



## DOCTORAL PROGRAMS

2023-2024 Policies and Procedures

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The Wharton School policies and procedures that are reported in this document define the minimum standards to which all the School's Doctoral concentrations and programs must adhere. These policies and procedures also present guidelines for students regarding course work, examinations, and dissertation research. Additional requirements specific to each department/program are listed in the document appendices.

**\*\*IT IS ESSENTIAL THAT ALL DOCTORAL STUDENTS READ AND ADHERE TO THESE REQUIREMENTS \*\* OFTEN, DOCTORAL REQUIREMENTS WILL CHANGE WHILE THE STUDENT IS IN WHARTON DOCTORAL PROGRAMS. IN SUCH CASES, THE STUDENT MAY BE HELD TO THE NEW STANDARDS/REQUIREMENTS. THIS WILL BE A DECISION BY THE DEPARTMENTAL DOCTORAL COMMITTEE AT THE TIME OF POLICY CHANGE.**

## 1. Organization and Governance

### 1.1. Policy Latitude

These policies and procedures are not intended to impose uniform regulations over all programs. A program is free to impose stricter policies than the ones laid out here; however, if it does so it is responsible for the administrative control of these policies. Any such policies and procedures must be approved by the Wharton Doctoral Executive Committee prior to implementation, as described below. Moreover, these stricter policies must be recorded in writing and distributed to all students affected when they enter the program. The PhD degree is awarded by the Graduate Council of the Faculties of the University of Pennsylvania. Accordingly, students in the Wharton Doctoral Programs are also subject to the rules and regulations established by that body. These are published in the [PENNBOOK](#)

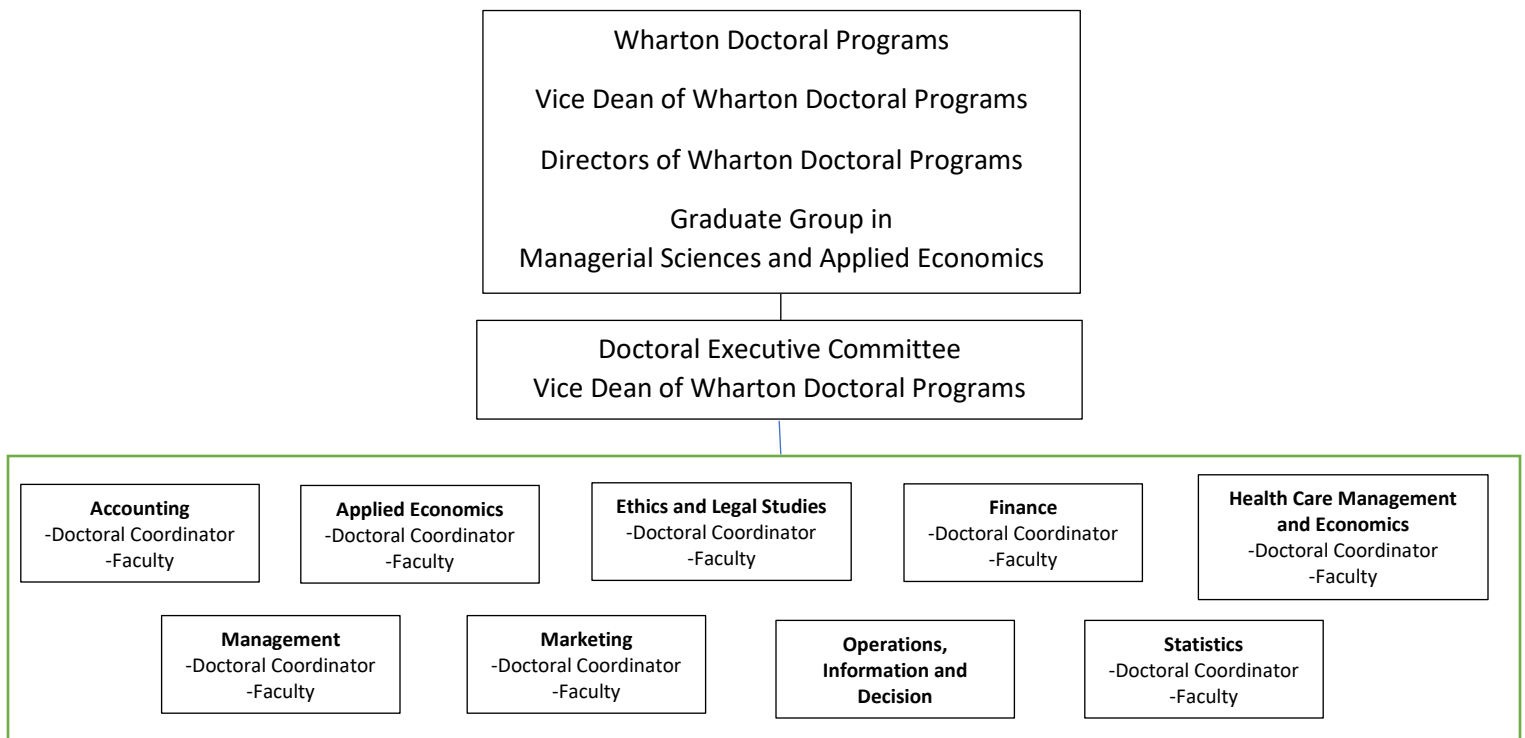
### 1.2. Overall Administrative Structure

The Wharton Doctoral Programs report for academic matters to the Faculty of the Wharton School and for administration to the Dean of the Wharton School. Matters relating to standards and policies concerning degree requirements are normally decided by the Wharton Doctoral Executive Committee in consultation with the Wharton Faculty, subject to overall guidance and ultimate governance by the Associate Provost for Graduate Education and as advised by the Graduate Council of the Faculties of the University of Pennsylvania.

### 1.3. Organization of the Wharton Doctoral Programs

**Figure 1** shows the organizational structure of the Wharton Doctoral Programs. Each Department or Program is represented on the Doctoral Executive Committee; normally by the faculty member responsible for Doctoral Programs in the Department or Program in question, (hereinafter we refer to this individual as the Doctoral Coordinator). The Doctoral Executive Committee has the primary responsibility for program review, course approvals and other policy matters, subject in certain areas to approval by the entire Wharton Faculty as described in the Policies and Procedures herein.

**FIGURE 1: ORGANIZATION OF WHARTON DOCTORAL PROGRAMS**



Doctoral Coordinators have the primary responsibility of conveying the concerns of their respective departments and programs to the Doctoral Executive Committee for advice and consent. They also have primary responsibility for local record keeping and monitoring of students in their respective programs concerning student progress, student advisors and financial aid. Students should normally first consult their Doctoral Coordinator on problems or policy questions that they may have.

At the University of Pennsylvania, the organizations responsible for graduate instruction and the degrees are groups of faculty called Graduate Groups. In many cases, such as history and mathematics, the graduate group has a counterpart department. Other graduate groups do not have a traditional counterpart department or school. Instead, they are composed of appropriate faculty from a variety of existing departments and schools with the aim of enhancing the interdisciplinary nature of the field of study.

The Graduate Group of Managerial Science and Applied Economics covers all doctoral education in the Wharton School and offers programs in accounting, applied economics (includes: business economics and public policy and real estate), ethics and legal studies, finance, health care management and economics, management, marketing, operations information and decisions, and statistics.

#### **1.4. Course Approvals and Program Structure Changes**

As established by the Wharton Faculty Meeting of January 13, 1987, all changes in courses offered and program structure must be approved by the Wharton Doctoral Executive Committee. Any proposed change that at least one member of the Executive Committee believes to be relevant and important to the whole program (and school as a whole) will also be referred to the Wharton faculty for consideration. All other changes are approved routinely by the Executive Committee alone, without further consultation or referral to the Wharton faculty.

#### **1.5. Departmental Doctoral Committee**

Each Department Chair\* must appoint a Doctoral Committee each academic year. The committee is made up (ideally) of at least three standing faculty members with the PhD Coordinator acting as the Chair of the committee. The appointment of faculty members who will serve on the Doctoral Committee should be announced to the department faculty and doctoral students each year. Tasks of the committee may include, but are not limited to admissions, dismissal cases, and responsibility for qualifying exams and required summer papers, and required annual student reviews.

\* For the purpose of this paragraph, the Applied Economics doctoral area is considered a “department” and hence needs to have a single doctoral committee appointed by the appropriate department chairs.

## **2. Admissions and Financial Aid**

### **2.1. Program Admission Categories**

An applicant who is accepted for admission to the Wharton Doctoral Programs will be admitted as a regular full-time doctoral student. The Wharton Doctoral Programs has no other category of admissions.

### **2.2. Visiting Doctoral Fellows and Visiting Scholars**

In addition to regular doctoral students, Wharton Doctoral Programs may accept a limited number of individuals as Visiting Doctoral Fellows. These appointments will normally be made in conjunction with a department, and they are intended for visiting graduate students who have not yet received a PhD. Scholars who have received their doctorate and who have specific and limited research and education purposes are also accepted as Wharton Visiting Scholars from other institutions. Such students' stay in the program is usually limited to one year but can be extended to eighteen months. Visiting Doctoral Fellows and Visiting Scholars must have a faculty sponsor in the program before entering. Each application will be decided on an individual basis. Visiting Doctoral Fellows will not be considered for admission as regular doctoral students while they are in residence; that is, they must return to their home country or institution for at least 1 year before applying for admission to the Wharton Doctoral Programs.

### **2.3. Admissions Procedures**

Students enter the Doctoral Program of the Wharton School at the beginning of the Fall term. All applications, together with all supporting material (including letters of recommendation, grade transcripts, and either GMAT or GRE scores), must be received by the Doctoral Programs office no later than December 15 of the year before admission is desired. Exceptions may be made only in special circumstances with approval from the Vice-Dean of Wharton Doctoral Programs.

All applicants are expected to take either the GMAT or the GRE depending on departmental requirements. Except under unusual circumstances, applicants whose native language is not English must take the Test of English as a Foreign Language (TOEFL) examination. The admissions process is a multi-step procedure. Applications are viewed by a committee determined within the department, usually consisting of at least the Doctoral Coordinator and a few other faculty members. Candidates approved from that body are then sent to the Vice-Dean of Wharton Doctoral Programs for approval. Approval of both the department and Vice-Dean is required.

### **2.4. Funding**

Students admitted to most PhD programs receive multi-year financial packages to cover tuition, fees, health insurance and a living allowance or stipend. The terms of the award may vary according to field of study, and within department. Contact individual programs for details. Time until completion of the PhD degree, while it varies by field, is typically 5-6 years for a student entering with a bachelor's degree.

The form of the support is determined by the student's department. Support of continuing students' funding will be decided jointly by the Doctoral Programs Office and the given student's department. Good standing (*See section 6.1 Dissertation Proposal Phase*) in the program is required for both continuation and funding.

### **3. Active Status, Leaves, Program Transfers, Student Contact Information**

#### **3.1. Maintaining Active Status**

Matriculated students must register every semester for either full-time course work or dissertation status. The exception to this rule is an approved leave of absence while students are on course work. During dissertation status, students are permitted to take a medical leave, family medical leave (FMLA), or military leave only. Students who are not on an approved leave of absence and who have not registered for any one semester will be considered to have withdrawn from the program. To maintain a student visa, international students must be enrolled for at least three credit units per semester or be on dissertation status.

##### **3.1.a. Full-Time Status**

Students enrolled in the Wharton Doctoral Program must maintain full-time enrollment throughout their time in the program. Full-time enrollment is defined as a minimum of 3 CUs (credit units) or register for Dissertation Status, as appropriate in their doctoral education plan. Students are eligible to enroll in 1 CU per semester upon entering Dissertation Status.

##### **3.1.b. Add/Drop Courses**

Students may add/drop courses within the designated Wharton Doctoral Programs add/drop period. Should a student wish to drop a course after the add/drop date, they must complete the [withdraw from a course form](#) to receive the permission instructor of the course and PhD coordinator of their home department. A student may only drop a course if it does not drop them below 3 CUs.

##### **3.1.c Course Load**

The maximum course load per term is four course units per term for doctoral students. A doctoral student may register for a fifth course unit as AUDIT ONLY with permission of the Vice Dean of the Doctoral Programs. PhD students may AUDIT ONLY ONE COURSE PER TERM. If departments require additional coursework, the student will be notified by their department coordinator.

#### **3.2. Tuition Policies\***

Tuition and fees are due in August for the Fall term and in January for the Spring term for those students not covered by tuition remission. No students will receive tuition remission beyond their 5<sup>th</sup> year in the program, if applicable, unless approved by the Vice-Dean of Wharton Doctoral Programs. Students on dissertation status beyond their 5<sup>th</sup> year must pay the reduced tuition and fees. Tuition is not covered for summer course registration. Students and candidates who fail to pay their tuition for any semester will be considered to have withdrawn from the program. Students who have withdrawn must reapply for admission to regain active status in the program.

\*See [The PennBook | Academic Rules for PhDs and Research Master's Degrees](#) for more information on the University of Pennsylvania tuition policies for PhD students.

#### **3.3. Leaves of Absence**

[Please visit the PhD Student Leave of Absence Policy in the University catalog.](#)

#### **3.4. Funding Policy on Maternity/Paternity Accommodations**

Wharton Doctoral students who anticipate a need for maternity/paternity “extended funding” (beyond their allotted funded years) are eligible to apply for a “Funding Extension” period. Eligible students should complete and submit the approved [Maternity/Paternity Funding form](#) within 60 days of the birth or adoption of your child. If approved by the Doctoral Coordinator and Vice Dean, students will receive ½ of their normal stipend and 100% of health care fees. This policy does not cover tuition. This is a one-time use extension. Students are encouraged to speak with their Doctoral Coordinator to explore their options for accommodation for any time-off periods.

#### **3.5. Summer External Employment Policy**

Students are expected to remain in good standing with their department and meet all academic goals and requirements in a timely manner. Students who may seek external employment during the summer months must seek the approval from their Doctoral Coordinator, and additional conditions may be put in place if approved. It is the student’s responsibility to remain transparent regarding the terms, conditions, and compensation of any summer employment. The Doctoral Coordinator will assess whether there is a conflict between the summer employment and the student’s progress within the Wharton Doctoral Programs.

#### **3.6. Transfers between Wharton Doctoral Programs**

Any student currently enrolled in a graduate program within either the Wharton School, or elsewhere at the University of Pennsylvania, who wishes to transfer to a different doctoral program/concentration within the Wharton School must inform their

current program and then apply for admission to that Wharton doctoral program. All transfers from outside the Wharton school must go through the normal Wharton admissions process.

