement

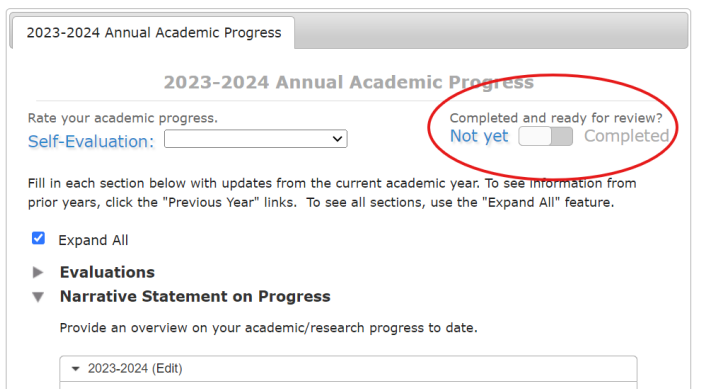
First-year students do not have a work requirement and are not expected to fulfill the research assistantship, teaching assistantship, or graduate assistant requirement.

## 1.5 Summer Research Activity

Students who pass their exams at the end of the first year are expected to spend the summer engaged in research under the supervision of one or more faculty members to begin a research project and/or directed reading. Students should specify at the time of their first-year preliminary exam which faculty member will serve as their summer research advisor and indicate if they met this requirement on the Annual Review Checklist form and upload into GSP (GSTS) their completed document into the “General” section within the Documents tab of GSP (GSTS) by June 20<sup>th</sup>. Students should update the Committee tab within GSP (GSTS) with the name of their summer advisor. See section 1.3 above for details. If students cannot find a summer research advisor on their own, they should contact their DGS early in the Spring quarter. The first-year summer research advisor does not need to be the student’s final advisor and does not need to be part of the students Dissertation Committee later on.

## 1.6 Annual Academic Progress

Academic and research progress must be reviewed annually by the student and their advisor or DGS. By June 20<sup>th</sup> of their first year, students should rate their academic progress and enter a narrative statement within the Academic Progress tab of GSP (GSTS). When complete, toggle the button, found at the top right of the page to “Completed.”



2023-2024 Annual Academic Progress

2023-2024 Annual Academic Progress

Rate your academic progress.  
Self-Evaluation:

Completed and ready for review?  
Not yet  Completed

Fill in each section below with updates from the current academic year. To see information from prior years, click the "Previous Year" links. To see all sections, use the "Expand All" feature.

Expand All

► Evaluations

▼ Narrative Statement on Progress

Provide an overview on your academic/research progress to date.

▼ 2023-2024 (Edit)

First year PhD students are also required to complete the Annual Review Checklist and upload their completed document into the “General” section within the Documents tab of GSP (GSTS) by June 20<sup>th</sup>. As the DGS serves as the academic advisor for all first-year PhD students, no signature is required, for first year students only. The link to the Annual Review Checklist can be found within the students Dashboard in GSP (GSTS).

## 1.7 Progress Guidelines

First-year students’ progress is measured by their course grades, their performance on the prelim exams, and their participation in Operations seminars. Students must maintain at least a 3.0 GPA on courses taken during their enrollment in the Operations PhD Program, pass the first-year prelim exam, and fulfill their field course and seminar attendance requirements to be in good academic standing.

During their first year, the DGS will meet with a student if at any time their progress is not satisfactory. A student who is not in good academic standing at the end of the first year is at risk for academic probation or exclusion from the program.

Students can appeal an exclusion decision directly to [The Graduate School](#) (TGS).

## 1.8 Requirements for a Master's Degree

While the goal of our doctoral program is the awarding of a PhD degree, a Master of Science (MS) degree may be awarded to qualified doctoral students.

Students who are continuing for a PhD degree may be considered for a MS degree if they are in good standing, they have completed a minimum of three quarters of coursework during the Operations PhD program, they have no incomplete grades and they have maintained at least a 3.0 GPA.