### **3.7. Change of Address**

Regardless of whether a student in the doctoral program is on or off campus or on a leave of absence, it is the student's responsibility to stay in touch with their advisor and to notify the Doctoral Programs Office of any change of address that may occur. It is also the student's responsibility to see that they remains current on any changes in the program rules or regulations.

### **3.8 Wharton Email Address**

All email communication to students will be sent primarily to the students' university assigned email address (in most cases, wharton.upenn.edu). It is the student's responsibility to check their university assigned email account for important information.

### **3.9 Residency Policy**

Effective Spring 2022, all Wharton Doctoral Programs students must be in residency during the entirety of their PhD fellowship. In residence means that you live close enough to Penn to participate readily and consistently in-person in the intellectual life of your department and Wharton Doctoral Programs and particularly in activities that your department requires such as classes, teaching and research obligations, meeting with advisors, attending workshops and seminars. Students may petition to their PhD coordinator for permission to work elsewhere for a specified period, but such petitions should be under extenuating circumstances. The petition will be reviewed by the PhD coordinator and Vice Dean and approval is not guaranteed. If you are an international student, you will also need approval from International Student and Scholar Services (ISSS).



## **4. Transfer of Course Credit\***

### **4.1. Credit for Graduate Work at Other Universities**

Students may receive up to eight units of credit for graduate work at other universities. Specific departments may set lower limits. Courses must be taken within the last 10 years of when the student matriculates into the PhD program. A student who desires credit for previous course work should submit a [request for transfer credit form](#) along with a copy of the transcript from where the transfer is being requested to their department Doctoral Coordinator. That request should be submitted during the first year in the program. Credit may be transferred toward the PhD from a master's degree or other work completed in a post-baccalaureate degree program. No work done as an undergraduate (including graduate level courses), whether at this institution or at any other, will be counted toward a PhD, A.M., or M.S., with the following exception: graduate courses completed by undergraduates as submatriculants in a graduate group may be counted toward graduate degree requirements.

The Coordinator will decide whether to grant credit based on the standards of the previous work and its relevance to the student's program. The Coordinator will then send the request form to the Wharton Doctoral Programs Office for Vice Dean Approval. Transfer credits will be posted once a student has passed the qualifying exams.

### **4.2. Credit for Courses Taken in the Wharton MBA Program**

Precisely the same rules as above apply to transferring credits from the Wharton MBA Program. Upon the Coordinator's approval of MBA course work based on standards, relevancy, and departmental rules, a maximum of eight MBA course credits may be transferred. No MBA courses will be transferred with a grade below an A- (or its equivalent) as above. The request for such a transfer should be submitted during the student's first year in the PhD Program.

## 5. Requirements and Monitoring

### 5.1. Phases of the Program

The Wharton Doctoral Programs consist of two distinct phases: pre-candidacy and candidacy.

During the pre-candidacy phase,

- student completes the required coursework\*
- qualification examinations,
- any requirements imposed by the student's specific Department or Program such as additional qualifying examinations and research papers.

\*If a student has completed all other pre-candidacy requirements and has one or two CUs remaining, they may move onto dissertation status and enroll in no more than one CU per semester while on dissertation, with the approval from their Doctoral Coordinator

The Coordinator will review the student's record to confirm that all pre-candidacy requirements have been met. Upon satisfying these requirements, prior to the start of each semester, the Department must inform the WDP Office of any students entering dissertation status.

The candidacy phase comprises

- preparation and defense of the dissertation proposal,
- doctoral dissertation (see below and in Section 6 of this document), and
- final defense of the dissertation.

Students are eligible to enroll in 1 CU per semester upon entering Dissertation Status.

### DISSERTATION

Upon advancement to candidacy, each student has a Dissertation Committee consisting of at least three faculty members (including at least two members of the Wharton graduate group), which may include the Supervisor/Advisor. At least half of the members of the Dissertation Committee must be members of the graduate group at the time of appointment to the committee. Faculty who are not members of the graduate group may serve only with the written approval of the graduate group. The authority to approve membership on committees may be delegated to the graduate chair.

The Chair of the Dissertation Committee must be a member of the Standing Faculty in the graduate group. If the Chair of a Dissertation Committee leaves the Standing Faculty before the dissertation is completed, then a new chair from the Standing Faculty in the Graduate Group must be appointed as chair. The Dissertation Committee chair is responsible for convening committee meetings, advising the student on graduate group and university expectations, and assuring the graduate group chair that the group's requirements have been met. The Dissertation Supervisor may serve as Chair of the Dissertation Committee, but is not required to do so.

The Dissertation Supervisor is the person primarily responsible for overseeing the student's dissertation research. A student may have both a Dissertation Supervisor and a Dissertation Co-Supervisor, or two Dissertation Co-Supervisors, if that responsibility is shared equally.

Dissertation Supervisors, and Dissertation Co-Supervisors, must be members of the Standing Faculty at Penn, with special approved exceptions. A member of the Associated Faculty (such as Research Faculty or Adjunct Faculty) may be permitted to serve as a Dissertation Supervisor with prior approval of the Vice Provost for Education on a case by case basis. The Graduate Group Chair may petition the Vice Provost for Education, in advance, for an exception. In such cases, a member of the Standing Faculty in the graduate group must be appointed as the Dissertation Committee Chair.

The Dissertation Committee meets at least once annually with the student to review the student's progress. The student prepares an annual Dissertation Progress Report and the committee gives timely feedback (within one month) and confirms whether progress is satisfactory. A copy of the signed progress report submitted to the Supervisor/Advisor and Doctoral Coordinator. Dissertations based on joint work with other researchers are allowed, if, in such cases, a unique and separate dissertation is presented by each degree candidate. The candidate must include a concise account of his or her contribution to the whole work. Authorship of a dissertation by more than one-degree candidate is not allowed.

## **5.2. Annual Review**

Each PhD student is required to complete an online annual review once a year. The PhD Coordinator will review the student's annual review and provide feedback. PhD Coordinators are highly encouraged to schedule a one-on-one meeting with each student to go over the student's progress over the past academic year.

### **5.2a Academic Standing**

#### **Academic Good Standing:**

In order to remain in good academic standing, the following requirements must be completed successfully within the timeframe outlined in this handbook and/or dictated by the student's department policies:

1. Maintaining a minimum GPA of 3.0
2. Required coursework
3. Summer research papers
4. Qualifying exams
5. Proposal defense

Each requirement may affect good standing in different ways per the individual departments. Some departments may have additional requirements to remain in good standing. Please consult your PhD Coordinator for good standing requirements.

#### **Academic Probation and Withdrawal:**

Students not making satisfactory academic progress may receive a warning or be placed on probation. In the absence of improvement in the subsequent semester or within the timeframe outlined by their PhD Coordinator, students on warning or probation may be dropped from their program.

## **5.3. Grade Standards**

At the end of the Spring term of every year, each student's grade performance for the previous twelve months will be reviewed. A student who does not achieve at least a B average for all courses taken or reported during that twelve-month period (including final grades for incompletes for previous work) will normally be asked to leave the program. For purposes of computing an average, the grade suffixes "+" or "-" count as one third. A student achieving less than the B average described above must submit a written statement in support of his or her continuation in the program. Failure to initiate the written appeal results in an automatic withdrawal from the program by the start of the next academic year. The Doctoral Coordinator is responsible for seeing that the faculty in the student's concentration or program review the student's performance and make a recommendation as to whether the student should be permitted to continue in the program. They will also determine what conditions, if any, must be met over and above the School's and the program's usual requirements. The faculty's recommendations should then be passed on to the Vice Dean of the Doctoral Programs, who will determine whether the student is to be terminated or not. Permission to continue will be granted only under the most extenuating circumstances and only when the actual average is quite close to B.

### **5.3.a. Incompletes**

The mark of I is used to designate "incomplete." A student who fails to complete a course and does not withdraw or change his/her status to auditor within the prescribed period shall receive at the instructor's discretion either a grade of I (incomplete) or F (failure). It is expected, in general, that a student shall complete the work of a course during the term in which that course is taken. The instructor may permit an extension of time up to one year for the completion of the course. In such cases, any course which is still incomplete after one calendar year from its official ending must remain as "incomplete" on the student's record and shall not be credited toward a degree.

## **5.4. Statistics Requirement and Other Required Courses**

According to the requirement established by the Wharton Faculty in the November 4, 1986, meeting, as elaborated and approved by the Policy Committee on February 5, 1987, all Wharton doctoral students must demonstrate competency in statistics. Departments may establish special requirements for their students depending on their area of specialization. All students, however, are required to demonstrate proficiency in the material covered in one of the following course combinations:

1. STATISTICS 5000 and 5010 (or PSYCHOLOGY 6610 and 6610)
2. STATISTICS 5150 and 5160
3. STATISTICS 5200 and 5210
4. STATISTICS 9700 and 9710
5. ECONOMICS 7300 and 7310
6. SOCIOLOGY 5350 and STATISTICS 5010

**\*Non-statistics Wharton PhD students may take STAT 9270, 9610, 9620 and STAT 5420 as electives only after fulfilling one of the required course combinations listed above. Students who would like to take these courses are required to ask for an interview with the instructor and receive his/her permission.**

Descriptions for each course may be found in the [University Catalog page](#).

Exceptions to these sequences, or the ability to “mix and match” courses from these sequences, is allowed- however, must receive written approval from the current doctoral coordinator of the statistics department program.

The student must obtain a grade of B- or better in the required statistics courses or pass a waiver examination. Alternatively, departments may establish student competency in statistics by a preliminary examination, administered by the Economics or Statistics Department as appropriate, covering all the material of their required course sequence.

Current guidelines and procedures for retaking preliminary examinations will prevail for the statistics waiver exam. In particular, no student will be allowed to take the examination more than twice, except under unusual circumstances, as decided individually by the Vice Dean and the Doctoral Coordinator. Similarly, the student must obtain a grade of B- or better in other courses required by departments. Alternatively, departments may establish student competency in those other required courses by a preliminary examination administered by the departments.

#### **5.4a Statistics Sequence Waiver**

Effective March 1, 2023, if a PhD student has taken a graduate level Statistics course or courses prior to starting the PhD program, they may be waived out of one or both of the required Statistics course sequence if the course was taken within the last 10 years. Approval for the waiver must be granted by the student's PhD coordinator and the Statistics and Data Science PhD Coordinator. Some departments may require higher level STAT courses to be taken if students have previously taken graduate level STAT courses.

The student must provide the detailed course description and syllabus to the Statistics and Data Science PhD Coordinator for approval. If the course was taken while the student was an undergraduate, the course can waive the requirement, but the student must replace the course with an additional PhD elective to meet the total PhD level credit unit requirement for their program. If the course was taken as a post-baccalaureate course or graduate course, students should complete the Request for Transfer Credit form and the course may transfer as one of the required Statistics courses.

#### **5.5. Qualification Examinations**

Qualification examination requirements vary by Department. Students should consult their department's section of this handbook for the requirements of specific Departments (and the materials in the appendices to this document). A qualification examination is defined as an examination or series of examinations designed to test the student's mastery of the subject matter in a given field of study. Administratively, a qualification examination is any examination, which must be completed after enrollment in the program in order to gain admission to candidacy. A doctoral program student who twice fails any qualification examination required by the student's department or program will ordinarily be dropped from the program. However, a student who fails twice may, under extenuating circumstances, appeal for a third opportunity to take the examination. The appeal should be addressed in writing to the Departmental Coordinator in the student's concentration or program. First, the Coordinator must evaluate the request and submit a written recommendation to the Vice Dean of Doctoral Programs. Second, the appeal must be evaluated by the Vice Dean.

In order for the student to be granted a third opportunity to take a qualification examination, the student's appeal must be approved by both the Coordinator and the Vice Dean. Appeals will only be considered for possible approval in situations where there are extenuating circumstances. The student's written appeal should clearly state special conditions that the student feels justify the request.

#### **5.6. Student Development**

##### **Communication Program and Workshop**

One of the program goals is to make your entry into the job market a smooth and successful experience, as well as strengthen communication skills to help with paper and conference presentations and job talks. The Wharton Communication Program has developed a helpful introductory communication workshop for our students. In this workshop, they'll introduce students to the basics of communicating their ideas effectively. They'll also work on developing students' individual speaking style.

The Wharton Communication Program provides a supportive environment for new public speakers. The communication workshop is held during the student's first year (Management, Ethics and Legal Studies, Operations, Information and Decisions, and Statistics) or second year (Accounting, Applied Economics, Finance, Health Care Management and Economics, and Marketing) and is a half-day workshop on communications skills that is meant to both educate the doctoral student and make them aware of areas of needed improvement. This workshop is mandatory and is part of the introduction to Wharton's Doctoral Programs.

Students can also meet one-on-one with a communication coach to prepare for presentations or job talks.

#### **TA Training through Center for Teaching and Learning**

Students in the **Applied Economics, Ethics and Legal Studies, Finance, Management, OID, or Statistics departments** will be required to complete the 3-day TA training at the beginning of the academic year through the Center for Teaching and Learning

#### **Writing Support and Coaching**

Lynn Selhat provides one-on-one coaching for doctoral students. One-on-One Coaching includes structural help: positioning an argument, creating a logical flow, organizing the introduction and copy editing: cutting to fit length requirements, tightening for better flow, editing for more active and clear language. Please check with your department for any required writing coaching for research or job market papers. For writing support, please contact Lynn directly at [selhat@wharton.upenn.edu](mailto:selhat@wharton.upenn.edu)

#### **3<sup>rd</sup> Year Re-Orientation**

This orientation serves to help students progress through their research. The transition from coursework to full-time research can be an adjustment. This quick one-hour orientation with faculty and senior students' advice on the following topics to help 3<sup>rd</sup> year students during this stage of their program:

- How to proceed in this phase (no longer taking courses, preparing to propose)
- Advice on how to find a topic
- How to be efficient and motivated during this phase
- Theoretical and empirical methods of research
- Student perspective on third-year transition
- Reminders of programs and resources available to students that are relevant to you at this stage.

#### **5.7 University PhD Degree Requirements**

Above and beyond requirements stipulated in this document, the University of Pennsylvania has guidelines for PhD requirements. A more detailed description can be found at the provost's website: <https://catalog.upenn.edu/graduate/policies-procedures/>

#### **5.8 Independent Studies**

All PhD students must receive approval from their department PhD Coordinator to register for any independent study. Some departments may have stricter independent study limits. Please consult your department's policies on independent studies prior to completing the Independent Study Request form.

## 6. Dissertation Stage\*

Writing a dissertation is an intense process of interaction between the student, the dissertation advisor and other interested faculty. The formal process takes place in two phases. In the first phase, the student prepares a proposal indicating the nature of planned dissertation research and its intended contributions. In the second phase, after the proposal has been approved, the dissertation research unfolds under the careful guidance of the student's dissertation advisor

\*Refer to section **5.1 Phases of the Program** under **Section 5 Requirements and Monitoring** above.

### 6.1. Dissertation Proposal Phase

For a student to remain in good standing, the student must defend a dissertation proposal by the end of the fourth year in the program, unless otherwise specified by their department. Approval to extend the dissertation proposal defense to the fifth year may be granted by the PhD Coordinator under individual program curriculum guidelines or requirements.

The student is encouraged to consult faculty members with whom they share research interests to seek their advice and assistance in formulating a dissertation proposal topic. After consultation with the student and interested faculty members, the Doctoral Coordinator in the student's program will appoint a dissertation advisor. Of course, the choice of advisor is ultimately up to the student, but it must be approved by the given department's coordinator. The advisor has primary responsibility for advising the student on the dissertation. The preparation of a dissertation proposal should begin relatively early in the student's studies for the student to have early feedback on the feasibility and desirability of planned dissertation research. The primary purpose of the dissertation proposal is to provide constructive feedback to the student. The proposal does not constitute an implicit or explicit contract on the ultimate content or acceptability of a dissertation. This can only be decided as part of the evolving dialogue between student and faculty members as the dissertation research proceeds. In consultation with the student, the advisor will recommend a dissertation committee.

#### 6.1.a Dissertation Committee

The function of the committee is to provide advice concerning the research, to participate in the proposal defense and dissertation defense, and to decide whether the proposal and the dissertation satisfy the standards of the Wharton Doctoral Programs. The dissertation committee shall consist of no fewer than three members, including the dissertation Advisor, and no more than five members.

- At least three must come from the standing faculty of the University of Pennsylvania
- No more than one committee member may come from outside the University of Pennsylvania.\*
- A clear majority of the committee, including the committee chair, must come from the standing faculty of the Wharton School. If there are four members in the committee, half must be from Wharton
- At least two standing faculty members must hold primary appointments within the department of the student's specialization.

#### Committee Member Role Definitions:

**Supervisor/Advisor/Co-Supervisors** - primary responsibility for advising the student on the dissertation (necessary)

**Chair** - must be standing faculty and within Wharton graduate group. Responsible for convening committee meetings, advising the student on graduate group and university expectations, and assuring the graduate group chair that the group's requirements have been met. The committee chair does not have to be the primary dissertation advisor. Your advisor can serve as chair.

**Committee** - provide advice concerning the research, to participate in the proposal defense and dissertation defense, and to decide whether the proposal and the dissertation satisfy the standards of the Wharton Doctoral Programs

\*Students must complete a separate request for approval of external committee member form

#### EXAMPLE OF MARKETING DEPARTMENT DOCTORAL STUDENT DISSERTATION COMMITTEE:

**Chair and Committee Member:** Professor Eric Bradlow, Marketing

**Dissertation Advisor and Committee Member:** Professor Patti Williams, Marketing

**Committee Member:** Professor Noah Gans, OIDD

- All committee members are standing faculty of the University of Pennsylvania
- All committee members are standing faculty of the Wharton School including chair
- Two members hold primary appointments in the same area (Marketing)
- A member outside the University of Pennsylvania could be a member of this committee but is not a requirement for the composition of a complete committee.

The committee chair is responsible for convening meetings, advising the student on rules, and advising the Vice Dean of the Wharton Doctoral Programs that all graduate group requirements have been met. The student's primary advisor may serve as committee chair provided the primary advisor is a member of the standing faculty of the Wharton School.

Students must complete the Dissertation Committee Request Form through Penn Graduate Forms and have it first approved by their doctoral coordinator. The Coordinator will recommend any changes in the committee that they deems appropriate. After approval of the committee by the Coordinator, the form will be sent to the Vice Dean for final approval. The Dissertation Committee Request Form must be completed no later than two weeks prior to the proposal defense date. The Vice Dean will normally approve the committee makeup, assuming only that it follows these guidelines concerning its membership. These rules for approval also apply to the replacement of committee members who are unable to continue to serve on the committee.

When the student has developed a written dissertation proposal that the advisor judges is ready for oral defense, a formal proposal defense before the dissertation committee is held. The defense cannot occur until the student has been admitted to candidacy. All interested faculty and doctoral students are invited and encouraged to attend the proposal defense, but the decision to accept or reject the proposal rests with the dissertation committee, who will communicate their decision in writing to the Vice Dean of the Doctoral Programs. All members of the dissertation committee shall vote to approve or not approve the dissertation proposal. At least three committee members shall be present for the proposal defense. At least three committee members must approve the proposal. Following approval of the proposal, the candidate enters the dissertation phase.

## **6.2. Dissertation Phase**

When the dissertation is judged complete by the candidate's advisor, it must be defended orally in a final dissertation defense before the dissertation committee. Any changes in the composition of the dissertation committee since the approval of the proposal should be submitted to the Vice Dean, in writing, by the dissertation advisor. The same rules for composition of the committee, voting, and committee attendance at the final dissertation defense apply as for the proposal defense. Although other faculty members are encouraged to participate in the defense, the decision to accept or reject the dissertation is made by the dissertation committee only, and is to be communicated in writing to the Vice Dean. A positive vote from at least three members of the dissertation committee is required for the dissertation to be approved.

## **6.3. Announcement of Defense**

In order to encourage maximum participation of interested faculty and students, as well as to encourage scholarly interaction and inquiry, proposal defenses and final dissertation defenses must be publicly announced at least two weeks in advance of their occurrence. Announcements are usually made via e-mail.

### **6.3.a Dissertation Committee at Defense**

All dissertation committee members should be present (in person or virtual) during the time of defense.

## **6.4. Dissertation Defense Timeline/Checklist**

See Wharton PhD Programs Degree Information located at the [Wharton Doctoral Programs Inside website](#)

All questions regarding Degree Requirements and Graduation requirements should be directed to Gidget Murray [gmurray@wharton.upenn.edu](mailto:gmurray@wharton.upenn.edu) the Wharton Doctoral Programs office.

## 7. Time Limitations (see University Graduate Rules)

<http://www.upenn.edu/provost/academic rules>

Students must complete **all** course work, qualification examinations, and the dissertation requirement within 16 terms, (excluding summer) period from the date of their matriculation, excluding some leaves of absence. Except in unusual circumstances, students will be expected to gain admission to candidacy status prior to the end of their fourth year in the program (excluding leaves of absence). Requirements for admission to candidacy are in section 5 of this manual.

If a student has not completed all requirements for the PhD (including deposit of the dissertation) at the end of the fifth year after beginning dissertation candidacy, they must submit to the full dissertation committee, within two months of completing that fifth year, a copy of all written work completed to date on the dissertation. If the student is unable to construct such a committee, they will be dropped from the doctoral program. The committee members will evaluate this material, and report to the department Doctoral Coordinator and to the Vice Dean for the Wharton Doctoral Programs, recommending that one of the following actions be taken:

Students who have not completed their dissertation requirement within the eight-year time limit will be dropped from the Wharton Doctoral Programs. Students who are at the dissertation phase and are dropped due to the eight- year time limit may, however, at some later date graduate from Wharton's Doctoral Programs if they meet the following conditions:

- have been admitted previously into candidacy;
- have successfully completed the dissertation proposal phase prior to the expiration of the 16- term limit;
- the relevancy of their research and training has been certified by the dissertation committee, as described in the preceding paragraph;
- dissertation is approved by an appropriately constituted faculty dissertation committee

The faculty is under no obligation to provide advice to former students who have not completed their dissertation requirement within the 16-term time limit.



## 8. Appeals, Academic Responsibility and Grievances

### 8.1. Appeals

Students or Faculty who wish to appeal a specific decision made under the rules stated in this document should file an appeal in writing with their Doctoral Coordinator, with a copy to the Vice Dean of the Wharton Doctoral Programs within 30 days after initial decision has been made. Appeals will be handled by the coordinator in consultation with the Vice Dean. The final decision on an appeal rests with the Vice Dean, who may consult the Doctoral Executive Committee specific matters. Of course, a student also has the right to appeal the Vice Dean's decision to the Dean of the Wharton School and to other University grievance committees appropriate to the particular substantive issues of the student's appeal.

### 8.2 Academic Responsibility, General Conduct and Disciplinary Procedures

The mission of the Wharton School Doctoral Code of Ethics ("Code") is to promote the growth of ethically responsible scholars through adherence to the highest standards of academic integrity and overall ethical conduct, to develop a sense of individual responsibility on the part of each member of the Wharton doctoral community, to participate actively in maintaining such standards, to foster an environment of honor and trust within the Wharton community, and to engender respect for the ethical standards of the Wharton graduate. Fulfilling this mission is a collective responsibility of the members of the Wharton doctoral community.

The Wharton doctoral student will maintain the highest standards of honesty and integrity. The student will strive for these standards in their representations, academic pursuits, and respect for the property and individual rights of others; will uphold the specific principles described in the Code; and will actively support the Code. Standing in the Wharton doctoral community will be subject to adherence to these basic principles of ethics. The Code will be administered and maintained by a Wharton Doctoral Division, under the direction of the Vice Dean for Doctoral Studies upon recommendations of the Ethics Committee of faculty and student representatives.

#### 8.2.a SPECIFIC STANDARDS

**(i) Representations:** The Wharton doctoral student is expected to represent themselves honestly in all oral or written statements. The student will not misrepresent any material fact to other students, faculty, staff, prospective employer, or anyone else while representing himself or herself as a member of the Wharton community, especially through, but not limited to:

- Lying to prospective employers, either directly through oral or written statements or indirectly through misrepresentation of background in resume;
- Misrepresenting any material fact on a Wharton application, financial aid form, or other official document;
- Lying to a fellow student, a faculty member, or an administrator in order to gain preferential treatment; or
- Misrepresenting the originality of one's work, including failure to cite the contributions of another (plagiarism);
- Giving or receiving any unauthorized aid on an assignment or exam, including working in group on any assignment that has been designated as individual by the professor;
  - Failing to comply with the academic guidelines established by the instructor for assignments;
  - Continuing to write after time has been called on an exam; or
  - Submitting for credit substantially the same work done for another assignment either academic or professional, except with prior approval of the instructor.

In the absence of clear guidelines regarding an assignment, presentation, examination, or other academic submission, the Wharton doctoral student is expected to seek any and all necessary clarification from the instructor.

**(ii) Academic Pursuits:** The Wharton doctoral student is expected to represent his or her academic product honestly and fairly. The student will not use any method to gain an unfair advantage over other students in academic pursuits.

**(iii) Property:** The Wharton doctoral student is expected to respect the materials, data, and property of other members of the Wharton community and visitors to the Wharton School. The student will not misuse or misappropriate the materials, data, or other property of another, especially through, but not limited to:

- Accessing, removing, or destroying any information, materials, or other property from another student's or student organization's premises, locker, computer files or mail folder without prior permission-
- Accessing or removing without prior permission, or hiding or destroying any corporate records, files, job postings, or academic materials from the library, or any other administrative office;
- Divulging or distributing proprietary or confidentially provided information obtained for class assignments; or
- Utilizing for commercial gain any material provided to Wharton specifically and restrictively for educational purpose without prior permission of the provider.

**(iv) Individual Rights:** The Wharton community is committed to an environment free from discrimination and harassment of any kind. The Wharton doctoral student is expected to respect the individual rights of others. Specifically, Wharton students will observe the University of Pennsylvania policies against physical intimidation, verbal harassment, and discrimination. Any complaint of a violation of these policies should be brought to the attention of the Vice Dean and Director of the Wharton Doctoral Programs.

## **8.2.b STANDING IN THE COMMUNITY**

A doctoral student who accepts and adheres to the standards discussed above will remain in good ethical standing within the Wharton community. If a student fails to adhere to the Code, the student may be sanctioned. Any sanction will be enacted upon the recommendation of an Ethics Committee at the discretion and action of the Vice Dean of the Wharton Doctoral Division ("Vice Dean").

In deciding what sanctions to recommend, the Committee will consider all relevant circumstances, including the severity of the violation involved. Appropriate sanctions include, but are not limited to the following: Letter of Reprimand, Probation, Suspension, and Expulsion. All students matriculating in the Doctoral Division must comply with the standards set forth in the Doctoral Code of Ethics and the Policies on Conduct of the University of Pennsylvania.

## **8.2.c ADMINISTRATION OF THE CODE**

### **(i) Composition of the Ethics Committee:**

The Committee will comprise three faculty members and one doctoral student selected by the Vice Dean of the Wharton Doctoral Division from the current membership of the Wharton Doctoral Executive Committee. One member of the Ethics Committee will be the graduate group coordinator from the student's graduate group, unless in the judgment of the Vice Dean that faculty member has a potential conflict of interest with respect to the outcome of the case. The Committee will be constituted for the duration of the student's case, but will be dissolved upon the completion of the case. The Committee shall select one of the faculty members to serve as Chair of the Committee.

### **(ii) Responsibilities of the Ethics Committee:**

The Committee shall be responsible for hearing and resolving the assigned complaint(s) of misconduct.

The Committee will hold a closed hearing to hear the complaint and to allow the student an opportunity to reply to the complaint. Hearings are not intended to be judicial in nature. The complaint(s) is not required to attend this hearing. The student may have an advisor present at the hearing. The advisor is to be a member of the University of Pennsylvania community and may be a student, faculty member, or administrator chosen by the student. If criminal charges are pending or reasonably in prospect, the student is entitled to be advised by an attorney.

The role of the advisor, including legal counsel when appropriate, is to advise the student. The advisor is not to speak for the respondent nor have an active role in the hearing. Within two weeks of the completion of the hearing, the Ethics Committee will draft a written recommendation for consideration by the Vice Dean of the Doctoral Program. The recommendation should summarize the complaint, the student's response to the complaint, and the Committee's findings of fact and reasons for the Committee's recommendation. The recommendation may, or may not, propose a specific sanction. It is understood that any recommendation sanction will not be binding on the Vice Dean.