Students who are leaving the doctoral program without completing the PhD will be considered for the MS degree if they have completed a minimum of three quarters of coursework during the Operations PhD program, they have no incomplete grades, and they have maintained at least a 3.0 GPA.

## 2 Requirements and Guidelines for Second-Year Students

### 2.1 Coursework

Required coursework during the second year includes a flexible arrangement to induce gradual transition from coursework to independent research. Students are required to complete a total of **9** course units, comprised of:

#### Required Courses:

- Every advanced OPNS doctoral course offered that year (and informally sit in any previously taken advanced OPNS course when taught by different instructor). The typical aim is to offer one advanced OPNS PhD course for first-and-second years in Winter/Spring; and another advanced course for second-and-third years in Fall. Examples: OPNS522 Queuing Networks; OPNS523 Empirical Dynamic Models in Operations Management; OPNS 463 Stochastic Calculus & Control, and seminar courses such as OPNS-481 Revenue Optimization.

#### Electives:

- Graduate Courses supporting a student's independent research that may draw from IEMS, computer science, math/statistics, or other Kellogg PhD programs.
- Operations MBA courses (subject to DGS approval)
- Independent study: 1-2 independent studies, typically supporting the second-year summer paper (subject to DGS approval). **Please note: Of the 9 required course registrations in the second year, no more than 1 can be from an independent study.**

### 2.2 Work Requirement

Students work as GA, RA, and TAs for three years, spanning years two, three, and four. An academic year contains four quarters: fall, winter, spring, and summer. A portion of the stipend will be allocated toward wages for approximately 10 hours of work per week (100 hours total for the quarter), including summers. Students are not required to TA/GA more than 6 (six) quarters total during this three-year period.

Students who work as Research Assistants to faculty can choose the faculty they will work for, or the director of graduate studies can help match them to faculty according to their research interests.

The DGS needs to approve any additional work beyond the 100-hour requirement. Students are required to request permission from the DGS for any compensated job outside or inside the University. From all sources of work, students are not allowed to work over 20 hours per week; this is a TGS requirement. TGS' policy on working more than 10 hours per week is outlined on the [TGS website](#) along with a link to the online Permission to Work form.

## 2.3 Second Year Qualifying Examination and Candidacy:

To encourage and demonstrate the transition from coursework to research, students are required during the second year to carry out a research project and pass an oral *Qualifying Exam* on that project. Specifically:

- By fall quarter of the second year, a student must identify a faculty member to serve as the supervising faculty member for their second-year paper. They must enter the name of their 2<sup>nd</sup> year paper advisor into the Advisor section of the Committee tab of GSP (GSTS) by September 30 of their second year.
  - The timeline above represents the *latest* to accomplish these tasks. Students are strongly encouraged to move their research paper forward as early as possible. The faculty member supervising the second-year paper may, but is not assumed to, ultimately serve as a student's dissertation committee chair.

Committee/Advisor

Manage Faculty List for Committee

Completed and ready for review?  
High Pass  Completed

Please indicate whether you have a principal research advisor and committee and if so, list the individuals below. Certain sections will become **read-only** once you submit the review status to Completed. However, you can come back and change later if necessary by resuming the draft button.

Advisor(s)

The Principal Research Advisor (also known as mentor, PI, dissertation director, advisor) is the graduate faculty member who works with the student to develop a research topic, formulate ideas and structure for, and guides the progress of the thesis/proposal/dissertation. A student may have a Principal Research Advisor who also works with the student to develop a research topic, formulate ideas and structure for, and guides the progress of the thesis/proposal/dissertation. Students may have other types of advisors, such as a program advisor or training grant director. Advisors may be listed in multiple categories, if appropriate.

Faculty Name	Role	Invitation	Response	Accepted

No records to view

- By September 30 of the start of the third year, students must present their research paper to a committee consisting of their 2<sup>nd</sup> year paper advisor and at least two other Operations faculty members.
  - The date of the presentation must be set by Aug. 15 of year two at the latest.
  - Students must inform the DGS via email of the date of their presentation and names of their committee members by Aug. 15.
  - At least two weeks before their presentation, students must send their committee members a six-page extended abstract describing their project's aims and methodology and progress to date. Students must also upload a copy of the extended abstract to the "General" section within the Documents tab of GSP (GSTS)
  - Students should plan on a 45-minute presentation
- The faculty member supervising the second-year paper is responsible for submitting the committee evaluation of the project (High Pass, Pass, Low Pass or Fail) to the DGS. Students receiving a "Fail" evaluation from the faculty committee may be placed on academic probation or excluded from the program.

Upon successful passing of these summer paper requirements and receiving written approval by the summer paper committee chair, maintaining a 3.0 GPA in coursework taken during participation in the Operations program, the student is admitted to Candidacy.

Students who do not meet deadlines, degree requirements, or are not in good academic standing, may face **academic probation** and/or risk **exclusion** from the PhD Program.

Students can [appeal an exclusion decision](#) directly to The Graduate School (TGS).

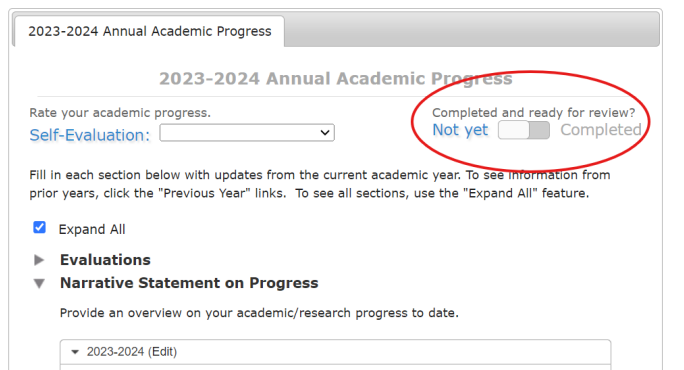
## 2.4 Academic Advisor and Summer Research Activity

Students are expected to meet a minimum of once a quarter with their second-year paper advisor who now serves as the student's academic advisor. Students should indicate if they met this requirement on the Annual Review Checklist, and upload into GSP (GSTS) their completed document into the "General" section within the Documents tab of GSP (GSTS) by May 30<sup>th</sup>.

Students are expected to be involved in research in their second summer to write their summer paper.

## 2.5 Annual Academic Progress

Academic and research progress must be reviewed annually by the student, their advisor, and the program. By May 30<sup>th</sup> of their second year, students should rate their academic progress and enter a narrative statement within the Academic Progress tab of GSP (GSTS). When complete, toggle the button, found at the top right of the page to “Completed.”



2023-2024 Annual Academic Progress

2023-2024 Annual Academic Progress

Rate your academic progress.  
Self-Evaluation:

Completed and ready for review?  
Not yet  Completed

Fill in each section below with updates from the current academic year. To see information from prior years, click the "Previous Year" links. To see all sections, use the "Expand All" feature.

Expand All

► Evaluations

▼ Narrative Statement on Progress

Provide an overview on your academic/research progress to date.

2023-2024 (Edit)

Second year PhD students are required to upload their completed Annual Review Checklist into the “General” section within the Documents tab of GSP (GSTS) by May 30<sup>th</sup>. The link to the Annual Review Checklist can be found within the students Dashboard in GSP (GSTS).

In addition, students in their second year will participate in Review Day which is an annual academic progress review of the students with the Operations faculty. Students will be given at least two weeks’ notice of the date and the time they are expected to participate in Review Day. Students in their second year must upload into the “General” section within the Documents tab of GSP (GSTS) one PowerPoint slide at least two days before they are supposed to participate. The slide will cover what work they have done over the academic year. It should also include the status of any submitted papers. At their appointed time students will have three minutes to present their accomplishments.