Upon receiving the recommendation from the Ethics Committee, the Vice Dean will render a ruling in the case in a timely fashion, and in the event a violation of the Code of Conduct, impose an appropriate sanction upon the student. The Vice Dean will inform the student of the decision in writing. The Vice Dean's decision and the recommendation of the Ethics Committee will be forwarded to the Deputy Dean of the Wharton School. In the event of a finding of an Ethics Code violation, the student shall receive a copy of the Ethics Committee's written recommendation and the basis for that recommendation.

**(iii) Complaints:** Any member of the University community wishing to complain of a breach of Code may submit their complaint in writing to the Office of the Vice Dean of Doctoral Programs. Complainants will be known to the Ethics Committee. All contacts between the complainant(s) and the Ethics Committee will be held in confidence according to the procedures of the Ethics Committee.

**(iv) Appeals:** Any student sanctioned under the Code by the Vice Dean may appeal the decision and/or the sanction to the full membership of the Wharton Doctoral Executive Committee. The appeal should be submitted in writing to the Vice Dean within seven days of the receipt of the Vice Dean's letter informing the student of the decision and the sanction. The Vice Dean may meet with the student to clarify the Ethics Committee decision and/or sanctions. If deemed appropriate by the Vice Dean, the Vice Dean may convene the full membership of the Wharton Doctoral Executive Committee, excluding those members who had served on the original Ethics Committee, to hear the student's appeal. One faculty member of the full Doctoral Executive Committee will be chosen

chair by the Committee for the purpose of the appeal. The student will be given the opportunity to present their appeal in person, and an advisor for the student may be present. Upon hearing the appeal, the constituted Doctoral Executive Committee will render a decision as to the violation and the sanction. The Committee's decision is final.

**(v) Jurisdiction:** The Ethics Committee or the Wharton Doctoral Executive Committee may refer the matter to the University Office of Student Conduct at any time.

#### **8.2.d DISMISSAL FOR INADEQUATE ACADEMIC PERFORMANCE**

It is understood that the procedures outlined here apply only to conduct violations. Dismissal for inadequate Academic performance or progress remains the responsibility of each student's graduate group.

#### **8.3. Grievances**

A student or faculty member at any time has the prerogative of consulting the Ombudsman of the University to seek advice on grievances or appeals of a general nature. The student may also file a statement of grievance with the Wharton Doctoral Programs, as described below.

Students with grievances not covered by sections 8.1 and 8.2 of this manual can present grievances in writing to the Vice Dean, with copies to the student's Department Chair and Coordinator. Statements of grievances should indicate the matter under dispute as well as any remedies the student considers appropriate.

Upon receipt of a statement of grievance, the Vice Dean will appoint an ad hoc advisory committee. The committee will consist of two members of the standing faculty that do not have primary or secondary appointments in the student's Department, one member of the standing faculty from the student's Department who is not involved in the dispute, and one doctoral student representative. The function of the committee is to investigate the grievance and make a recommendation to the Vice Dean. The committee's investigation will include an interview or interviews with the student and any faculty, administrators, or other students involved in the dispute.

Upon receipt of the recommendation of the ad hoc committee, the Vice Dean will render a decision regarding the disposition of the grievance. The Vice Dean will carefully consider the committee's recommendation, but the final decision on the matter will rest with the Vice Dean.

#### **8.4. Authorship Policy for Doctoral-Student Faculty Collaboration**

Doctoral study at the Wharton School requires students to work with faculty on research. Before initiating joint research activities, the faculty member or mentor and the student should have a clear understanding of how authorship credit on any papers that arise from the work will be determined. The disciplinary standards, styles, and procedures for credit, for the order of authors' names, and for acknowledgement footnotes vary importantly across Wharton's doctoral programs, and across the research centers and schools in which its faculty and students participate, so there cannot be a single set of rules or procedures. The key element of the policy is therefore one of statement of expectations by the faculty member or mentor and agreement by the student at the start of the research; the actual expectations and policies must be mutually agreeable and, if they are not, student or faculty should decline collaboration. When roles and expectations change over the course of collaboration, the understanding concerning authorship should be discussed again and changed if necessary. If disputes arise, the process for resolution outlined in the Graduate School rules and procedures should be followed.

## **Appendix 1. Accounting PhD Policies and Requirements**

### **Course information**

Students are required to complete a minimum of 16 graduate level courses, of which eight at most can be transferred from other programs, schools or universities. Up to four courses per semester may be counted toward the overall requirement of 16 courses. The eight courses taken in the first year usually consist of five required core courses in economics, finance, and econometrics courses (see below), two or three required accounting core courses (ACCT 9300, ACCT9400, ACCT9410, ACCT9420, ACCT9430 depending on which courses are being offered that year), and sometimes one elective. In the second year, students take the remaining required accounting core courses (from the above list), and additional elective courses in economics, statistics, finance, management, or law. In the third year, students take any remaining electives, one of which can be the workshop colloquium (ACCT9810). Some students also occasionally construct individualized independent studies with faculty (ACCT9990), but only one independent study is allowed to count toward the 16 required CUs.

#### Accounting Courses:

##### Accounting Core (required):

ACCT 9300 – Empirical Design in Accounting Research (1 credit)  
ACCT 9400 – Research in Accounting I (1 credit)  
ACCT 9410 – Research in Accounting II (1 credit)  
ACCT 9420 – Research in Accounting III (1 credit)  
ACCT 9430 – Research in Accounting IV (1 credit)

#### Economics Courses:

##### Economics Core (required):

ECON 6100 – Microeconomic Theory (1 credit)  
ECON 6110 – Game Theory and Applications (1 credit)  
Students may, with prior approval of the Accounting PhD coordinator, satisfy this requirement by taking ECON 7300/7310.

#### Econometrics/Statistics Courses:

##### Econometrics/Statistics Core (required)\*

STAT 5150 – Advanced Statistical Inference I (1 credit)  
STAT 5160 – Advanced Statistical Inference II (1 credit)  
\*In extraordinary cases, with approval of the Accounting PhD coordinator, a student may satisfy the Econometrics/Statistics requirement with other course sequences.  
Finance (1 course)  
FNCE 9110 – Financial Economics (required)

Six additional graduate level course electives commonly taken by accounting doctoral students include:

#### Accounting Electives:

ACCT 9810 – Workshop Colloquium (1 credit)

#### Common Finance Electives:

BEPP 9110 – Empirical Public Policy  
BEPP 9520 – Economics and Law  
FNCE 9120 – Corporate Finance and Financial Institutions  
FNCE 9210 – Introduction to Empirical Methods in Finance  
FNCE 9230 – Financial Economics Under Imperfect Information  
FNCE 9260 – Empirical Methods in Corporate Finance

#### Other Electives:

MGMT9700 – Applied Methods in Management Research  
MLA 5410 – Academic Writing and Research Design  
OIDD 9120 – Introduction to Optimization

Workshop colloquium elective course (ACCT 9810/9820) – Students attend workshops in departments outside of accounting to provide student exposure to theory, research designs and methods that are being explored outside of accounting to provide breadth of exposure to foster innovative research ideas. Students are required to attend 15 non-accounting workshops over one academic year and write up a referee report for 8 of those workshop papers. They are also required to write up at least one research proposal that stems from theories or research methods gleaned from one or more of the workshops attended.

## **Grades**

In order to remain in good standing, a student must maintain at least a Grade Point Average of a "B" or better.

Students must pass all required courses with a grade of B- or better. A student that receives an "F" in any of the required courses can be asked to leave the program.

## **Requirements to move onto candidacy**

### **Preliminary examination**

The accounting preliminary examination is given once each year, usually in late May after the student's second year in the program. All students enrolled in the Wharton PhD Program in Accounting must take the preliminary examination. If a student fails the examination, the student may retake the exam the following year. In some cases, and at the discretion of the accounting doctoral coordinator, alternative post-examination arrangements may be made for students that performed satisfactorily on some, but not all, portions of the exam. If a student fails the examination twice, the student will not normally be allowed to continue in the program as a PhD student.

**Annual paper requirements:** To remain in good standing, students are required to write and present a research paper in each year of the program.

### **First-year paper**

The first-year summer paper provides an opportunity to learn research skills outside of the classroom experience. Students interact with a faculty member in directed research in a field in which the student has an interest. All first-year students are required to submit a research proposal by June 15th that must be signed off by one accounting faculty advisor. The paper is written over the summer and must be turned in to the faculty advisor for sign off by September 5th of their second year (sign off forms are available from the department business administrator). The first-year paper must then be presented to the full faculty in a workshop (usually scheduled during September of the second year - the doctoral coordinator will assign workshop dates to all students).

### **Second-year paper**

The second-year summer paper is intended to build a foundation for the dissertation. All second-year students are required to submit a research proposal by June 15th that must be signed off by two accounting faculty advisors. The paper is written over the summer and must be turned in to the faculty advisors for sign off by October 30th of their third year (sign off forms are available from the department business administrator). The second-year paper must then be presented to the full faculty in a workshop (usually scheduled during November or December of the third year - the doctoral coordinator will assign workshop dates to all students).

### **Third, fourth and fifth-year papers**

Students are expected to present a research paper in the fall semester of each subsequent year in the program. No formal sign off procedures are required, but regular mentoring from faculty is highly advisable. The paper presented in the third-year of the program is ideally an early draft of a dissertation chapter, but the student may present an alternative research paper if agreed upon by the doctoral coordinator. However, to remain in good standing in the program, the fourth and fifth year paper presentations must be a draft chapter of the dissertation.

## **Paper requirements**

The Accounting Department sets a high standard for the papers, proposals, and dissertations we require to be written and presented. This is our main tool for assessing the progress of our students and their research potential, so we demand a high threshold for passing the requirements. Papers, presentations, proposals, and dissertations are evaluated as follows:

1. Pass – the paper successfully demonstrates the student's ability to conduct and report on original and independent research.
2. Conditional Pass – the paper shows potential and the student has done quite a lot already, but there is room for minor revisions. The doctoral coordinator and selected faculty will set conditions that must be met before the paper can be considered a "Pass."
3. Major Revision Required – the paper shows potential and the student has made some progress, but there is room for thorough revisions. The faculty may require that the student successfully revise the paper by a given date before being granted a

passing grade on the paper requirement (the student may also be required to present the paper again at a later date).

4. Fail – the paper does not show a promising path forward. In some cases, this might trigger dismissal from the program. In other cases, the student will be asked to start identifying a new topic and will be given the date required to submit a new paper and present. The PhD Coordinator will provide detailed instructions and guidance based on the particular case.

**Pre-seminar discussions:** The departmental workshop colloquium is a one-hour, faculty-led discussion for all Accounting doctoral students on days when an outside visitor presents a workshop. Second, third, and fourth year students are required to attend (first year students are strongly encouraged to attend if their course schedule permits). In most weeks, the discussion is centered on the research paper that an outside speaker is presenting to the department.

**First year research assistantship:** First-year doctoral students are assigned to a faculty member as a research assistant in the spring semester (approximately ten hours per week). Faculty members propose possible projects to the PhD coordinator, and students are matched to those projects with the student's interests and skill development needs in mind. The assistantship encourages working relationships between faculty and students and provides personal training in research skills outside of the classroom setting.

### **Employment while in the Wharton Accounting PhD Program**

Students in the Wharton Accounting PhD Program are not allowed to accept employment without first receiving approval from the Wharton Accounting PhD Program Coordinator. Employment requiring approval includes all paid teaching assistant or significant grading positions within the department, paid research assistant projects within the department, and all forms of paid employment outside of the accounting department.

### **Residency Requirement**

All Wharton Doctoral Programs students must be in residency during the entirety of their PhD fellowship. In residence means that you live close enough to Penn to participate readily and consistently in-person in the intellectual life of your department and Wharton Doctoral Programs and particularly in activities that your department requires such as classes, teaching and research obligations, meeting with advisors, attending workshops and seminars. Students may petition to their PhD coordinator for permission to work elsewhere for a specified period, but such petitions should be under extenuating circumstances. The petition will be reviewed by the PhD coordinator and Vice Dean and approval is not guaranteed. If you are an international student, you will also need approval from ISSS.

## **Appendix 2. Applied Economics PhD Policies and Requirements**

The primary objective of the graduate group in applied economics is to provide a training program for students interested in the application of economic analysis to the study of markets and non-market organizations. In addition, students in other graduate groups at Wharton may benefit from courses that have a more focused approach to the use of economic analysis

### **ADMISSIONS AND FINANCIAL AID**

Students will apply for admission to the Wharton Program in Applied Economics, and may, if they wish, indicate a preferred field of study in their application. All else equal, the admissions committee may consider field choice in determining admission. Fellowship support will be in accordance with usual Wharton and University guidelines.

### **COURSE CURRICULUM**

The course of study for the PhD in Applied Economics requires the completion of 15 graduate course units. The common core consists of 3 theory courses and 3 statistics/econometrics courses. Students are also expected to master two field areas by passing two courses in each (total of 4 courses units). The remaining course units necessary to achieve 15 are split between the mandatory graduate student research seminars and other electives.

#### *CORE REQUIREMENTS*

Students will be required to master core materials in economic theory covering the topics of household decision-making, production theory, theory of markets and market failure, game theory, decision-making under uncertainty, and resource allocation in dynamic economies. The following courses will satisfy the three-course economic theory requirement:

Microeconomic Theory I: ECON 7100  
Microeconomic Theory II: ECON 7110  
Macroeconomic Theory: ECON 7200 or 7210 or FNCE 9240

Students will be required to master core materials in applied econometrics covering the topics of statistical inference, linear regression analysis, panel regression analysis, and estimation of models using discrete dependent variables. The following courses will satisfy the three-course econometric/statistics requirement:

Econometrics: ECON 7300, FNCE 9260, ECON 8310 or ECON 7310, BEPP 9110, BEPP 9310

#### *FIELD REQUIREMENTS*

In addition to the core theory and econometrics materials, students will be required to master two applied fields by passing two courses in each field. Students will be free to offer their own field as a substitute with approval of the graduate group chair and (when relevant) an appropriate advisor from another Wharton graduate group.

- Development Economics  
BEPP 9410: Development Economics
- Industrial Economics and Business Regulation:  
BEPP 9870: Industrial Organization and Competition Policy  
HCMG 9020: Special Topics of Health Services Research: Industrial Organization of Health Care  
ECON 8450: Empirical Methods in Industrial Organization
- Market Design  
BEPP 9710: Market Design
- Public Economics and Political Economy:  
BEPP 9330: Public Economics: Social Insurance & Government Expenditures  
HCMG 9030: Health Care Policy  
ECON 8410: Public Economics I  
ECON 8411: Public Economics II

- Urban Economics and Real Estate:  
REAL 9450: Urban and Real Estate Economics  
REAL 9460: Advanced Topics in Urban Economics  
REAL 9470: Advanced Real Estate and Urban Economics

- Behavioral Economics:  
BEPP 9040: Experimental Economics: Methods and Applications  
OIDD 9000: Foundation of Decision Processes  
OIDD 9040: Experimental Economics

In addition, all students must take elective courses to achieve the necessary 15 Course Credits to be eligible for Dissertation Status.

During the second and third year of the program students will be required to attend and actively participate in the graduate student research seminar. Students will also be responsible for presenting a paper of original research to the seminar before entering dissertation status. All students will also be required to attend the faculty Applied Economics Workshop during the 2<sup>nd</sup> and 3<sup>rd</sup> years.

#### WORKSHOPS

- BEPP 9000: Research Seminar
- BEPP 9620: Applied Economics Seminar

#### Program Template for Years 1-2

(Unless noted otherwise, all courses give 1 full credit)

Year 1		Year 2	
Fall	Spring	Fall	Spring
Micro Theory I	Macro Theory	Field Course	Field Course/Elective
Micro Theory II	Econometrics II	Field Course/Elective	Field Course/Elective
Econometrics I	Econometrics III	Field Course/Elective	Field Course/Elective
	Field Course	Graduate Student Research Seminar (0.5 CU)	Graduate Student Research Seminar (0.5 CU)
		AEW/Field Seminar (0.5 CU)	AEW/Field Seminar (0.5 CU)
3 CU's	4 CU's	4 CU's	4 CU's

#### Qualifying Exam

At the end of first year (usually in last week of May or first week of June), students are expected to take and pass the qualifying exam for Microeconomic Theory and the qualifying exam for Econometrics. These exams are written and graded by the Wharton Applied Economics PhD Committee. If a student fails in one qualifying exam, another opportunity to take that exam will be given at the end of the second year.

Students can also request a waiver for one or both exams if they perform well in the courses associated with each exam. A satisfactory performance for Microeconomic Theory, for example, corresponds to having an average of B or better in the Micro courses

#### Faculty Advisors

Students are required to select or are assigned two faculty advisors in the beginning of the second year in the program. Because the student will not have had all of the major field courses at that time, it is possible that a student will later decide to change advisors; such an eventuality will be considered a normal outcome. In addition, since students will not have had all of the major field course work by June of their first year, they should "read ahead" in their chosen fields to begin identifying a research topic for the Second Year Paper. Students are expected to initiate meetings with faculty members to discuss possible research topics, and these meetings should begin as early as possible after the student enters the program and are part of the process of getting to know the faculty and learning about the field.



## Candidacy Paper

The Applied Economics program provides students with several opportunities to conduct research. All students are required to write a candidacy paper in their second year to be submitted in the summer of the second year in the program. This paper should demonstrate the student's ability to conduct PhD quality research. This is often used as the Master's Thesis submission- and, as the title implies, it is one of the requirements for admission to Doctoral candidacy.

The deadline for submission of the Candidacy Paper is strictly enforced, and failure to complete and submit the paper by the deadline (July 15 of the end of the student's second year in the program) is grounds for dismissal from the program. The paper must be submitted to the faculty members who are the student's principal advisors for the project, as well as to the Doctoral Coordinator. A copy of the candidacy paper, together with letters from two faculty members noting approval of it, must be in each student's file in the Program office prior to the start of the student's fifth term (typically the start of the third year). Failure to fulfill this requirement may result in the student being dropped from the program.

The main objective of the candidacy paper is to demonstrate the student's ability to do original research. Often the Candidacy Paper is submitted for publication, and it can also serve as the foundation for PhD research, possibly as a dissertation essay. The Candidacy Paper must be solely authored by the student, not co-authored with the faculty advisor.

Milestones on the road to the candidacy paper are as follows:

September of 2nd year in the program	Faculty advisors selected
Fall semester, 2nd year	Candidacy Paper proposal
Spring semester, 2nd year	Work on Candidacy paper
Submit final version of Candidacy Paper	

## Admission to Candidacy

Before admission to candidacy, the student is required to:

- Complete all required coursework, including all core courses, with at least a B+ or better in each course and with an average GPA of B or better. (For some courses, a passing grade on a qualifying exam can substitute for a grade below B-.)
- Pass both qualifying exams or request exam waivers.
- Submit a satisfactory candidacy paper.

## The PhD Dissertation

The best ways to find a dissertation topic is to talk to the program faculty and read the literature. Discussions with faculty can range from "cold calls," where the student asks the faculty member for topic suggestions, to more proactive visits where the student discusses potential topic ideas that have come up in course work or research seminars. Students should also take a close look at recent dissertations written by students in their major field as well as dissertations written by students from other Wharton departments.

There are two primary models for the organization of dissertations. The "single study" traditional dissertation, and the essay approach. In the latter approach, two or three essays are generally found acceptable by the student's dissertation committee, depending on length and quality. Dissertation essays are more prevalent for a number of reasons, including most importantly, (a) the Candidacy Paper may be permitted to constitute a substantial part of one essay, (b) an essay can be used as an interview paper (see discussion below), and (c) if properly structured, an essay can often be converted into a paper to be submitted to a journal. Whether two or three essays are appropriate depends on the length and complexity of the research undertaken and is determined by the student's dissertation committee.

Dissertation essays may be co-authored, although the extent to which this is appropriate will depend on each student's topic, doctoral committee, and faculty advisor. A circumstance where a co-authored essay might be appropriate could arise from a joint research project with a faculty member. However, the student's dissertation must include at least one essay that is solely authored by the student.

The dissertation process must begin with the selection of a principal advisor or co-advisors. Each student is responsible for this

selection, and then the student works with the advisor(s) to select the dissertation topic and begin exploratory research. The student and advisor then work together to select committee members. Committee members can be approached to join the committee by either the student or the principal advisor(s). The student should work with the advisor(s) to arrange a mutually agreeable procedure. The student should review the Wharton Doctoral Programs Policies and Procedures, to be sure that the committee structure satisfies the overall requirements of the Wharton Doctoral Program.

Important: the PhD Dissertation proposal must be defended before the end of the fourth year in the program. Failure to defend can result in dismissal from the program.

### **Going on the Job Market**

The ultimate objective of the Wharton Doctoral Program is to prepare our students for a teaching and research career, ideally at a college or university. Because the placement process for academic jobs is lengthy, students should become familiar with it well in advance of the “job market year.” The program provides full support for students going on the job market, and a series of meetings and timelines are provided to the students during the fourth and fifth years in the program.

### **Program Administration**

The program will be administered by the graduate group in Applied Economics. Primary appointments in the Departments of Business Economics and Public Policy and Real Estate will be automatic members of the graduate group and comprise the initial membership of the graduate group. The graduate group can extend membership to other Wharton and University faculty as they consider appropriate.

The graduate group will decide on its preferred administrative structure. Currently, the chairs of the departments of Real Estate and Business Economics and Public Policy are responsible for jointly appointing a PhD Coordinator that will serve a two-year term, with the option to renew it for another two years. The PhD Coordinator is also the representative for the group to the Doctoral Executive Committee.

### **Student Involvement**

Students are expected to spend full-time on their coursework and research during the first two years of the program. In subsequent years, students are expected to work with faculty, preferably as research assistants or co-authors, thereby gaining the experience required to be successful researchers. Students are also required to TA a core course (any alternatives will need to be approved by the PhD Coordinator in each semester in their 3<sup>rd</sup> year and 4<sup>th</sup> year of the program as a funding requirement. Other activities that further the student's research careers are encouraged, subject to the approval of the doctoral coordinator (this includes teaching assistant positions). Failure to communicate with the doctoral coordinator about a research assistance or teaching job may result in cancellation of your scholarship.

### **Appendix 3. Ethics & Legal Studies PhD Policies and Requirements**

#### **CURRICULUM**

The course of study for the PhD requires completing sixteen graduate course units, comprising a four-course unit core in the Legal Studies and Business Ethics Department, two courses in statistics, a course in economics, a five-course major disciplinary cluster, two courses in ethical theory, and two electives. Students may enroll in courses beyond these sixteen graduate courses.

Each semester, each student must have their choice of courses approved in writing by both their Advisor and the Doctoral Coordinator. Any subsequent changes to a course schedule must also be approved in writing by both Advisor and Coordinator.

PhD students must take the two LGST proseminars, LGST 9200 and LGST 9210 (described in further detail below). Students must pass two preliminary exams, based on each of the proseminars. The preliminary exams consist of a written and oral portion. In addition, students must write and defend a dissertation proposal, and write and defend a dissertation.

The course requirements are as follows:

<b>Area</b>	<b>Course Units</b>
Ethics and Law in Business Courses	4
Statistics	2
Economics	1
Major Disciplinary Cluster	5
Ethical Theory	2
Elective	2
Dissertation	-
Total	16

Students may apply for credit for graduate-level work done at other institutions.

#### **Ethics and Law in Business Courses**

Students must take four LGST courses, including these two core course seminars:

- 1) Ethics in Business and Economics (LGST 9200)
- 2) Foundations of Business Law (LGST 9210)

Students must take two additional LGST courses from a list of approved courses held by the Doctoral Coordinator. Students without strong training in moral philosophy will be required to take LGST 1000 prior to taking LGST 9200. Students without basic law work will be required to take LGST 1010 prior to taking LGST 9210. The PhD versions of 1000 and 1010 should involve assignments suitable for doctoral students (typically, a term paper as the major assignment), to be determined by the course instructor. Students will take LGST courses, other than PhD seminars, under an independent study number, meet with the instructor periodically outside class, and write a paper. Independent study courses should be taught by members of the LGST standing faculty, though exceptions will be made in special circumstances. The requirements may be adjusted for students with law degrees.

#### **Major Disciplinary Cluster**

The purpose of the cluster is to ground students in a single academic specialty other than Business Ethics.

Clusters include the following: Management, Law, and Philosophy. Students must choose a disciplinary cluster during the first year, in consultation with a faculty advisor. Required courses may not be double counted. For example, a student choosing Philosophy as the cluster may not use the two required courses in ethical theory as part of the five-course cluster requirement.

#### **Statistics and Economics**

Students must satisfy the Wharton requirement of two courses in statistics. The economics requirements can be met with Economic Foundations of Research in Management, Managerial Economics and other courses approved by the Doctoral Coordinator.

#### **Preliminary Examinations**

The Ethics & Legal Studies preliminary examinations are given after students have completed LGST 9200 and LGST 9210. Each student is required to take separate written and oral preliminary examinations in both ethics and law. If a student fails the examinations, the student may retake the exams within a designated time span. If a student fails the examinations twice, the student will not normally be allowed to continue in the program as a PhD student. The student may at the discretion of the examination committee, however, continue to complete the requirements for the Master's Degree in Ethics & Legal Studies.

## **Evaluation Guidelines**

All doctoral students in the Legal Studies & Business Ethics department will be evaluated by the doctoral coordinator for good standing at a meeting in early June of each academic year. The evaluation process should serve as an opportunity to offer constructive advice. However, students that are found not to be in good standing are at risk of loss of funding and dismissal from the program.

## **TA Training**

All Ethics and Legal Studies PhD students will be required to complete the TA training through the Center of Teaching and Learning prior to becoming a TA.

## **Teaching**

Doctoral students are expected to teach at least one LGST course prior to graduation, typically in their fourth year. The nature of the course will be decided in consultation with the Doctoral Coordinator and Department Administrator.

## **Student Involvement and Requirements in the Department**

In addition to formal coursework, the student is expected to participate in the informal intellectual life of the Legal Studies & Business Ethics Department. This includes attendance at the department's weekly seminar series, where visiting speakers describe current research; attendance at the monthly gatherings of the Zicklin Center's Normative Business Ethics Workshop, plus participation in informal seminars investigating current topics of interest in a non-course setting. Students are expected to be in residence throughout their time in the program.

During their second through their fourth years, students are expected to work with faculty, as teaching assistants or research assistants, for 5 of the 6 semesters. Students will teach as sole instructor during the remaining semester (again, typically in the student's fourth year). The Doctoral Coordinator, acting in consultation with the Chair, will make assistantship assignments. There is a presumption of rotating assignments.

Each student is required to present a research paper to the Department each academic year prior to the student's successful proposal defense. Faculty are encouraged to attend the presentations.

## **Dissertation**

### *Selecting a Dissertation Committee*

By the fall of their fourth year, each student will form a dissertation committee. Membership on the committee must be approved by the PhD Coordinator. In addition, by the end of the fall of their fourth year, students will submit a preliminary draft of a dissertation proposal to the committee.

### *Timing of Dissertation Proposal*

By the end of their fourth year, each student will submit the final draft of a dissertation proposal, and defend it. Each student is expected to complete and defend a dissertation no later than the end of the fifth year in the program.

### *Candidacy*

A student becomes a doctoral candidate once they have successfully completed all of their coursework; passed the written and oral portions of their preliminary exams; and successfully defended their dissertation proposal. At that point, the student may denominate their status as "ABD" (all but dissertation).

## **Job Market**

The program provides full support for students going on the job market, and a series of meetings and timelines are provided to the students during the fourth and fifth years in the program. The ultimate objective of our program is to prepare students for a teaching and research career, ideally at a college or university. Because the placement process for academic jobs is lengthy, students should become familiar with it well in advance of the "job market year."

## **Evaluation**

Papers, presentations, proposals, and dissertations are evaluated as follows:

1. Pass – the paper successfully demonstrates the student's ability to conduct and report on original and independent research.
2. Conditional Pass – the paper shows potential and the student has done quite a lot already, but there is room for minor revisions. Students will be given the required date for revision submission.
3. Major Revision Required – the paper shows potential and the student has made some progress, but there is room for thorough revisions. Students will be given the date required for revision submission and to present again.

**Employment While in the Wharton Ethics & Legal Studies PhD Program**

Students in the Wharton Ethics & Legal Studies PhD Program are not allowed to accept employment without first receiving approval from the Wharton Ethics & Legal Studies PhD Program Coordinator. The implications of not requesting and receiving approval can be severe. The student could lose their good standing status in the program and this could result in their being asked to leave the program immediately.

**Time Limitations**

Students must complete all course work, preliminary examinations, and the dissertation requirement within 16 semesters, (excluding summer) from the date of their matriculation, excluding leaves of absence. Except in unusual circumstances, students will be expected to gain admission to candidacy status prior to the end of their fourth year in the program (excluding leaves of absence).