The Operations Management Review Day requires each 2<sup>nd</sup> year PhD student to have completed all three items described above: self-evaluation, the Annual Review Checklist, and PowerPoint slide.

## 2.6 Progress Guidelines

Second-year students’ progress is measured by their course grades, their research, specifically their second-year papers, and their integration into the research and teaching environment through seminar attendance and RA/TA/GA work. Students must maintain at least a 3.0GPA, pass the second-year qualifying exam before the start of the 3rd year, and fulfill their field course and seminar attendance requirements to be in good academic standing. Students who are not in good standing at any point must meet with the DGS to ensure that they return to good academic standing. A student who is not in good academic standing at the end of the second year is at risk for exclusion from the program.

Students can [appeal an exclusion decision](#) directly to The Graduate School (TGS).

## 3 Requirements and Guidelines for Third-Year Students

Students in their third year and higher are trained to become independent researchers. Students can still take PhD or MBA courses through year 5 upon permission of the DGS. This process culminates in the Doctoral Dissertation, which should demonstrate “mastery.” Doctoral candidates should think in terms of their *personal brand* to convey their mastery, which can be in a topic (“retail expert” who could use the appropriate research method for the problem at hand) or a methodology (“stochastic control or empirical expert” who could apply that methodology in possibly distinct topics). The principal advisor typically aligns with the expertise sought and additional faculty advisors help with breadth or depth.



### **3.1 Coursework**

Typically, the entire focus from the third year on is on research but third-year students are required to take one advanced OPNS PhD course, if one is offered.

### **3.2a Dissertation Committee**

Students in their third year must choose a dissertation advisor, form a Dissertation Proposal Committee and formulate and defend a dissertation proposal.

Dissertation committees are reviewed and approved by the Kellogg PhD Program Faculty Director. The committee consists of at least four tenure-track/research faculty members, at least three of whom are on the Kellogg faculty. At least one member of the committee must be outside the student's program. The committee chair and at least one other member must be from The Graduate School faculty, and the chair and at least one other committee member are expected to hold appointments in the student's program to ensure that half of the committee members represent the student's program. Usually, one member of the committee represents the student's minor field of study.

The dissertation committee chair and at least one other dissertation committee member must be faculty members of the Operations department.

The committee member(s) from outside the Operations Department must be either:

1. A faculty member from outside the department or outside of the Kellogg School, but within Northwestern University, or
2. A faculty member from outside Northwestern who has a permanent appointment (tenure track, a research professor) at another university and who supervises doctoral students as they complete their dissertations.

Please note that a faculty member with a joint appointment spanning two Kellogg departments, one of which is within the student's own program, cannot be used as someone from outside the student's program; a former Kellogg faculty member could also qualify if he/she has been away from Kellogg a minimum of 3 years.

Students should enter their committee decision into GSP (GSTS) by September 15 prior to the start of their fourth year and send an invitation to their dissertation chair and committee members. Only when the faculty member accepts the request in GSP (GSTS) to be the dissertation chair or committee member is the process complete.

### **3.2b Dissertation Proposal (Prospectus)**

After completing the coursework and the written qualifying examination, a student takes an oral examination in which he or she proposes a dissertation topic or other substantive piece of research, discusses its significance, and explains the research methods to be used and any preliminary results of the paper(s).

Students must form their dissertation committee and schedule their dissertation proposal (prospectus) no later than September 15 prior to the beginning of the fourth year in the program and propose no later than December 15 of that year.

The usual format is a 1-hour dissertation proposal meeting that features a 30-40minute presentation complemented with questions and discussions by the Dissertation Committee. The presentation should outline a research plan and provide a clear timeline for accomplishing this work. The candidate should discuss this presentation in advance with the Dissertation Advisor and upload the presentation, together with relevant paper(s), into the "General" section within the Documents tab of GSP (GSTS).

### 3.3 Work Requirement

The third-year work requirement remains the same as in year two. Students are expected to be on campus full time as RA, GA, or TA's full-time, fall, winter, spring, and summer quarter. A portion of the stipend will be allocated toward wages for approximately 10 hours of work per week (100 hours total for the quarter), including summers. Students are not required to TA/GA more than 6 (six) quarters total during this three-year period.