If a student has not completed all requirements for the PhD (including deposit of the dissertation) at the end of the fifth year after, they must submit to the full dissertation committee, within two months of completing that fifth year, a copy of all written work completed to date on the dissertation. If the student is unable to construct such a committee, they may be dropped from the doctoral program. If the committee deems that the submitted work is inadequate, the student may be dropped from the doctoral program. Funding is guaranteed for only the first five years of doctoral studies, and the guarantee depends on the student's remaining in good standing throughout those five years.

#### **Appendix 4. Finance PhD Policies and Requirements**

##### **PHD IN FINANCE – PROGRAM OF STUDY**

Please visit : : <https://fnce.wharton.upenn.edu/wp-content/uploads/2023/02/Finance-PhD-Program-of-Study-February-2023.pdf>

## Appendix 5. Health Care Management & Economics PhD Policies and Requirements

The Health Care management and Economics PhD Program combines intensive training in health care management and economics coupled with advanced training in a traditional business discipline.

Our program provides thought leadership and policy development in the following areas of distinction:

- Value of technology and innovation
- Health insurance design and reform
- Design and impact of incentives in numerous health industry contexts
- Competition and collaboration across the value chain
- The broad interprofessional/multidisciplinary work of the Leonard Davis Institute of Health Economics

Wharton's doctoral program is unique among similar programs because it provides a strong background in microeconomic theory, an advanced teaching of econometric and statistical techniques, a comprehensive analysis of both health economics and health care services research, and grounding in management/strategy theory and research. The doctoral program complements the course work with numerous opportunities to collaborate with faculty members in research projects exploring a wide variety of topics in the health economics and management fields.

### **Program Design and Core Competencies**

Training in health economics and management at Penn is designed to impart core competencies required to produce knowledge that is novel and significant. The curriculum balances theoretical and factual content with skill-based methodological experience. At the program's foundation is a commitment to rigor, excellence, and high professional standards. These core competencies include:

- (1) Identifying researchable and policy-relevant topics
- (2) Specifying precise research questions
- (3) Evaluating existing research literature in the area
- (4) Specifying rigorous yet tractable conceptual models with hypotheses whose testing will shed light on the policy relevant questions
- (5) Developing a wide range of empirical skills in the collection, analysis, and interpretation of data
- (6) Discussing results in clear language that can command both understanding and respect by technical and policy analysis
- (7) Understanding how to best identify stakeholders in the results of the research in question, how to motivate them to attend to the results of research and appreciate its new contributions in methods, rigor, and relevance, and how to communicate those results in settings, formats and language that are understandable, compelling, and persuasive.

### **Disciplinary Clusters**

The purpose of the disciplinary cluster is to equip candidates to conduct research in their areas of choice and to teach in fields in addition to Health Care Management and Economics. The courses may be drawn from the following clusters:

- Economics
- Operations and Information Management
- Statistics
- Finance/Accounting
- Management
- Marketing
- Business Economics and Public Policy

### **PhD Requirements**

The Wharton Doctoral Degree requires credit for 16 semester course units plus a dissertation. The requirements for candidates in the Health Care Management and Economics (HCM) program are as follows:

<u>Discipline</u>	<u>Course Units</u>
HCM	6
Statistics	2
Microeconomics	2
Major and Minor Disciplinary Cluster	6
Dissertation	-
Total	16

In practice, students have considerable flexibility in selecting courses outside their major or minor clusters, including Independent Study

A one-year graduate level sequence in statistics or in probability and statistics is required. Any of the following sample sequences can be used. Students may substitute other graduate level course upon approval of the graduate director of the Statistics department.

STAT 5000 & STAT 5010	Applied Regression and Analysis of Variance and Introduction to Nonparametric Methods and Log-linear Models
STAT 5100 & STAT 5200	Probability and Applied Econometrics I
STAT 5200 & STAT 5210	Applied Econometrics I and Applied Econometrics II
STAT 5200 & STAT 5120	Applied Econometrics I and Mathematical Statistics
STAT 5200 & STAT 5210	Applied Econometrics I and Applied Econometrics II
ECON 7300 & ECON 7310	Econometrics I: Fundamentals and Econometrics II: Methods & Models

Microeconomics	
Select one of the following year long course combinations:	
ECON 6100 & ECON 6110	Microeconomic Theory and Game Theory and Applications.
ECON 7100 & ECON 7110	Microeconomic Theory I and Microeconomic Theory II

### Health Care Courses

The major field course requirements are selected from the following list. Normally, all PhD students are expected to take HCMG 9000, 9010, 9020, 9030, 9040.

#### PhD Level

- HCMG 9000 Proseminar in Health Economics: Models and Methods
- HCMG 9010 Proseminar in Health Economics: Health Econometrics
- HCMG 9020 Special Topics in Health Services Research: The Industrial Organization of Healthcare
- HCMG 9030 Economics of Health Care and Policy
- HCMG 9040 Doctoral Seminar in Organizational Behavior and Theory in Health Care

#### Masters Level

- HCMG 8450 US Payer and Provider Strategy
- HCMG 8600 Leading Health Care Organizations
- HCMG 8520 Health Services Delivery: A Managerial Economic Approach
- HCMG 8590 Comparative Health Care Systems
- HCMG 8630 Management and Economics of the Pharmaceutical & Biotech Industries

### Curriculum

Students ordinarily complete all degree requirements in four to five years — two years of formal coursework, including directed research, followed by a thesis, which generally takes two years to complete. Before starting at Penn, trainees who plan to major in economics or related disciplines are strongly encouraged to take two semesters of calculus and statistics; they are also required to take the Wharton Doctoral Programs or the Economic Department's summer math course, which is a prerequisite for PhD level economics courses. The first year of coursework is normally spent on quantitative methods, economics, and courses in the HCM or the disciplinary cluster. Students must complete a summer research paper started during the summer of their first year. Typically, the student completes two Health Care Management and Economics courses during the first year. The second year is devoted to the remaining Health Care Management and Economics courses and the disciplinary cluster courses. Prelims are taken at the end of the second year. In the second and third years, students are required to participate in faculty-directed research projects for 10 hours a week. In addition, most students also participate in research during the summers, starting with their first summer. The final 2 years typically are devoted to full time work on dissertation research. The dissertation proposal defense, based on the proposed theoretical model and data analysis, and the final defense, are both open to the public. Students need to maintain a B average to maintain good standing. Students will have a year of probation to improve their status before any action may be taken. Final decision regarding any action will be made by the Doctoral Committee.



## Sample Course Sequence

Year	Fall	Spring
Year 1	<ul style="list-style-type: none"> <li>Health Economics: Models and Methods</li> <li>Organizational Behavior and Theory in Health Care</li> <li>Microeconomic Theory</li> <li>Applied Regression and Analysis of Variance</li> </ul>	<ul style="list-style-type: none"> <li>The Economics of Health Care and Policy</li> <li>Game Theory and Applications</li> <li>Applied Econometrics II</li> <li>Management and Economics of the Pharmaceutical &amp; Biotech Industries</li> </ul>
Year 2	<ul style="list-style-type: none"> <li>Structural Econometrics</li> <li>Econometric Methods for Program Evaluation</li> <li>Econometrics I: Fundamentals</li> <li>Industrial Organization of Health Care</li> </ul>	<ul style="list-style-type: none"> <li>Empirical Public Policy</li> <li>Health Econometrics</li> <li>Market Design</li> <li>Empirical IO</li> </ul>

### Summer Paper

The purpose of the Summer Paper is to have students complete a piece of original research on a topic in the major field. Papers could be analytical, empirical or both. Students are asked to identify a topic and a faculty mentor willing to supervise their research project by the beginning of the summer of their first year. The students are then expected to conduct independent work and summarize their work and findings in a paper. The paper should be completed and submitted no later than the end of the third year. This paper engages students in research early in the program, exposing them to research elements such as finding a novel research question, building a research plan, developing a conceptual framework, identifying data sources, obtaining, cleaning and manipulating data, presenting and interesting results, etc. The summer paper also establishes a mentoring relationship between the students and faculty members early in the program, which is beneficial for students. Ideally, the paper is a preliminary work which may eventually become a student's dissertation. Students need their mentor's approval and signoff on this paper.

### Prelim

The preliminary exam test consists of a number of questions dealing with (1) health economics literature and critical thinking; (2) knowledge of economic theory and econometrics; and (3) knowledge of economic valuation. The exam covers all course material for year 1 and 2 as well as additional readings. A student must pass the prelim to advance to candidacy. Students, who fail their prelim, have the opportunity to retake it one other time while remaining in good standing.

### Student Involvement in the Department

Students participate in faculty-supervised projects as research fellows, starting in the second year of the program. This work provides first-hand knowledge of research methods and design and often furnishes the basis for a dissertation topic. It also teaches students the art of securing funding for research, which is important for any aspiring health services researcher. Students are also expected to participate in the Leonard Davis Institute's Research and Policy Seminar Series, which feature external speakers working on cutting-edge health services research projects and policy issues. In addition to regular seminars, all PhD students are expected to participate in the departmental colloquium, which features discussion of research in progress by faculty members, students, and guests.

### Admission to Candidacy

Before admission to candidacy, the student is required to complete the course requirements as described. Health services research prelims are given at the end of the second year. The student's disciplinary cluster prelim is usually given at the end of the first year.

### LDI Associate Fellow Appointments

HCM PhD students, as well as other Penn PhD students with strong interest in health care research and are trainees of LDI Senior Fellows, are invited to apply for LDI Associate Fellow appointments, which provide funding opportunities for research as well as opportunities for research collaboration with other LDI Fellows and Senior Fellows.

For additional information on the MD-PhD program please see the [University of Pennsylvania's MD-PhD Program website](#).

## Appendix 6. Management PhD Policies and Requirements

### Curriculum

The PhD program in Management consists of 16 graduate-level course units:

- 2.5 CUs – management requirement (MGMT 9000, 9330, 9340, 9530, 1 Independent Study)
- 4 CUs management electives
- 2 additional units of research methods (e.g., MGMT 9700 + 970X; + 1 additional CU)
- 2 units statistics sequence (e.g., STAT 5000+)
- 2 units of courses in social science theory (e.g., any PhD level class in the college)
- 3.5 units of free electives

Up to 3 units of free electives can be transferred by related graduate-level coursework from another institution. In addition to the dissertation, students are also required to complete a research paper. Teaching skills are developed through the requirement of leading two recitation sections of our introductory undergraduate course. Doctoral students are also expected to participate actively in department colloquia.

<b>Required Management Foundations +B2:C30</b>	
MGMT 9000: Economic Foundations on Management Research	0.5
MGMT 9330: Psychological Foundations of Management Research	0.5
MGMT 9340: Sociological Foundations of Management Research	0.5
MGMT 9530: Seminar in Research Design + linked ISP	0.5
<b>Required Management Methods (9700 + one of 970x)</b>	
MGMT 9700: Introduction to Research Methods in Management	0.5
MGMT 9701: Quantitative Research Methods in Management (1)	0.5
MGMT 9702: Quantitative Research Methods in Management (2)	0.5
MGMT 9703: Qualitative Research Methods in Management	0.5
<b>Management Electives (Strategy)</b>	
MGMT 9250: Seminar in Corporate Strategy	0.5
MGMT 9270: Technology and Innovation Strategy	0.5
MGMT 9260: Seminar in Strategy and Organization Design	0.5
MGMT 9350: Seminar in Organization Learning	0.5
<b>Management Electives (Entrepreneurship)</b>	
MGMT 9370: Seminar in Entrepreneurship	0.5
MGMT 9380: Seminar in Social Entrepreneurship	0.5
<b>Management Electives (Organization Behavior)</b>	
MGMT 9520: Special Topics in Organization Theory	0.5
MGMT 9570: Special Topics in Organizational Behavior	0.5
MGMT 9610: Special Topics in OB: Making a Contribution	0.5
<b>Management Electives (Multinational Management)</b>	
MGMT 9550: Foundations of Multinational Management	0.5
MGMT 9600: Seminar in Non-Market Strategy	0.5
MGMT 9620: Seminar in Management in the Global Economy	0.5
<b>Management Electives (Human and Social Capital)</b>	
MGMT 9180: Contemporary Issues in Employment, Careers, and Work Organization	0.5
MGMT 9200: Seminar in Human Resources Research	0.5

## **Evaluation Guidelines**

All doctoral students in the management department will be evaluated by the doctoral coordinator and the doctoral advisory group (the “evaluation committee”) for good standing at a meeting in late May or early June of each academic year. The evaluation process should serve as an opportunity to offer constructive advice. However, students that are found not to be in good standing are at risk of loss of funding and dismissal from the program.

### **For first-year students, the following rules shall apply:**

- a. Grades: To remain in good standing, students must maintain a grade average of at least B.
- b. First-year examination: The examination committee includes the faculty responsible for first-year exam – instructors for MGMT 9000, 9330, 9340 and 9503. This committee will provide grades and feedback on the student’s exam performance for the evaluation. For any student whose performance is marginal or fail according to at least one committee member, the relevant member(s) of the examination committee, in consultation with the doctoral coordinator, will determine remediation activities, which may range from some form of remedial work to a re-take of the specific exam. Re-takes are subject to the same time constraints as the original exam and must be completed before August 15th. At the end of the re-examination or remediation period, the relevant members of the examination committee will again assess the student and provide feedback for the evaluation.
- c. Overall evaluation: Any student who the committee unanimously declares to have passed the exam and who has maintained the required grade standard will be deemed to have met the academic standard for continuation in the program. Should grade or exam performance be marginal or unacceptable, the evaluation committee and examination committee will jointly decide, following a simple majority voting rule, whether to dismiss the student from the program or to establish additional remedial work. This vote will also take into consideration feedback from the student’s first-year research assistantship supervisor as well as written feedback from any other faculty members who have significant information concerning the student’s progress. In the event of a tied vote, the doctoral coordinator will cast the deciding vote.

### **For second-year students, the following rules shall apply:**

- a. Grades: To remain in good standing, students need to maintain a grade average of at least B with no “permanent incompletes” (terminology used by the university to indicate an incomplete more than a year old, denoted by I\* on the transcript).
- b. Second-year qualifying examination: The examination committee is appointed by area coordinators in consultation with the doctoral coordinator, and it includes two to four members of the faculty from the elected subfield(s). This committee will provide grades and feedback on the student’s written and oral exam performance for the evaluation. For any student whose performance is marginal or fail, the examination committee, in consultation with the doctoral coordinator, will determine remediation activities, which may range from some form of remedial work to a re-take of the exam. Re-takes are subject to the same time constraints as the original exam and must be completed before August 15th. At the end of the re-examination or remediation period, the relevant members of the examination committee will again assess the student and provide feedback for the evaluation. Any student who fails a re-examination will be dismissed from the program.
- c. Overall evaluation: Any student who the committee unanimously declares to have passed the exam and has maintained the required grade standard will be deemed to have met the academic standard for continuation in the program. Should grade or exam performance be marginal, the evaluation committee and examination committee will jointly decide, following a simple majority voting rule, whether to dismiss the student from the program or to establish additional remedial work. This vote will also take into consideration feedback from the student’s first- and second-year research assistantship supervisor(s), the grade on the first-year examination, as well as written feedback from any other faculty members who have significant information concerning the student’s progress. In the event of a tied vote, the doctoral coordinator will cast the deciding vote.

### **For third-year students, the following rules shall apply:**

- a. The second-year paper must have been accepted by the two designated readers, and the presentation of this paper completed by October 15<sup>th</sup> at the beginning of the third year.
- b. Two recitation sections of MGMT 1010 must be completed.
- c. All course requirements must be fulfilled with no incompletes of any type on record and an overall grade average of at least B.

d. The evaluation committee will review the performance of any student who has not met these considerations and decide, following a simple majority voting rule, whether to retain or dismiss the student. The committee will solicit input from faculty serving as advisors or readers for the second-year paper, from other faculty involved with the student in collaborative research, and faculty instructors for any classes taken during the third year, as well as information from the first- and second-year evaluations. In the event of a tied vote, the doctoral coordinator shall cast the deciding vote.

**For fourth-year students, the following rules shall apply:**

a. The dissertation proposal must be approved by May 15th.

b. The evaluation committee will review the performance of any student who has not met these considerations. The committee will also solicit input from faculty serving as dissertation committee members and from any other faculty involved with the student in collaborative research to decide, following a simple majority voting rule, whether to grant fifth-year funding. In the event of a tied vote, the doctoral coordinator shall cast the deciding vote.

**For students in their fifth year and beyond, the following rules apply:**

a. There is no departmental funding available after the fifth year.

b. The evaluation committee will review the performance of each student annually soliciting input from faculty serving as dissertation committee members and from any other faculty involved with the student in collaborative research to decide, following a simple majority voting rule, whether the student is making satisfactory progress towards the completion of their dissertation. In the event of a tied vote, the doctoral coordinator shall cast the deciding vote.

Note: Any student dismissed from the program has the right to appeal to the Vice Dean of Wharton Doctoral Programs

**First Year Exam**

The first-year exam is given to allow students to demonstrate their competency in the Economic, Sociological and Psychological Foundations of Management Research as well as Management Research Methods after completing the first year of classes. The exam is scheduled in the first-half of May.

The exam is designed and graded jointly by the instructors of MGMT 9000, 9330, 9340 and 9530. The reading list for the exam is the joint syllabi for the three classes. All required readings from the syllabi are included even if they were not discussed in detail during class. Some instructors may choose to include optional readings as well.

The written component of the exam contains multiple questions. Students are typically required to answer certain questions and may be provided optional elections among other questions. Students are given two 6- 8 hour periods over a 2-3 day window to complete their written responses. The exam is open book / open notes and is delivered and returned via email to the doctoral administrative coordinator. Students should not disclose their identities on the exams; they will be provided with a unique identification number from the doctoral administrative coordinator to facilitate blind-grading. Throughout the duration of each exam period, students are not permitted to discuss exam content with anyone except to clarify questions with the instructor (provided s/he is available).

In assessing answers, instructors will look first for clear evidence that the student has seriously engaged each question answered, without neglecting any part. Beyond that, instructors will look for evidence that the student has absorbed and internalized the intellectual substance of the course material and has actively used that understanding in addressing the question. Various questions on the exam will be designed to test ability to (1) show knowledge in each of the subdomains; (2) integrate, compare, contrast and discuss theoretical arguments within the economic, sociological and psychological foundations of management; (2) integrate, compare, contrast and discuss theoretical arguments spanning economics, sociology and psychology; and (3) demonstrate an understanding of the philosophy and design of different methodological approaches to test these theoretical arguments.

The instructors grant either a pass, a conditional pass, or a fail on the exam. "Pass" means that the student has demonstrated his/her competency on the entire exam. "Conditional pass" means that the student needs a limited amount of remedial work; in this case, the instructors will require some additional writing on one or more components of the exam due within a maximum of two weeks. "Fail" means that the student has demonstrated serious deficiencies on one or more components of the exam; in this case, the instructors will indicate that either the entire exam or some components must be retaken and passed before July 31 for the student to retain good standing.

## **Second Year Exam**

The second-year qualifying exam is given to allow students to demonstrate their competency in a particular (pair of) management specialization(s) prior to proceeding to dissertation stage. It is scheduled during the month of May.

By the end of February, students choose a core specialization and may choose a related specialization from the following set of six specializations: Entrepreneurship, Human Resources, Multinational Management, Organization Behavior, Organization Theory and Strategic Management.

An examination committee is formed by 2-4 faculty members, where the head of the committee is a subgroup member in the core specialization area. The committee membership is chosen by the core subgroup area coordinator in consultation with the doctoral coordinator; at least half the members of the committee are subgroup members in the core specialization area.

A reading list is generated by the committee in conjunction with the student. Typically, the reading list contains required and optional materials from class syllabi as well as other related articles and is supplemented with additional articles that relate to the student's interests.

The written component of the exam contains multiple questions. Students are typically required to answer certain questions and are provided optional elections among other questions. Students are given between 8-10 hours to complete their written responses. The exam is open book / open notes and is delivered and returned via email. The oral component of the exam is held 2-3 days after the written component. In a session lasting between 30 minutes and 1 hour, the student answers questions intended to clarify their written responses. Throughout the duration of the exam period, students may ask clarifying questions of faculty members of their committee but are not permitted to discuss exam answers with faculty or fellow students.

After the oral exam, the committee grants a pass, a conditional pass, or a fail. "Pass" means that the student is qualified to move to dissertation stage. "Conditional pass" means that the student needs a limited amount of remedial work; in this case, the committee will require some additional writing due within one week and may request a follow-up oral exam. "Fail" means that the student has demonstrated serious deficiencies; in this case, the exam must be retaken and passed before August 15 in order for the student to remain in the program.

## **Second Year Paper**

The second-year paper requirement is designed to develop and demonstrate a student's ability to identify a research question, develop related theory and hypotheses, and test these hypotheses empirically. In addition, it provides an opportunity for the student to practice presenting a paper in a full-session (80- minute) format. The caliber of written work required is at the level of a submission to a high quality and individually appropriate conference venue that is likely to be accepted. Indeed, we strongly encourage students to submit their second-year papers for presentation at a major conference and our hope is that students will ultimately submit revised versions of these papers to equally prestigious journals for publication.

A second-year paper committee includes an "advisor" and two "readers". The advisor is the person who has had the most previous exposure to the paper. Then, for the requirement, you must have two readers (not including your advisor) approve the written paper. You may have coauthors on this paper, but you must be the primary or coequal author, and coauthors cannot serve as readers (but can serve as advisor). When you submit the paper to your readers, they will have two weeks to respond to the paper. They may approve the paper as is, or ask for revisions before they approve. They also determine whether you are ready to present the work in an open session. When they provide a go-ahead for presentation, you are responsible for securing a presentation date and time that works for your readers, your advisor, and a member of the doctoral committee (typically the doctoral coordinator). Approval of the written paper and presentation in the open session fulfill the requirement. It is worth noting that the likelihood of your readers approving your paper is strongly correlated with the extent to which they and your advisor have provided previous informal feedback.

## **Several deadlines apply:**

- 1) The second-year paper committee must be formed by May 15th of the second year.
- 2) The paper must be approved, and the presentation completed no later than October 15th of the third year or the student risks losing good standing.

### **Guidelines on Overlapping Topics**

Exploring a general topic of personal interest in more than one course paper is often a wise strategy as it allows students to deepen their expertise by bringing multiple lenses to it. With this approach, work done in multiple course papers on topics is likely to generate the seeds for the second-year paper, the dissertation, and other research papers. To ensure that professors are aware of students' work on the same topic in multiple courses, students need to disclose this information to course instructors as early as possible. If you plan to write a new paper on a topic that you have addressed in a prior class, you must (a) let your current professor know, in writing, that this is your plan; (b) clarify the new work that you will complete for the current class; and (c) give the current professor a copy of your prior deliverable. If you are writing on the same topic for two or more simultaneous courses, you must (a) let each of your current professors know, in writing, that this is your plan; (b) clarify the unique perspective of each paper; and (c) make the final deliverable for each course available to each other faculty member on request.

### **New Parent Accommodations**

Upon the birth or adoption of a child, students are eligible for a 6-month extension to the deadlines for the defense of the second-year paper and the dissertation proposal defense.

## Appendix 7. Marketing PhD Policies and Requirements

The department maintains the “Marketing Department PhD Student Manual” which is updated annually and posted on the department’s website: <https://marketing.wharton.upenn.edu/phd-program-information/>. It contains the information listed below plus more details about the PhD program requirements as well as department operations.

### Pre-Candidacy Phase

- Before admission to candidacy, the student is required to complete the required 15\* cu’s of graduate level courses as described in detail in the **Coursework** section below. (\*Students entering the program before Fall 2019 need to complete 17 CUs)
- Take and pass the Marketing **Qualifying Examination** offered at the end of the first year.
- Complete a faculty supervised **First Year research paper** due approximately August 25, before the start of the second year.
- Complete a faculty supervised **Second Year research paper** due by approximately August 25, before the start of the third year, and present it in a faculty seminar in their third year.

### Coursework

The PhD program in marketing is based on the completion of the dissertation as well as a minimum of fifteen graduate level courses in the following categories:

- **Major Field Course** (5 cu) – The Marketing Department requires that the students take five credit units (cu) of PhD seminars in the department as follows
  - Four credit units must be met by taking the following seminars:
    - MKTG 9400 and 9410 (1.0 cu total)
    - MKTG 9420 and 9430 (1.0 cu total)

Students entering the program prior to Fall 2019 also need to complete the following courses:

- MKTG 9710 and 9720 (1.0 cu total)
- MKTG 9730 and 9740 (1.0 cu total)
- Students meet the remaining three credit unit major field requirement by completing either the **Quantitative Tract** or the **Consumer Behavior Tract**, according to their research interests.

**Consumer Behavior Tract:** 3 cu’s as follow:

- MKTG 9500 (0.5 cu) **AND** MKTG 9510 (0.5 cu)
- MKTG 9520 (0.5 cu) **AND** MKTG 9530 (0.5 cu)
- MKTG 9540 (0.5 cu)
- MKTG 9560 (0.5 cu)

**Quantitative Tract:** 3 cu’s as follows:

- MKTG 9540 (0.5 cu) **AND** MKTG 9550 (0.5 cu)
- MKTG 9560 (0.5 cu) **AND** MKTG 9570 (0.5 cu)
- MKTG 9500 (0.5 cu)
- MKTG 9520 (0.5 cu)

If a required Marketing Seminar is not offered, students may submit a request in writing to the Marketing Department’s Doctoral Committee for a course substitution. Course Descriptions and schedules can be found on the Marketing Department website

- **Basic Course** (3 or 4 cu) - Students need to complete three or four credit units of a statistics and economics course sequence.
  - The specific courses permitted to satisfy the statistics basic course requirements are determined by the Wharton Doctoral Program Office in Section 5.4 of this manual. (2 cu)
  - The economics requirement can be met by taking one of the following three sequences (1 or 2 cu):
    - **ECON 7100** (1 cu) **AND** **ECON 7110** (1 cu) - **Microeconomic Theory I & II** OR
    - **ECON 6100** (1 cu) - **Microeconomic Theory** **AND** **ECON 6110** (1 cu) - **Game Theory and Applications** OR
    - **BEPP 9500** (1 cu) - **Managerial Economics**

- **Course in a Related Field** (2 or 3 cu) – Students must complete two to three credit units in related fields. A partial list of possible related fields includes: Communications Research, Decision Processes, Econometrics, Economics, Information Systems, Operations Research, Psychology, Sociology, and Statistics.
- **Electives** (4 or 5 cu) - Graduate level courses

Of the fifteen course units, a maximum of four can consist of transfer courses for graduate work at other universities. In addition, only two of the fifteen course units can be independent study courses.

### **Candidacy Phase**

The candidacy phase comprises the preparation and defense of the dissertation proposal, doctoral dissertation and the final defense of the dissertation. The department expects students to adhere to the sequence of events and requirements associated with the dissertation as detailed in the Wharton Doctoral Policies and Procedures Manual to which the appendix is attached. Upon advancement to candidacy, each student is required to have a Dissertation Committee to meet with them regularly and submit required progress reports.

### **Remaining in Good Standing**

Students in both the pre-Candidacy and Candidacy phases need to remain in good standing to continue in the Marketing PhD program. Criteria essential to being considered in good standing include:

- Participate in the Marketing Department Colloquia.
- Maintain a B+ average and making satisfactory progress in their studies. A typical course load is four courses per semester.
- Third Year Funding: Timely Completion of First Year and Second Year papers
- Third and Fourth Year Funding: At the end of the third **and subsequent years** each student needs to have a faculty member summarize the student's progress and prospects with the doctoral committee. It's up to the student whether to ask their advisor or someone else, and work with that faculty member to make a strong case on their behalf. To facilitate this, the student will complete the Student Progress Report required by the PhD Program Office. Based on these reports, the PhD Committee (or a funding sub-committee) will determine whether the student is "in good standing" and thus, whether or not the student's funding will be continued for the following year. At the minimum, we want to ensure that each student is in "good standing" in order to receive continued funding; at the same time, we want to raise the bar and assess whether the student has a realistic chance of getting a job at a top school.
- Fifth Year Funding: In order to obtain fifth year funding, our students must be in good standing and have defended their dissertation proposal prior to May 15 of their fourth year. In addition, the process described in the bullet point above will be required. Our intention will be to provide fifth year funding for all students who meet these criteria.



## **Appendix 8. Operations, Information and Decisions PhD Policies and Requirements**

### **Departmental Course Requirements**

A total of 16-course credits are required for graduation. Up to four appropriate graduate course credits can be transferred from another graduate institution, after approval of the student's advisor and of the PhD coordinator. This section outlines the remaining requirements for all PhD students in OID.