Students who work as Research Assistants to faculty can choose the faculty they will work for, or the director of graduate studies can help match them to faculty according to their research interests.

The DGS needs to approve any additional work beyond the 100-hour requirement. Students are required to request permission from the DGS for any compensated job outside or inside the University. From all sources of work, students are not allowed to work over 20 hours per week; this is a TGS requirement. TGS' policy on working more than 10 hours per week is outlined on the [TGS website](#) along with a link to the online Permission to Work form.

### 3.4 Annual Academic Progress

Academic and research progress must be reviewed annually by the student, their advisor, and the program. By May 30<sup>th</sup> of their third year, students should rate their academic progress and enter a narrative statement within the Academic Progress tab of GSP (GSTS). When complete, toggle the button, found at the top right of the page to "Completed." (see 2.5 above)

Third year PhD students are also required to upload their completed Annual Review Checklist into the "General" section within the Documents tab of GSP (GSTS) by May 30<sup>th</sup>. The link to the Annual Review Checklist can be found within the students Dashboard in GSP (GSTS).

In addition, students in their third year will participate in Review Day which is an annual academic progress review of the students with the Operations faculty. Students will be given at least two-weeks' notice of the date and the time they are expected to participate in Review Day. Students in their third year must upload into the "General" section within the Documents tab of GSP (GSTS) one PowerPoint slide at least two days before they are supposed to participate. The slide will cover what work they have done over the academic year. It should also include the status of any submitted papers. At their appointed time students will have three minutes to present their accomplishments.

The Operations Management Review Day requires each third year PhD student to have completed all three items described above: self-evaluation, the Annual Review Checklist, and PowerPoint slide.

### 3.5 Academic Advisor and Summer Research Activity

The third year bi-monthly check-in should be done by the 2<sup>nd</sup> year paper advisor who now serves as the student's permanent advisor unless the student has decided to select another faculty member as their permanent advisor. Students are expected to meet a minimum of twice a month with their advisor. Students are expected to be involved in research in their third summer to write their dissertation proposal.

Students should indicate if they met this requirement on the Annual Review Checklist, and upload into GSP (GSTS) their completed document into the "General" section within the Documents tab of GSP (GSTS) by May 30<sup>th</sup>.

### 3.6 Progress Guidelines

Third-year students' progress is measured by their research progress (judged by their advisors), their integration into the research and teaching environment through seminar attendance and RA/GA/TA work, and, most importantly their dissertation proposal defense. Students must have scheduled their proposal no later than September 15 of their third year in order to successfully propose by December 15 of their fourth year and must have performed satisfactorily in the

other aspects to be in good standing. A student who is not in good academic standing at the end of the third year or at any time during the fourth and later years may be excluded from the program.

## **4 Requirements and Guidelines for Students in Year Four and Above**

### **4.1 Dissertation and Final Oral Examination**

Students should plan to finish the program in five years. Students should discuss their progress towards completion regularly with their dissertation advisor(s).

Each candidate must complete a dissertation demonstrating original and significant research and must pass a final oral examination on the dissertation.

The Dissertation must be defended in front of the Dissertation Committee and accepted by The Graduate School. The rules for the Dissertation Committee composition and approval are the same as for the Dissertation Proposal Committee, and once again, the Kellogg PhD Program Faculty Director must approve the committee. These two committees need not have the same members (though they typically do).

The usual format of the dissertation defense starts with a 30 minute in-person presentation that is open to the public (the candidate should include in the invitation all OPNS PhD students and faculty), followed by a 20 minute oral examination by the Dissertation Committee (members of which may provide exam questions in advance) that is closed to the public, and finished by deliberation by the Dissertation Committee. In addition to the public presentation and the private examination, we encourage the PhD Candidate to view the PhD Dissertation Defense as serving a third role: the celebration of finishing the PhD journey. Invite also your friends and loved ones!