#### **Core Courses**

Students must take at least one of these core courses and earn a grade of B+ or better:

- OIDD 9000 - Foundations of Decision Processes;
- OIDD 9400 - Operations Management;
- OIDD 9550 - Research Seminar in Information Systems

#### **Statistics**

The Wharton School requires all PhD students to demonstrate proficiency in the material covered in one of several one-year sequences of statistics courses. The OID Department PhD students can satisfy the Wharton requirement with one of the following sequences: Statistics 5000-5010; Statistics 5200-5210; STAT 5150-5160; or Economics 7300-7310.

Students may demonstrate proficiency by either receiving a grade of B- or better in each course, or by passing a waiver exam administered by the Economics or Statistics Departments, or by transferring a comparable graduate-level course from another institution. Students may choose courses across sequences with permission from the PhD coordinator. Students are expected to complete their statistics requirements during their first year, before their qualifying exam.

#### **TA Training**

Students will be required to complete the 3-day TA training at the beginning of the academic year (usually end of August) in which they are scheduled to TA for the first time.

#### **Course Requirement for Each Area of Specialization**

This section provides a brief description of each of the three areas of specialization within the department and lists the required courses for each area. Beyond these required courses, students have the flexibility to construct a set of courses that supports their progress towards the completion of a dissertation. The particular program of study adopted by the student should be developed in consultation with the student's advisor.

##### *Decision Process (DP)*

DP focuses on making choices when faced with ambiguity, uncertainty, and conflicting views and motivations of the principal stakeholders. This specialization gives students a theoretical basis and applied orientation for studying the behavior of individuals, firms and policymakers. Students are guided by formal, normative models of how decisions should be made by individuals and groups, based on economic and statistical decision theories, as well as by descriptive analyses of how decisions are actually made, drawing on recent work in cognitive and experimental economics.

In addition to the departmental core course and Wharton Statistics requirements, DP students are required to take two economics courses. Beyond these requirements, students typically take courses in statistics, economics, marketing, psychology, and organizational behavior. These courses are offered by the OID Department, Wharton's Management, Marketing, and Statistics Department, as well as Penn's Psychology Department.

The qualifying exam in DP typically draws from material covered in OIDD 9000, along with that covered in the student's core economics and statistics sequences.

##### *Information Systems (IS)*

The IS track covers a broad range of research interests. Students interested in information and decision technology (IDT) focuses on the analytical and information technology-based methods for managing complex organizations. This interest in information strategy and economics (ISE) focuses on understanding the strategic aspects of information and information management.

In addition to the department core and core statistics sequence, all students focusing on IS are required to take a year-long microeconomics sequence.

Beyond these required courses, IS students typically pursue courses that support their specific research interests. Those with an interest in IDT concentrate on the theory, development, and application of computer-implemented technology for solving problems. As such, their coursework may include courses related to knowledge discovery and data-mining, computation and equilibria, and logic modeling, to name a few. These courses may be offered by the OID Department, Wharton's Management or Statistics Department, Penn's Computing & Information Science Department and other departments across the university. Students with an interest in ISE take additional courses on the methodological and theoretical foundations in economic theory, statistics/econometrics, and information technology.

The qualifying exam for IS students typically draws from material covered in OIDD 9550, along with that covered in the students' core economics and statistical sequences.

#### *Operations Management/Operations Research (OM/OR)*

OM/OR focuses on the processes that define an organization's outputs, as well as the methods commonly used to analyze these processes. Students specializing in OM are interested in a wide range of functions and organizational types, including operations strategy, product design, process design, technology management, capacity planning, inventory control, supply chain management, and service system planning. Students interested in OR focus more on the application of mathematical models to these areas.

Because a strong knowledge of OR tools is an important foundation for much OM research, OM/OR students are required to master the same set of coursework. In addition to the department core courses and the Wharton statistics requirement, OM/OR course requirements are as follows:

- A year of microeconomics
- Math programming
- Stochastic processes
- An advanced course in operations management

Beyond these required courses, OM/OR students take a wide range of methodologically-oriented course offered by the OID Department and Wharton's Marketing and Statistics Department, as well as the Economics Department and other departments around the university. Many OM/OR students take a sufficient number of statistics that they obtain a Master's in Statistics on their way to completing an OID Department PhD.

Examples of tools courses that students can take include the following: advanced linear programming, advanced nonlinear programming, game theory, integer programming, queuing theory, dynamic programming, and research methods.

The qualifying exam in OM/OR typically draws from material covered in the course requirements that are expected to be taken during the first year in the program.

#### **Qualifying Exam**

The Qualifying Exam consists of a written exam, an oral exam, and the student's summer paper. The qualifying written exam is taken at the start of the student's first summer. Each specialization determines the format of their exam. After the completion of the written exam, the student spends the summer working on his or her summer research paper. The oral exam is scheduled at the end of the summer and students are notified of their results shortly afterwards.

OID Department faculty members evaluate students based on the quality of their summer paper and their performance on the written and oral portions of the exam. If the faculty determines that the student has sufficiently mastered the skills needed to continue progress towards a PhD in the chosen specialization, then a student receives a passing grade. If the faculty determines that a student is missing some basic skills, it can specify remedial steps the student must undertake to receive a passing grade. These steps typically include, but are not limited to, reworking responses on the written exam, improving the summer paper and/or completing specific courses with a sufficient grade, and retaking portions of or the entire written exam. The student must complete all qualifying exam conditions by May 31 of the student's second academic year.

If the faculty determines that the student is sufficiently far from meeting requirements (or if the student fails to meet all conditions by the May 31st deadline), then the student receives a failing grade and may no longer continue with the program.

#### **Summer Paper**

During the summer between their first and second years, all students must complete a research paper under the supervision of a faculty advisor. Students should identify a faculty advisor and a topic for their summer paper by the end of the second semester. At that time a short (one-page) summer paper proposal should be signed by the student and the advisor and returned to the PhD coordinator. Students should work closely with their advisor throughout the summer. A completed paper must be submitted to the

PhD coordinator at the end of the summer. Part of a student's qualifying exam performance depends on the quality of the student's summer paper. The goal is to write a publishable quality paper. It is recognized that this is an ambitious target for the first summer, but it is a feasible target - several students have indeed published their first summer paper.

**Dissertation Proposal**

The dissertational proposal is designed to provide a student with early and formal feedback from the faculty on the student's dissertation plans. The dissertation proposal defense should occur before the end of the student's fourth year, with the fifth year dedicated to the completion of the dissertation. The dissertation proposal should include preliminary results as well as a detailed plan for work that will be completed in the dissertation.

**Dissertation Defense**

The final requirement in the program is the dissertation defense, which should occur around the end of the student's fifth year.

## **Appendix 9. Statistics and Data Sciences PhD Policies and Requirements**

This program is designed for students who desire academic research careers. The foundation is a sequence of courses in probability, mathematical statistics, linear models, and statistical computing. The program also encourages study in a cognate area of application.

### **Coursework**

The program for the PhD degree includes seven core courses in the 2023-2024 academic year.

STAT 9270 Bayesian Statistics  
STAT 9300 Probability Theory  
STAT 9310 Stochastic Processes  
STAT 9610 Statistical Methodology  
STAT 9700 Mathematical Statistics  
STAT 9710 Introduction to Linear Statistical Models  
STAT 9720 Advanced Topics in Mathematical Statistics

More advanced students choose from among various elective courses offered by the faculty of the Statistics and Data Science Department and other departments at the University. There is also considerable opportunity to take individually-structured reading courses with faculty in the department.

Under normal circumstances, students are expected to complete 13 classroom courses (13 credit units). These are comprised of the seven core courses and six elective courses, most of which are expected to be taken among those offered by the Statistics and Data Science Department. Students may waive some of the required courses based on classes taken prior to enrollment; waived courses must be substituted by electives to meet the 13 credit unit requirement. It is common for students to meet the 13 credit unit requirement by taking 6 classroom courses in the first year, 4 in the second, and then 1 every semester. Courses from other departments in the University may be taken subject to approval of the PhD coordinator(s).

Students often take non-classroom based courses (reading courses/independent studies). These courses are arranged between a student and one of the faculty members and provide a way in which students can engage research areas, perhaps leading to a dissertation topic.

Students are strongly encouraged to take or seriously audit one course per semester beyond the third year.

### **TA Training**

All new TA's are required to complete the 3-day TA Training workshop that is offered annually during the last week of August by Penn's Center for Teaching and Learning. Our students typically complete the workshop in the summer prior to their first semester.

### **First Year Exam**

During the summer between the first and second year, qualifying exams are given in mathematical statistics, statistical methods and probability theory. The department will meet at the start of the fall semester to discuss the performance of the students on these exams, their first-year paper, as well as their performance in the first year classes. Satisfactory performance on these exams as well as the first-year classes is required to continue in the program. In exceptional circumstances the Doctoral Coordinator(S) may arrange in advance, in consultation with the student, to defer or modify the first year courses or (portions of) the qualifying exam to the student's second year.

### **First Year Paper**

In the first year of their doctoral education all students are required to complete a summer research project under the mentorship of a faculty member. The goal of this summer project is to ensure that all students, by the summer after their first year, have made contact with a faculty mentor and have started research with this faculty mentor. It is expected that for many, but not all, doctoral students, this faculty mentor will eventually serve as their dissertation advisor. The research project will be finished by the end of the summer before the start of the second year and a paper written based on this research is to be presented to the department at the start of the fall semester of year two. The paper must follow the conventions of an actual publication: abstract, introduction, execution, summary/discussion, and references. Several forms of the paper are conceivable, including but not limited to the following: (1) a replication with commentary of a published paper, (2) a literature overview of a reasonably specific topic, (3) a short simulation study of a method of interest, (4) a fairly straightforward generalization of a known result in mathematical statistics or probability theory.

### **Matching of Students to Faculty Mentor(s)**

In order to ensure that all students receive adequate supervision and attention, the doctoral oversight committee will match students and faculty taking into consideration student preferences, faculty preferences, the current mentoring load of faculty (in terms of the number of students mentored by each), and the number of RA-ships that each faculty is funding using external grants. The details of this matching process are as follows.

It is expected that students should connect with faculty with whom they desire to work with during their first year, and have established a mutual interest in a mentor-mentee relationship. At the end of the first year, students should submit their first preference for faculty mentor to the doctoral oversight committee. The doctoral oversight committee will then match each student to a faculty based on the following guidelines.

- 1) If the student's top faculty choice agrees to the match and is not currently advising any PhD students, or if the student's top faculty choice pledges one full year of RA-ship funding, then the student is matched to that faculty.
- 2) If (1) does not result in a match, then the doctoral oversight committee will ask the student for a second faculty choice and apply the same criterion. The committee will continue to work with the student in this way until a match is made. A faculty with multiple students should typically have no more than one full student who is on TA-ship. Faculty should divide their RA-ship support so that each student has time free of TA-ship duties.

We encourage all students to update the doctoral oversight committee of their progress, especially in the beginning as they are searching for mentor/projects. Usually, but not always, the faculty that is matched to the student is advising the student on their first-year summer paper. At the beginning of the summer after their first year, doctoral students should send an email to the doctoral oversight committee about their summer plans and whom they are working with for their summer paper.

### **Second Year Paper**

During the summer between the second and third year, students will work on a more substantial paper under the supervision of a faculty member, ideally their PhD supervisor. This paper could be a preliminary version of a thesis proposal. There should be some attempt at original research or at least the framing of an interesting original research problem. It is recommended that the actual writing of the paper be coordinated with the Wharton doctoral writing program. This paper is to be presented to the department at the start of the fall semester of year three.

### **Third Year and Thesis Proposal**

Sometime during the third year or by the end of their fourth-year, students will present a formal research proposal to a group of at least three faculty members.

### **Oversight of Student Progress and Change in Mentor**

Every year, the doctoral coordinator will meet with each student to discuss their annual review report as administered by Wharton Doctoral Programs. For students in their second year and above, the doctoral coordinator will discuss with the student their progress towards their degree, and whether they wish to continue working with the faculty member to whom they are currently matched. At any time that a student wishes to switch thesis advisor, they need to discuss with the doctoral coordinator. The doctoral coordinator will bring the case to the doctoral oversight committee who will help the student find a different faculty mentor by the same matching process as described above.

### **Co-mentorship**

Students may be co-mentored by two faculty. Students are allowed to indicate co-mentorship requests when they submit their matching preferences, and two faculty members can pool their grant awards towards the funding of a full RA-ship. Students may also indicate later if they wish to add a second faculty as co-mentor. In this case, they should discuss the arrangement with both faculty as well as with the doctoral coordinator. The doctoral coordinator and doctoral oversight committee will talk with both faculty mentors to ensure that both agree to the co-mentorship and have TA/grant funding for the student.

### **Department Support**

Students are typically funded by the department for four years. A fifth year of support is contingent upon the availability of a research grant or another source of external funding. Students are evaluated at the end of each year. Financial support and continuation in the program is based on satisfactory performance in classwork and research, as well as duties performed as a teaching assistant.

Students in the Statistics and Data Science PhD Program are not allowed to accept employment without first receiving approval from the PhD Program Coordinator. Employment requiring approval include any teaching assistantships and all other paid employment

inside and outside of the Statistics and Data Science Department both during the Summer and the academic year. Students should discuss with the department program coordinator prior to applying for any summer research internships.

### **Student Involvement in the Department**

In addition to formal coursework, students are expected to participate in the informal intellectual life of the Statistics and Data Science Department. This includes attendance at Statistics and Data Science colloquia, where visiting speakers describe current research, plus participation in informal seminars investigating current topics of interest in a non-course setting.

The department holds a senior PhD student seminar day at the end of the spring semester each year during which non-graduating third-year and above students are expected to give 15 minute talks.

It is anticipated that students will spend some of their semesters as research assistants and other semesters as teaching assistants. Both are important in preparing for their future in academia. In the first year all students have one semester which is free of either of these roles as they transition to their life as a graduate student. The time devoted to either an RA-ship or a TA-ship is similar and should not exceed 20 hours in any given week. Publications that arise out of work based on research assistantships should have these students at least as coauthors. As part of their annual review students will be asked to list courses for which they would like to have a TA-ship. The department will try to avoid assigning students to the same faculty member unless both the student and the faculty make such a matching request. There is a presumption of rotating assignments.

Students who are not working as teaching assistants are expected to help as exam proctors or exam graders. The PhD oversight committee will work to make sure that this work is spread out fairly.