The candidate should discuss this presentation in advance with the Dissertation Advisor and should upload the presentation into the General section of the Documents tab within GSP (GSTS).

Students should also be aware that the academic job market takes place in the Fall and Winter for jobs starting the following academic year. This means that it is necessary to have at least one strong piece of original research ready to use as a job market paper by, at the latest, October of their final year in the program.

It is also essential for any student who is even remotely considering being on the job market to discuss this with their advisor and notify the DGS by the beginning of the summer before.

### **4.2 Work Requirement in Year Four**

The fourth-year work requirement remains the same as in years two and three. Students are expected to be on campus full time as GA, RA, and TA's full-time, fall, winter, spring, and summer quarter. Students work as GA, RA, and TAs for three years, spanning years two, three, and four. An academic year contains four quarters: fall, winter, spring, and summer. A portion of the stipend will be allocated toward wages for approximately 10 hours of work per week (100 hours total for the quarter), including summers. Students are not required to TA/GA more than 6 (six) quarters total during this three-year period.

Students who work as Research Assistants to faculty can choose the faculty they will work for, or the director of graduate study can help match them to faculty according to their research interests.

The DGS needs to approve any additional work beyond the 100-hour requirement. Students are required to request permission from the DGS for any compensated job outside or inside the University. From all sources of work, students are not allowed to work over 20 hours per week; this is a TGS requirement. TGS' policy on working more than 10 hours per week is outlined on the [TGS website](#) along with a link to the online Permission to Work form.

### 4.3 Seminars

In addition to attending Operations seminars, it is recommended for students who go on the academic job market schedule and present at a research seminar with the department before they go on the job market.

### 4.4 Annual Academic Progress

Academic and research progress must be reviewed annually by the student, their advisor, and the program. By May 30<sup>th</sup> of year four and above, students should rate their academic progress and enter a narrative statement within the Academic Progress tab of GSP (GSTS). When complete, toggle the button, found at the top right of the page to “Completed.” (see 2.5 above)

Fourth year students and above are also required to upload their completed Annual Review Checklist into the “General” section within the Documents tab of GSP (GSTS) by May 30<sup>th</sup>. The link to the Annual Review Checklist can be found within the students Dashboard in GSP (GSTS).

In addition, students in their fourth year and above will participate in Review Day which is an annual academic progress review of the students with the Operations faculty. Students will be given at least two weeks’ notice of the date and the time they are expected to participate in Review Day. Students in their fourth year and above must upload into the “General” section within the Documents tab of GSP (GSTS) one PowerPoint slide at least two days before they are supposed to participate. The slide will cover what work they have done over the academic year. It should also include the status of any submitted papers. At their appointed time students will have three minutes to present their accomplishments.

The Operations Management Review Day requires each fourth year PhD student and above to have completed all three items described above: self-evaluation, the Annual Review Checklist, and PowerPoint slide.

### 4.5 Academic Advisor and Summer Research Activity

Students in year four and above are expected to meet a minimum of twice a month with their advisor. Students are expected to be involved in research in their fourth summer to write their dissertation.

Students should indicate if they met this requirement on the Annual Review Checklist, and upload into GSP (GSTS) their completed document into the “General” section within the Documents tab of GSP (GSTS) by May 30<sup>th</sup>.

### 4.6 Progress Guidelines

Fourth-year students’ progress is measured by their research progress (judged by their advisors), their integration into the research and teaching environment through seminar attendance and RA/TA work, and, most importantly their dissertation proposal defense. Students must successfully propose no later than December 15 of their fourth year and must have performed satisfactorily in the other aspects to be in good standing. A student who is not in good academic standing at the end of the third year or at any time during the fourth and later years may be excluded from the program.

In the fourth and later years, good academic standing requires ongoing, substantial progress towards completion of the dissertation. The chair of the dissertation or dissertation proposal committee must certify, on the Annual Review found in GSP (GSTS), that substantial progress is being made.

### 4.7 Degree Completion

The Graduate School has set a maximum time limit of nine years for successful completion of the dissertation. For more details, see [The Graduate School website](#).

## 5 Funding in Year Five

For students in good academic standing, funding is provided for up to five years. Funding in year five comes in the form of a fellowship, no work is required.

## 6 Research Support

The Operations Management Program, in conjunction with Kellogg and the Graduate School, is committed to providing research support to PhD students. This includes a computer subsidy and conference travel funding.

Kellogg doctoral students may apply for additional research funding, such as data, software, and research assistants. Applications are submitted and reviewed by each student's director of graduate study (DGS), the student's main advisor, the faculty director for the PhD Program, and, when appropriate, Kellogg's senior associate dean for faculty and research.

## 7 Dismissal (Exclusion)

Failure to maintain a comprehensive 3.0 GPA, pass the Preliminary or Qualifying Examinations, and failure to satisfactorily propose are the most common reasons for dismissal. In the event the DGS determines that a student has failed their Preliminary or Qualifying Examination or otherwise failed to meet their academic requirements, or in the event the proposal committee decides that a student has not met the proposal requirements, a committee consisting of the DGS, the faculty who teach in the PhD program, and the proposal committee (if relevant) will evaluate whether the student should be asked to leave the program. All recommendations to dismiss a student will also be reviewed by the Kellogg Faculty Director of the PhD program and Senior Associate Dean for Strategy and Academics. This committee will also evaluate whether students who are asked to leave the program have met the requirements for a master's degree described in 1.8. The Graduate School may set additional requirements for the Master's degree.

Students can [appeal an exclusion decision](#) directly to The Graduate School (TGS).

## 8 Nondiscrimination Statement

Northwestern University does not discriminate or permit discrimination by any member of its community against any individual on the basis of race, color, religion, national origin, sex, pregnancy, sexual orientation, gender identity, gender expression, parental status, marital status, age, disability, citizenship status, veteran status, genetic information, reproductive health decision making, or any other classification protected by law in matters of admissions, employment, housing, or services or in the educational programs or activities it operates. Harassment, whether verbal, physical, or visual, that is based on any of these characteristics is a form of discrimination. Further prohibited by law is discrimination against any employee and/or job applicant who chooses to inquire about, discuss, or disclose their own compensation or the compensation of another employee or applicant.

Northwestern University complies with federal and state laws that prohibit discrimination based on the protected categories listed above, including Title IX of the Education Amendments of 1972. Title IX requires educational institutions, such as Northwestern, to prohibit discrimination based on sex (including sexual harassment) in the University's educational programs and activities, including in matters of employment and admissions. In addition, Northwestern provides reasonable accommodations to qualified applicants, students, and employees with disabilities and to individuals who are pregnant.

Any alleged violations of this policy or questions with respect to nondiscrimination or reasonable accommodations should be directed to Northwestern's Office of Equity, 1800 Sherman Avenue, Suite 4-500, Evanston, Illinois 60208, 847-467-6165, [equity@northwestern.edu](mailto:equity@northwestern.edu).

Questions specific to sex discrimination (including sexual misconduct and sexual harassment) should be directed to Northwestern's Title IX Coordinator in the Office of Equity, 1800 Sherman Avenue, Suite 4-500, Evanston, Illinois 60208, 847-467-6165, [TitleIXCoordinator@northwestern.edu](mailto:TitleIXCoordinator@northwestern.edu).

A person may also file a complaint with the Department of Education's Office for Civil Rights regarding an alleged violation of Title IX by visiting [www2.ed.gov/about/offices/list/ocr/complaintintro.html](http://www2.ed.gov/about/offices/list/ocr/complaintintro.html) or calling 800-421-3481. Inquiries about the application of Title IX to Northwestern may be referred to Northwestern's Title IX Coordinator, the United States Department of Education's Assistant Secretary for Civil Rights, or both.